

New database features 710,000 natural history records from Canadian Museum of Nature

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The Canadian Museum of Nature, Canada's national museum of natural history, has launched a free scientific database featuring open access to more than 710,000 records of plants, animals, fossils, and minerals that are part of the museum's national collections.

The searchable online resource is accessible through the museum's web site at nature.ca/collections-online.

The digitized records represent about one-quarter (or 22%) of the museum's estimated 3.2 million "cataloguable units" of biological and geological material. Overall, the museum estimates it manages more than 10.5 million individual specimens that have been acquired over more than 150 years. The collections, which cover Canada and other parts of the world, are stored and curated at the museum's Natural Heritage Campus in Gatineau, Quebec.

"The great potential of this online access is that it takes a huge collection and unleashes the associated data over the internet for all kinds of people to ask questions about the natural world," explains Dr. Mark Graham, the museum's Vice-President, Research and Collections. "This tool provides the power for a researcher to choose the data that they want, use it freely, and apply it to the scientific questions that they are trying to answer." In some cases, online access can minimize loans of valuable specimens, or reduce the need for direct contact with a curator or a

personal visit to the collections.

Data from natural history collections, supplemented by images, can be applied in numerous ways. These can include tracking invasive species patterns, understanding competition in ecosystems, mapping changes in habitat or species range over time, defining poorly studied areas for collecting, or assisting with computer modelling related to issues such as climate change.

For [natural history](#) museums, digitization means providing online information that defines a specimen or object, which is usually indicated on a specimen label or sometimes written in field notes. This information may include its scientific name, when and where it was collected, who collected it, and other pertinent information such as the habitat where it was found.

"Anything that provides context about what that specimen is, what it was doing in its [natural](#) environment and where it was found is recorded," says Dr. Jeff Saarela, a museum research scientist and botanist. He led the project team that developed the database in collaboration with software developer eSolutionsGroup. "The museum's staff have been digitizing our specimen records for over 20 years, but this is the first time that information from the collections has been combined in one portal that can now be shared easily with the world."

The database is enhanced by the addition of about 16,000 records with high-resolution images—the majority are plant specimens stored in the museum's National Herbarium of Canada. The [plants](#) can be easily scanned because they are pressed and preserved for study on flat sheets. In addition, maps using GPS coordinates provide a visual cue to where each specimen was found.

Records can be searched under five main categories: discipline

(mineralogy, paleobiology, botany and zoology), taxonomic classification (using the scientific naming convention), location (from latitude/longitude to geographical locale), specimen information such as catalogue number, and a collection date range.

The data fields are also standardized to meet global standards, so that the records can be integrated with international initiatives such as the Global Biodiversity Information Facility, based in Denmark. This network provides [open access](#) to scientific data from cooperating museums, universities, government agencies, NGO's and laboratories in more than 50 countries.

The museum will continue to add an estimated 16,000 records annually to its Collections Online portal. Priorities to date have included existing records from the museum's internal databases, type specimens (those used to define a new species), new specimens collected for study by the museum's scientists, and areas of scientific leadership for the museum such as specimens from the Arctic.

"Ultimately, this initiative allows the Canadian Museum of Nature to open up its back rooms to the world, so anybody can go online and look for information about specimens they might be interested in," says Saarela.

Provided by Canadian Museum of Nature

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