

From panic to confidence: how we restored a moldy herbarium

Annika Bengtson, Johannes Lundberg, Andrea Hennyey, Cecilia Larsson, Dan Holtstam, Dennis Strid, Sara Danielsson, Tobias Malm, Veronika Johansson



Background

The herbarium of the Swedish Museum of Natural History (S) houses around 5 million specimens. During the recent renovation of the herbarium building the collections were stored in a warehouse off site. The main collections were stored in a total of 40752 cardboard boxes placed on 2054 pallets.

What happened

During the move back three water damaged boxes containing herbarium specimens were discovered in the warehouse. The cause appeared to be a leakage of condensation water from the ventilation. When the boxes were delivered water was dripping from them, the specimens were wet, many of them covered in mold, and there were also traces of bacterial growth. The staff that first examined the damage judged the specimens as beyond salvation. Since there were several important 18th, 19th and early 20th century specimens, we decided that we would make an attempt to save the specimens.

What we learned

- Do not panic! Focus on stabilizing the situation to prevent further loss or damage, and then set up a plan.
- Be prepared for disasters and accidents that may lead to damage before they occur. Having protocols for handling water- or mold damaged objects would have been helpful.
- Reach out to colleagues at other museums for help and advice.

What we did

- The damaged boxes were discarded and the specimens they contained were isolated from the rest.
- The damaged specimens were immediately placed in a freezer at -20°C .
- The specimens were, as far as possible, separated from each other and dried in a room with enhanced ventilation.
- When dried the specimens were again stored in a freezer (-20°C) in waiting for restoration.
- During restoration, the specimens and any labels were carefully cut loose and transferred to new sheets, thus minimizing the occurrence of mold to only the specimens and the labels. It was possible to remove most of the visible mold by gentle brushing.
- The remounted specimens will be marked with warning signs indicating the presence of dormant mold.
- We did not attempt to kill the mold as such treatments would increase the risk of further damage.

