PIGEON MITES AND HUMAN INFESTATION

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The pigeon population of Cathedral Square has for many years been part of the Christchurch scene. It is only in the last 2 years that their nuisance value has increased to the extent that the City Council Health Inspectors have been asked to make investigations. The pigeons (**Columba livia**) are said to be descendants of those used by reporters up to the 1930's for carrying stories to local newspapers (N.Z. Weekly News, May 18, 1970).

The birds nest in a number of city buildings and have invaded wall cavities and ceiling spaces. Their droppings have always been unsightly but it is only recently that mites associated with the birds have become a nuisance.

In May, 1970, complaints were received from a city hotel that guests and staff were being "bitten" by pigeon mites. Large numbers of mites were found in the 12 affected rooms. No medical records are available on the effects produced by the mite, but all persons agreed on marked inflammation, irritation and itching of the affected areas. A pest-control firm was hired and the mite infestation eradicated.

Over the last 2 years, seven other buildings have experienced a pigeon problem, and in two of these buildings, staff have complained of "bites" by mites. Treatment of walls, ceilings and nesting spaces with insecticide provided a relief from mite infestations, but sealing off cavities accessible to pigeons, or destruction of the birds, is considered necessary to remove the problem completely.

Four pigeons were sent to Wallaceville Animal Research Centre by the Christchurch City Council. The birds had been placed in

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plastic bags immediately after being killed. On receipt the birds were shaken up in warm water to which had been added a little detergent. The liquid was filtered through a 200 mesh sieve. Debris containing lice and mites was washed out of the sieve on to filter paper and excess moisture was drawn off using a Buchner funnel.

Specimens of **Goniocotes gallinae** and **Columbicola columbae** (Mallophaga : Ischnocera) were found, together with three species of Acarina.

The mites were identified as **Falculifer rostratus** Buchholz 1869; **Megninia cubitalis** Megnin 1877 (Analgesidae) and **Pterophagus strictus** Megnin 1877 (Proctophyllodidae) using keys given by Baker and Wharton (1952), Baker et al. (1956), and Roveda and Boero (1962).

Of the three mites, **F. rostratus** is the largest, the male being approximately 756μ long from the tip of the gnathostome to the tip of the opisthosoma; the female is somewhat smaller, being approximately 579μ long. Both **P. strictus** (male 241μ long; female 394μ long) and **M. cubitalis** (male and female both 290μ long) are much smaller.

The gnathostoma of the male **F. rostratus** possesses eversible stylets which are not present in the female. These stylets, which are sharp enough and large enough (88μ) to abrade skin, together with the large size of the mite in contrast to the other two species, implicates it as the pigeon mite most likely to cause human discomfort. Furthermore, **F. rostratus** was the mite illustrated in the "Weekly News" article.

There are, however, mites associated with the nests of pigeons (Woodroffe, 1953). The three main species found in England are **Tyrophagus tenuiclavus (= T. longior), Tyroglyphus farinae** and **Glycyphagus domesticus;** specimens of **Mealia** sp. **(=Dermatophagoides)** have also been found. **T. farinae** and **G. domesticus** have been implicated (Zumpt and Graf, 1950), in cases of human dermatitis where bulk foodstuffs are handled. There are contrary opinions, however, which hold that impurities in the foodstuffs are casual factors in the dermatitis (Zumpt and Graf, 1950).

The genus **Mealia (= Dermatophagoides)** is one of the pyroglyphid mites which have been associated with human allergy (van Bronswijk and Sinha, 1971). These mites can cause dermatitis (in some cases quite severe) but the prime importance of the Pyroglyphidae to man appears to lie in their ability to induce respiratory allergies.

The chicken mite, **Dermanyssus gallinae,** is associated with pigeons, and Laird (1950) records a case of human dermatitis caused by this mite, the source of which was a starling's nest. There is a possibility that the tropical fowl mite, **Liponyssus (Ornithonyssus) bursa,** which has been found in starling's nests in New Zealand and which attacks man (Murray, 1951) could be associated with

pigeons and their nests. This mite is almost cosmopolitan in its distribution and the fact that it has not been recorded as being associated with the pigeon is probably due to lack of discovery rather than for any other reason.

It is obvious that the Christchurch cases of irritation caused by "mites" is open to considerable conjecture as no one acarine can certainly be cited as the causal organism. It is unfortunate that nest material was not examined, since it is known (Lamb, 1952) that **T. farinae** and **G. domesticus** occur in New Zealand. More recently (Cornere, 1971) **Dermatophagoides** spp. have been found in house dust samples from New Zealand homes.

Consideration of the cases of dermatitis caused by the nidicolous fauna makes human infestation by pigeon parasites suspect. This is especially so since no previous records could be found to substantiate such an occurrence. Until further evidence can be obtained, i.e. identification of mites collected directly from human patients, implication of pigeon parasites in general and **F. rostratus** in particular, as a cause of human dermatitis, must be considered to be not proven.

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