



Opening the Vault Transcript

Using Museum Collections for Science

Speaker: Schutze, M.

What would you do if you found this lamp in your Granny's shed and wanted to know more about it?

Well, if you're like a lot of people, you might bring it in to the Queensland Museum Inquiry Centre. People bring in all kinds of weird and wonderful things. For instance, someone from Winton once brought in a great big bone that they thought might have come from a dinosaur. We were amazed at the size of the bone but we didn't think it was from a dinosaur, so we took it to our mammal curators. They had a look and straight away knew it was from the front flipper of a Humpback whale. It's still a mystery how a whale ended up in Central Queensland.

So anyway, back to the lamp. As I said, if we're [Inquiry Centre Team] not sure about something or it's a bit tricky, we often have to ask the curators and researchers, upstairs.

So we might take this lamp to the Science and Technology curators, who would look at it and compare it with other lamps

and come up with some ideas about what it is and where it might have come from. From there it might find its way into the collections to be studied and looked after.

Things don't just sit in a box - our scientists use them everyday to do everything from identifying a new species to learning more about Queensland's history.

Of course the Museum collects much more than dinosaurs, Humpback Whales and old lamps - we also have shells, insects, spiders, snakes, fish, birds, lizards, worms, rocks and sponges - almost 9 million objects and specimens in all.

And they come from all kinds of places like field trips, other museums, and even your own back shed.



Fantastic Flies Transcript

Science Research at QM

Speaker: Lambkin, C.

I'm one of a team of scientists, staff and volunteers at the QM and I study flies. I have been working on the flies from Lamington National Park, looking for changes in the species present at different altitudes. If the climate warms, species may move up the mountain to habitats that remain at their required temperature or moisture levels, or become extinct. If we monitor species at a particular altitude, we may be able to investigate the impact of a changing climate. So far we have counted and sorted 150 thousand flies into families and they are then sent to specialists to sort into species. Only a quarter of Australia's insects are actually described - that is have a name. We have ten thousand species of described flies in 100 families in Australia.

I am a taxonomist, that is, I name and describe new species. Generally in only two families – the *Bee Flies* and the *Stiletto Flies*. I collected several undescribed stilettoes from Lamington National Park. But in order to describe them, I have to gather all the specimens ever collected of that group from collections around Australia and all over the world.

I examine them through the microscope to compare and detect the variation and to work out which are already named and which are not. Then to valid, those descriptions have to be published in a scientific journal.

One of the questions I wanted to answer is “why are there so many Stiletto Flies in Australia?” Using molecular data and fossil evidence, I showed that many Australian Stiletto Flies evolved with the drying out of Australia over the last 15 million years as a response to historic climate change.

We cannot know what is changing in our environment, unless we know what is already there.

