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Pests from non-collection sources

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Most of us have encountered pests in our collections, more often than not the ubiquitous *Anthrenus*, the origin of which is usually an infestation in the collection or the building itself. However, recently a few new pest species have been discovered here in Oxford, for which the source was not the collection, but material brought in for non-collection use.

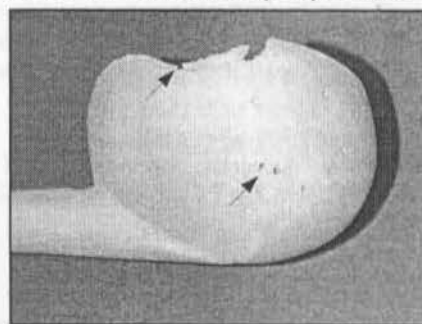
The Oxford University Museum of Natural History (OUMNH) has four displays of live invertebrates, namely cockroaches (non-pest species), stick insects, moth larvae and tarantulas. The cockroaches were obtained from the university's Zoology Department, and arrived in four large dustbins, from which half were put out on display and the remainder were kept in the foyer of the Hope Entomological Collections (HEC) for restocking and teaching purposes. On cleaning these dustbins and putting the livestock into new cages, an infestation of the red-rust flour beetle [*Tribolium castaneum* (Herbst)] and the grain weevil [*Sitophilus granarius* (Linnaeus)] were discovered. The flour beetles were within a matter of hours of arriving, beginning to take to the wing, with a large number being trapped in the fluorescent light fittings. The weevils were a little more subdued and remained on the harbourages and in the food bowls. Although neither of these species is known to attack insect collections, it is always possible; it would be more likely for an infestation to have become established in dead spaces within the museum building.

A third and more worrying pest, was the discovery of the American cockroach [*Periplaneta americana* (Linnaeus)], of which a couple of adult females were found hiding in the egg-box harbourages used in the dustbins. This is not regarded as pest of collections, but it could easily have become established in the building, causing public health problems, and, once established added to the biomass of organic material for *Anthrenus* to feed on. Luckily, the few cockroaches present were soon dispatched. After which a thorough check on the material from the Zoology Department to be disposed of was made, and it then frozen to ensure no escapees.

The tarantulas in the displays are fed on live cockroaches (surplus from the display) and crickets, namely the African two-spotted field cricket [*Gryllus bimaculatus* DeGeer] as this species is unlikely to escape and become established. On arrival, the crickets were unpacked into a new cage, the transportation containers

contained egg-box harbourages and bran as a food supply. In this bran were the larvae and adult of the hide beetle [*Dermestes peruvianus* Laporte de Castelnau] and the lesser mealworm [*Alphitobius diaperinus* (Panzer)]. In total, about a dozen larvae and five adult hide beetles, and half a dozen larvae and two adult lesser mealworms were discovered. The hide beetle, although not a serious threat to the entomological collections, could have caused problems in the zoology collections. The lesser mealworms are not known to attack natural science collections, but again could have become established in the building. Again, a thorough check was made of all material, all pests were despatched and all of the material was disposed of.

The Pit Rivers Museum (PRM) shop was the source of an unusual species of pest beetle. The museum shop buys in material for re-selling, recently a number of



wooden spoons and pens were imported from a dealer in Germany. On examination, the staff in the PRM noticed small emergence holes and a number of live beetles; these were sent to Hope Entomological Collections for identification. The beetles turned out to be powder post beetles (*Lyctus* sp.), a species name has yet to be determined. The powder post beetles are a notorious timber pest, of sapwood or semi-seasoned deciduous

hardwoods. With this information, it could be assumed that the majority of the collection (ethnographic material including wooden artefacts) would be safe as the condition of the wood was not suitable for infestation. The vigilance of the staff and the resulting freezing of all the infested stock soon solved the problem.

In conclusion, materials brought into a collections area should be thoroughly inspected for pest infestations, and then treated (freezing, anoxic environments etc.) regardless of pest presence or absence, as pests or their activities are not always clearly visible. Secondly, correct identification of pests is essential in both indicating their possible effect on a collection, and in their control. In the HEC, we have a policy of freezing all incoming materials, however this cannot be done when one is dealing with livestock for displays. The alternative would be to have a separate handling area for such things, but with the problem of shortage of space, this is rarely achievable. The PRM also has a freezing policy on all incoming materials. Unfortunately, in the instance illustrated above it failed to deal with the pest, this may have been due to the nature of the material, the hardness of the beetles or even the efficiency of the freezer (or lack thereof), so once again museums have to rely on the expertise and vigilance of their staff.