LEARNING PORTAL

ROYAL BC MUSEUM

Birds of a Feather

Investigating Fossil Feathers from the McAbee Fossil Beds

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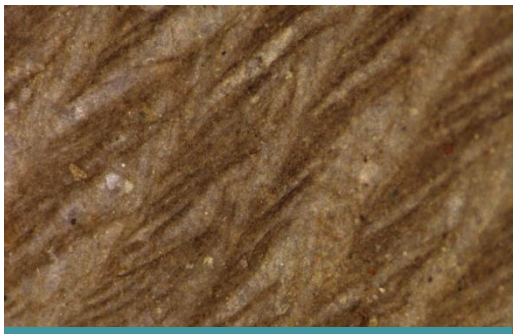
From Fossilization to Discovery

The McAbee fossil beds, near Cache Creek, BC, were once an ancient lake, likely home to many species of now extinct birds living around the water's edge. But our understanding of this ancient bird biodiversity is currently limited to only two partial skeletons–one from an ancient loon, and one from an extinct type of bird with parrot-like feet called a zygodactylid. However, the Royal BC Museum palaeontology collection is home to more than 150 isolated feather fossils from the McAbee Fossil Beds. Could these provide more information about what kinds of birds lived in this area 53 million years ago? I worked with curator of palaeontology Dr. Victoria Arbour to find out more!



Fossil feather barbs and barbules under the microscope. McAbee Fossil Beds, B.C. Credit: V. Arbour RBCM

Feather Features

Feathers have a stiff quill with soft, branching strands called barbs, and even smaller strands called barbules. The size and spacing of barbs and barbules on a feather can tell us about how a bird stays dry and warm. They are different for birds that live in trees or in the water.

Measuring Fossil Feathers

We took pictures of fossil feathers magnified by a microscope, then measured the size and spacing of barbs and barbules in those pictures using a software program called ImageJ. Next, by plotting the measurement numbers into graphs, we compared the fossil feathers to examples from birds alive today to try and identify a possible match. We discovered that the McAbee fossil feathers are not very similar to modern birds, because they tend to have more barbs spaced closer together. The puzzle remains whether these unique feather features originated from differences between ancient and modern birds, or result from changes to the feathers during the fossilization process.