

Letter to the Editor

Human infestation with birds mites in Wollongong

The recent article by Charles R Watson, *Human infestation with bird mites in Wollongong*,¹ may lead to confusion and inappropriate diagnoses in relation to the particular mites actually or potentially involved.

The author states in the Abstract that, 'If bird mite infestation is not correctly diagnosed, families who attempt to repeatedly treat it as if it were lice or scabies may incur considerable expense until the source of infestation is eliminated.' This statement is indeed correct, however, the author failed to diagnose the bird mite species in his infestation, stating that the mite was 'most probably from the genus *Ornithonyssus*.' Fortunately in this circumstance, the mite problem was readily apparent and easily controlled. However, often this is not the case and identification to the species level is critical to ensure that the above scenario of possible inappropriate treatment does not occur. For example, at least two mites from the genus *Ornithonyssus*, *O. bursa* (the 'tropical fowl mite', but often called the 'starling mite') and *O. bacoti* (the 'tropical rat mite', or simply the 'rat mite') bite humans² and can occur in Australian homes, yet their habits and ecology are very different and the misidentification (or non-identification) of the species can lead to incorrect treatments and failure to control the pest. To base an identification and to provide control advice on the basis of an assumption is clearly scientifically inappropriate. Another bird mite, *O. sylviarum* (the 'northern fowl mite'), also occurs in parts of Australia in association with commensal birds (e.g. starlings, mynahs, pigeons) and, although not particularly different from *O. bursa* in its impact on humans, it likewise must be distinguished from the rodent-associated *O. bacoti* for appropriate management of the infestation.

The author mentions that '...bird mite infestation...[is a] relatively uncommon cause of bites in humans', although he notes that many pharmacists in the area of Wollongong are aware of bird mites causing a problem. In fact, bird mites are a commonly treated pest in many Australian cities. Indeed, *O. bursa* is the second most commonly submitted specimen to the Institute of Clinical Pathology and Medical Research Department of Medical Entomology, the only National Association of Testing Authorities accredited laboratory for the identification of arthropods of medical importance in Australia. During the past five years, our Department received over 150 separate samples containing *O. bursa*, and the clinical notes with the specimens usually indicated that bites on humans were involved. This is likely to be the 'tip of the iceberg' with respect to overall activity of this mite. Specimens of *O. bacoti* are less frequently

submitted, but their distinction from *O. bursa* is important in order to advise on treatment and prevention.

Also in the article, it is stated '...fumigation of the roof cavity and adjacent rooms would be recommended in order to eradicate the source of infestation.' Fumigation involves using pesticides that are volatile in nature and produce poisonous gases toxic to arthropods. In the past, chemicals such as dichlorvos have been used in roof cavities for this purpose but fumigants are no longer registered for the control of bird mites.³ The correct recommendation is for the expert use of surface sprays or dusts for the control of bird mites in roof cavities and on walls, and a variety of products are currently registered.

The author indicated that treatment was with Lyclear, a permethrin based cream. This is confusing, as it is not clear if he meant that the bites were treated with Lyclear, or was he suggesting that the bird mites need to be treated on the skin, despite the fact that they do not persist on or burrow into the skin? Alternatively, is the author suggesting the use of Permethrin as a toxicant to provide a 'barrier' and further prevent bites? If it is the latter, than the product should be advocated as a preventative and not a 'treatment'. Either way, the immediate removal of the bird nesting material and the prevention of access to roosting spaces, and then the surface treatment of the immediate and surrounding area with an approved insecticide, should be the main strategy employed to control the mite. Applying either a toxicant (e.g. permethrin) or a repellent (such as DEET) is rarely required and not usually recommended. Humans should never be treated with insecticides as the contact between the mite and human is purely temporary and incidental, and the infestation is self-limiting once the source of the mites has been found and eliminated.

The listing of the most common bird mites in Australia is not strictly correct. The most common is *O. bursa*, whereas *O. sylviarum* is not nearly as common. To avoid confusion, reference should always be to the species name as different authors quote different common names. Another species, *Dermanyssus gallinae* (the chicken mite), is also relatively similar in appearance and, although most commonly associated with domestic chickens, it can be associated with commensal birds and occasionally attacks humans from this source.

The family name for *Ornithonyssus* is stated in the article as 'Gamasidae', this is an old name and the current family name is now Macronyssidae.⁴

It is stated that bird mites have eight legs, however it should be noted that the youngest developmental stage, larval mites, have only six legs and can thus be mistaken for small insects rather than mites, and this may cause confusion to those not familiar with their life cycle. Larvae however, are rarely collected except from the nesting material and do not feed.

The author mentions body lice as a possible differential diagnosis for bites, however body lice are rare in Australian communities other than in homeless, displaced or vagrant persons, and the lice or their eggs usually can be readily found in the clothing of infested individuals. Other mites, associated with live or stored animal or plant material are more likely to be diagnostic confounders.

The author is justified in raising the issue of bird mites causing urticarial problems for humans in Australia, as they are a commonly encountered arthropod pest, particularly during the spring/summer months. However, misidentification of this group is also common, as mite taxonomy is extremely complex. To suggest that they can be 'recognised with the aid of an identification key and a low power microscope' is a gross over-simplification. There are numerous species associated with other vertebrate hosts that

have been reported attacking humans, and these are in related mite families and many are morphologically almost identical to *Ornithonyssus* species; hence specialist entomologists should be used to confirm any putative identification. Additionally, 'misidentification' of the cause of urticarial complaints, in situations with or without obvious commensal bird or rodent association, is an issue that can lead to inappropriate and ineffective management advice.

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References

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