Living fossils, as an Icon for Understanding the Past and Current Climate Changes

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The climate has not been stable throughout the Earth's history. In discussing anthropogenic problems, it is important to show how current climate changes differ from historical changes. Living fossils have the potential to make people understand how environmental issues change over time. A new temporary exhibition in the National Museum of Nature and Science, Japan, focuses on a living fossil, Metasequoia, a cupressaceous conifer genus "discovered" eighty years ago by a Japanese scientist. The genus is well known because an extant species is commonly planted in school grounds and along pavements in Japan. While this species is no longer found in natural habitats in Japan, we are able to find and collect numerous fossil remains throughout the islands. Metasequoia has been extinct from the Japanese islands until the middle Pleistocene, well before the Anthropocene. Soon after the recognition of this genus from fossil remains in Japan, natural habitats of Metasequoia were discovered in Central China in 1948. The stands of Metasequoia seen outside of China today are planted and conserved through people's efforts. In our exhibition, we will show the history of the discovery of this species, its fossil records from around the world, and a possible scenario describing its extinction in Japan and rest of the world due to climate and topographical changes during the Quaternary Period. Next, we will show the conservation of natural stands in China after its discovery and current conservation efforts undertaken in China. We believe this prehistoric icon will provide a clear message to the general public about the relationship between the environment and biota, as well as about the difference between historic climate changes and the changes we are facing today.