Invisible invasion by mites and microbes with imported pet beetles from South-east Asia

Kimiko Okabe\textsuperscript{a}, Hayato Masuya\textsuperscript{a} and Koichi Goka\textsuperscript{b}

\textsuperscript{a}Forestry and Forest Products Research Institute, 1 Matsumoto, 3058687 Tsukuba, Japan
\textsuperscript{b}National Institute for Environmental Studies, 16-2 Onogawa, Tsukuba, 305-0053 Ibaraki, Japan
Kimikook@ffpri.affrc.go.jp

As a first case study to develop a risk-assessment system for small organisms introduced with imported organisms, we investigated parasitic canestriniid mites, which have been imported into Japan via pet lucanid beetles from Southeast Asia. We collected mites from pinned specimens of Japanese lucanid collections before 1999 - when the Japanese government lifted a ban on the import of the beetles - and living mites from imported and native lucanid beetles collected after that. No foreign canestriniid was found on any of the native Japanese beetles. Because the mites collected from imported beetles were different from Japanese species, we conclude that the foreign mites have not yet established wild populations in Japan. However, because the Japanese mites migrate in a lab between hosts without host physical contact, introduced mites are assumed to be able to migrate from one to another in pet shops and at home. The foreign mites reproduced between 15°C and 25°C, suggesting that the mites could survive in southern and central Japan. Furthermore, we collected fungi of Laboulbeniomycetes from both native and foreign canestriniid mites. Thus, we conclude that the lucanid import without quarantine presents a potential risk of mite and fungal introductions to Japanese endemic canestriniid as well as to native Japanese lucanids.