

Title Taxonomic imperatives in stored product acarology.  
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### **Abstract**

Despite decades of study, there are still many unresolved problems in the study of mite pests of stored food, caused by an inadequate level of research in taxonomy and basic biology. There have been several recent examples of these problems from Australia. *Aleuroglyphus ovatus* was recently detected in Australia, causing contact dermatitis in an employee. Research among preserved specimens then showed that this species had been present unannounced in Australia since at least 1949, causing an unknown level of food contamination and disease. Species of *Rhizoglyphus* cannot be identified with any confidence, because of the chaotic state of the taxonomy of the genus. This situation is causing disturbances in the international trade in stored vegetables and bulbs, and perhaps unnecessary fumigation and delays in shipments. Other genera of stored-food mites recorded from Australia also cause taxonomic difficulties (e.g. *Acarus*, *Tyrophagus*, and *Pyemotes*), because some species have never been adequately described and compared with the faunas of other countries. These taxonomic uncertainties pose a threat to trade, pest control, and the adequate treatment of human disease. Resolution of these issues will require an increased effort in conventional taxonomic and biological research, plus the adoption of modern technologies such as the use of molecular diagnostic tools and the production of interactive identification guides.