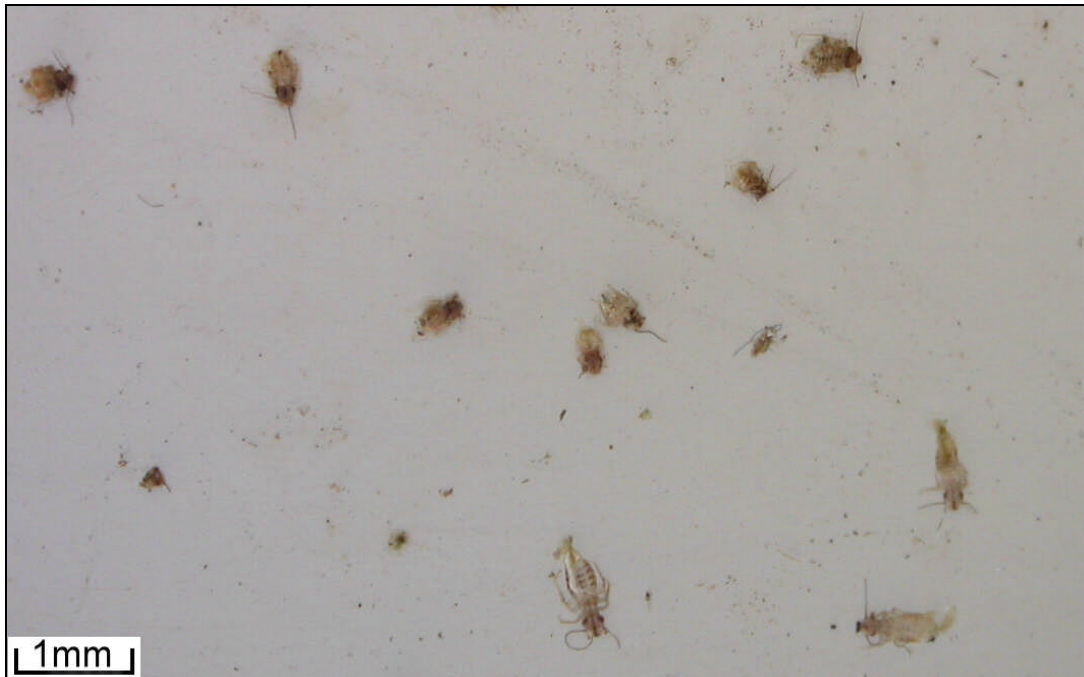




THE NATIONAL SOCIETY OF MASTER THATCHERS

Psocids (book lice).

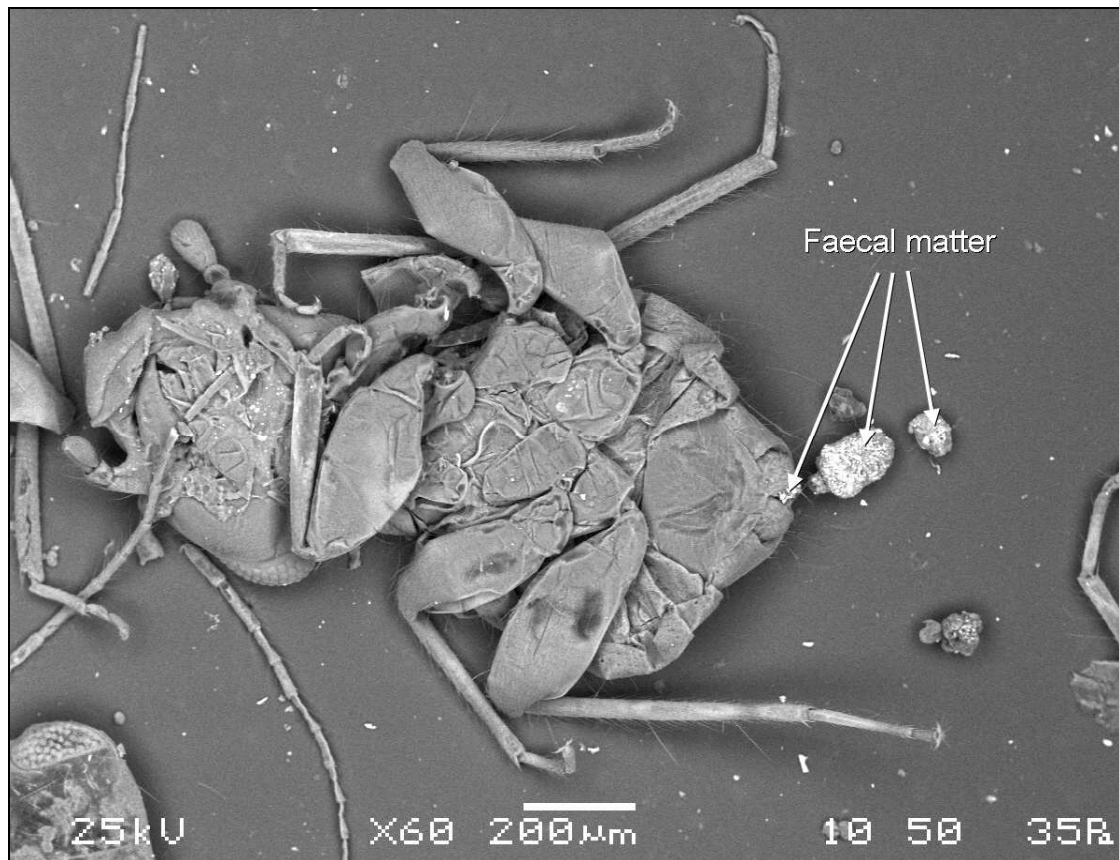
In recent times there have been increasing reports of booklice (Psocids – Mostly *Liposcelis bostrychophila* but with a few other species) associated with new thatch.



