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SHORT COMMUNICATION

Feather Mites of Psittacine Birds

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ABSTRACT

The main objective of this study was to investigate for the presence of feather mites in psittacine birds which are reared at pet shops and private aviaries in and around Chennai, Tamil Nadu**.** Sixty two fallen feather samples were collected from Budgerigars, Cockatiels and African love birds and were examined for presence of mites. *Syringophilus* sp. (14.51%), *Dermoglyphus* sp. (17.74%) and mixed infestation (11.29%) of these were identified to be prevalent among these birds.

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INTRODUCTION

Parasitism is reported to be one of the major health related problems in the companion birds and is high on the list of clinical problems considered for differential diagnosis, especially in newly acquired birds and in large aviary collections. Feather mites may be found on pet birds, most often psittacines and are most commonly found on immunocompromised birds. Many are non-pathogenic and they are considered as commensal scavengers. However others may cause skin or feather damage. They feed on feather fragments, lipids, scaly skin debris. Philips (1993) stated that when in excess, feather mites move to the bird's skin causing itches and lesions that may interfere in their flight. Hence, there arises a need to study on the prevalence of feather mites in these birds.

MATERIALS AND METHODS

Sixty two fallen feathers were collected from captive Psittacine birds such as Budgerigars (n=35), African Love Birds (n=15) and Cockatiels (n=12) were collected for examination of feather mites. Initially, the feather samples were examined directly using a magnifying lens. Later, the quill/shaft/rachis/barb of feather was scrapped and boiled with 10 to 15 ml of 10% sodium hydroxide solution for 5 to 10 minutes using spirit lamp. The samples were centrifuged at 2000 rpm for 5 minutes. The supernatant was decanted and a small quantity of sediment was placed on a microscopic slide and examined under microscope.

RESULTS AND DISCUSSION

In Budgerigars (n=35), *Syringophilus* sp. (Plate 1) mites were encountered in 11.43% of the feather samples (n=4), whereas *Dermoglyphus* sp. (Plate 2) mites were noticed in 17.14% of feather samples (n=6) and mixed infestations comprising these species of mites were noticed in 11.43% of the feather samples (n=4). Among the African love birds (n=15), *Syringophilus* sp. mites were noticed in 13.33% of the feather samples (n=2), as was the case with mixed infections and *Dermoglyphus* sp. mites were noticed in 20% of the feather samples (n=3). Similarly, in Cockatiels (n=12) *Syringophilus* sp., *Dermogliphus* sp. and mixed infestations were found in 25, 16.67 and 8.33%, respectively (Table 1). The identification of both *Syringophilus* species and *Dermoglyphus* species mites was carried out according to the keys provided by Rebrassier and Martin (1932), Moraes *et al.* (2011) and Soulsby (1982).

Dorrestein *et al.* (1997) supported the encountering of both *Syringophilus* sp. and *Dermoglyphus* sp., as carried

Table 1: Prevalences of feather mites in pet shops and private aviaries (n=62)

S. No	Species of the bird (n= No. of samples collected)	*Syringophilus* sp.		*Dermoglyphus* sp.		Mixed infestation	
		+	%	+	%	+	%
1	Budgerigars (n=35)	4	11.43	6	17.14	4	11.43
2	African love birds (n=15)	2	13.33	3	20	2	13.33
3	Cockatiels (n=12)	3	25	2	16.67	1	8.33

