Integrated Pest Management for the Angelo State Natural History Collections: an Approach for Small Collections

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Abstract

The Angelo State Natural History Collections (ASNHC) are located at Angelo State University, San Angelo, TX and are comprised of 5 collections: the Herbarium, Frozen Tissues, Herpetology, Mammalogy, and Ornithology. Of these collections, the Herbarium, Mammalogy, and Ornithology collections are at high risk for potential pest infestations. Four species of pests have been detected in these collections: Red-Legged Ham Beetle (*Necrobia rufipes*), Webbing Clothes Moth (*Tineola bisselliella*), Casemaking Clothes Moth (*Tinea pellionella*), and Drugstore Beetle (*Stegobium paniceum*). Prior to 2013, these infestations remained continuous but fluctuated in concentrations and attempts to manage the problems had been mostly reactive. A preventive approach is critical to ensure the longevity and safety of the approximately 150,000 specimens housed in the ASNHC. In July 2014, an assessment of the ASNHC began to determine severity of infestation and ways to mitigate damage. The assessment included a thorough inspection of each cabinet in the Herbarium, Mammalogy, and Ornithology collections. Within each cabinet, drawers were evaluated on a scale of 0-4, ranging from no signs of pests to live pests present. Cabinets with live pests were treated at -20°C. Drawers were then vacuumed to provide a clean baseline for future case inspections. The cabinet inspection showed no signs of pests in the Herbarium, though five of the fifty-three cabinets in the Mammalogy and Ornithology collections had at least one live pest present. Additionally, ten blunder traps were monitored monthly for presence of pests. After initial monitoring began, efforts were made to improve housekeeping and additional preventative policies were instituted in collection areas. Data from the blunder traps suggest a decline in pest activity after policies were initiated. This research is now being used to develop an Integrated Pest Management Plan for the ASNHC.

The results of this research will be submitted to Collection Forum, a publication of The Society for the Preservation of Natural History Collections.