Psocids can be found in any domestic dwelling, not specifically thatch. When they are found in a property with a thatched roof the thatch is often wrongly blamed. Serious infestations almost always occur after extensive refurbishment; the psocids graze on microscopic moulds on damp plaster, but like dark thatch as a hiding place.

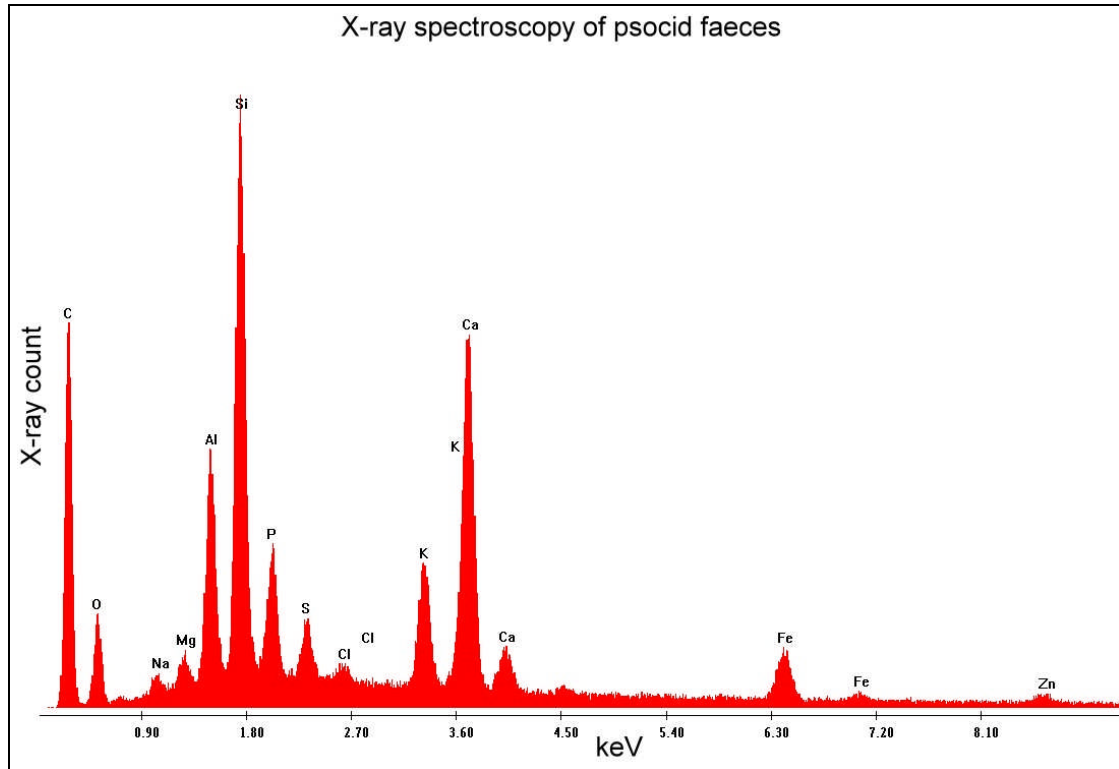
Psocids are small and very inconspicuous at low population density, able to hide in cracks and crevices, they are mostly innocuous inhabitants of vegetation but a small number have extended their range to include buildings. A point of interest is that the wingless species, which are normally found indoors, turn up in insect samples taken from low altitude air currents and this may be a significant means of dispersal for wingless psocids generally. *Liposcelis bostrychophila*, the principal psocid pest species in the UK and in homes in Europe, is particularly attracted to fresh plaster in new buildings and renovations where it feeds on the microscopic fungi that grow across the surface as the plaster dries out.

Psocids are extremely difficult insects to control. They are very shy and seek out the dark; their small size enables them to hide in crevices and other inaccessible places. They are able to survive without food for considerable periods of time and appear able to spread readily to new areas. A single individual or even one egg is sufficient to start a new population and, as all adults are female and parthenogenetic, populations of booklice can quickly become established. They depend on high humidity and a simple control that can be very effective is the use of dehumidifiers.



A scanning electron micrograph image of a captive psocid exuding faeces, these can be analysed to identify the insects' food source.

Each incident of infestation that we have investigated has occurred in buildings that were also undergoing refurbishment at the time of re-thatching or were completely new-built. We have found that the major attraction is new plaster. As it slowly dries out, a film of mould, invisible to the naked eye, forms on the surface of the plaster and the psocids graze over these surfaces.



An X-ray spectral analysis of the faeces shown the electron micrograph reveals major peaks for calcium (Ca) and silicon (Si) indicating the food source to be present on calcium silicate board. Carbon (C), oxygen (O), phosphorus (P), sulphur (S), chlorine (Cl) and potassium (K) would have originated from the creature's metabolism. Sodium (Na), magnesium (Mg), iron (Fe) and zinc (Zn) will probably have originated from building materials

Psocids do not consume cellulose so they do not feed on thatch. They do find thatch an attractive hiding place, however, it being cool and dark with many small spaces in which to hide.

In the UK generally there has been a gradual increase in the prevalence of psocid related complaints, it is not known if there has been an actual increase in numbers, possibly as a result of improved draughtproofing resulting in higher indoor humidities, or whether these complaints are connected with a decrease in tolerance of insects in the home. The numbers of complaints rise during the summer as psocids multiply in the warm months of the year. The UK summer is notoriously variable and there is a good agreement between the numbers of psocid related complaints to whether summer temperatures are above or below average.

*Roger Angold PhD MA(Cantab) BSc MSB CBiol FRMS
Science Advisor to the NSMT.*