+ Number of positive samples; **%** Percentage

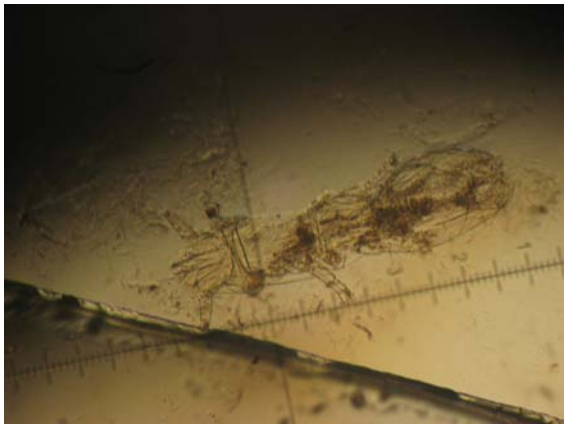

Plate 1: *Syringophilus* sp. Mite

Plate 2: *Dermoglyphus* sp. Mite

out in the study, by stating that quill mites were reported in gallinaceous birds, passerines, ratites and psittacine birds. The mites used the quill tissue for feeding and not on blood or sebaceous fluid and hence, such mites-infested birds did not show severe signs of diseases. This is in agreement with the findings of absence of any signs in the mite-infested Psittacine birds under study. However, it was quoted by Rebrassier and Martin (1932) that when the loss of feathers involving over half of the body, as well as loss of almost all the feathers occurred in a flock of 1500 fowls, the interior of the quill was found to have yellowish-grey or brownish powder and were found to contain large number of *Syringophilus* species mites. In this study, no such findings were observed.

Steiner and Davis (1981) encountered *Syringophilus*, the quill mite, which was different from *Megnina* species of feather mite. Turner (1992) reported that mites (order *Mesostigmata*) presented most problems and *Dermanyssus gallinae* - the red mite, could be found on budgies.

Reavill (1996) reported that red mites (*Dermanyssus* and *Macronyssus sp*) occurred occasionally in budgies and noted as nocturnal feeders taking blood meal at night so the birds showed only signs of anemia, without the presence of the mites on the feathers.

The activities of the host-birds, extent of their health status, extent of hygienic measures adopted under captive bird-enclosures, physiological factors, *etc*. could be attributed to the variations in the degree of external parasitism among the members of the same species in the bird-enclosures. Casto (1974) opined that adult female mites emerged from mature quills and dispersed to enter the developing feathers. The transfer of mites from the feathers of potent birds to the developing feathers of nestlings presumably occurred during the diurnal brooding or nest roosting.

Mixed infestation with both these mites was encountered in all the captive Psittacines comprising of Budgerigars, African Love Birds and Cockatiels at the rate of 11.43, 13.33 and 8.33%, respectively. The variations in the immune status, health conditions, differences in the climatic zones, feeding related factors, *etc*. could be contributed to this, in general.

The biological preference and attributes in addition to the nature of relationship between host and parasite might be attributed to the encountering of higher percentage of *Dermoglyphus* species of mites, in these species of Psittacine birds, in addition to variation in the management measures.

Over-crowding, variations in the feed related factors, body-condition, extent of veterinary care, lack of quarantine like facilities, deficiency of technical information with regard to ectoparasites in the Psittacine birds like Budgerigars, African Love Birds and Cockatiels, *etc.* might be attributed to such enhanced percentage of feather mite prevalences in Pet shops, as well as Private aviaries.

Due therapeutic approaches are needed to tackle the clinical problems that might arise due to the presence of quill-mites in these Psittacine birds. Though many external applications could be used against them, ivermectin might be of immense use against quill-mites. In this regard, it appeared noteworthy to mention the report from Dorrestein *et al.* (1997) stating that though in the past, there was no treatment for quill-mite related infestations in the birds, successful therapy was reported with usage of ivermectin at rate of 0.2 mg/kg orally, three times with four weeks interval yielded success in birds like ostriches.

Casto (1974) quoted that in addition to the transfer of mites from feathers of parent birds to the developing feathers of nestlings, the mites dispersed from the old quills into the developing feathers of the new plumage. Management of mite-control warranted a clinical approach that is oriented not only on the captive

Psittacines but also on the roosting place/ nest and nestlings. If mite infestations are encountered in plenty, then the aviary floors, walls and nests should be sprayed with a suitable insecticide to treat as well as to prevent infestations. In addition to the fallen feathes, it is better to examine at least few representative birds of each enclosure, subsequent to adaptation of scientific methods of capture and restraint technique, for evidences of ectoparasitic infestations and such examinations need to be carried out in a periodical manner.

The findings made in this study indicated the necessity of introduction of parasitological prophylaxis programmes especially in the high valued Psittacine group of birds and however, it warrants more detailed research programmes pertaining to different medicaments that are preferred for treatment.

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