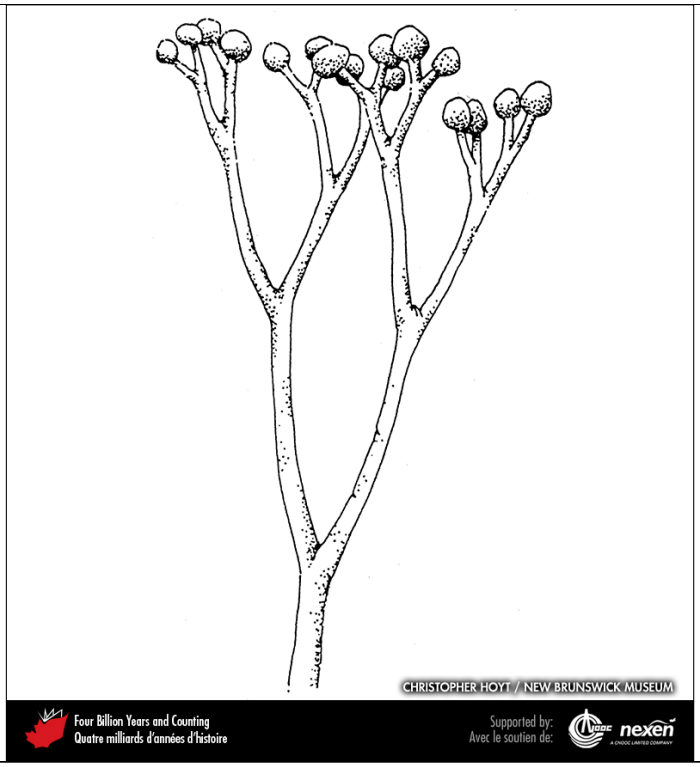
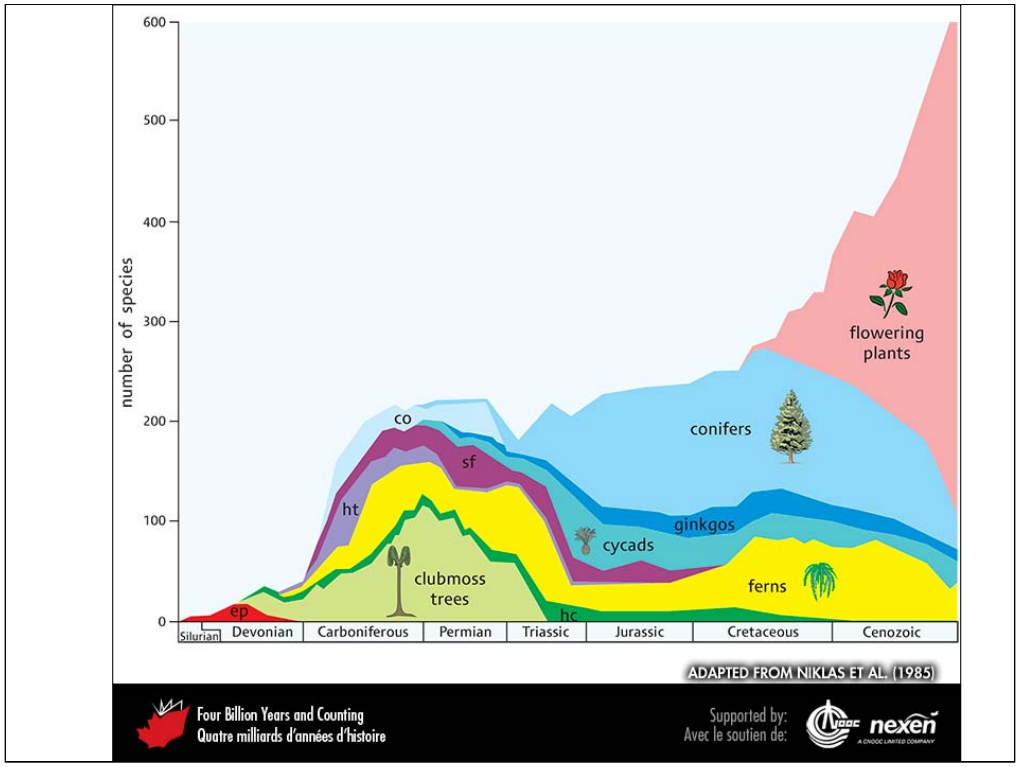
BOX 7

A receptaculitid from the Ordovician Tyndall Stone (Chapter 8). Receptaculitids may represent an extinct type of calcareous alga. ROB FENSOME, SPECIMEN COURTESY OF THE UNIVERSITY OF SASKATCHEWAN.

Cross-section of the stem of a Devonian plant akin to *Psilophyton*, an early tracheophyte from Dalhousie Junction, New Brunswick. PATRICIA GENSEL.



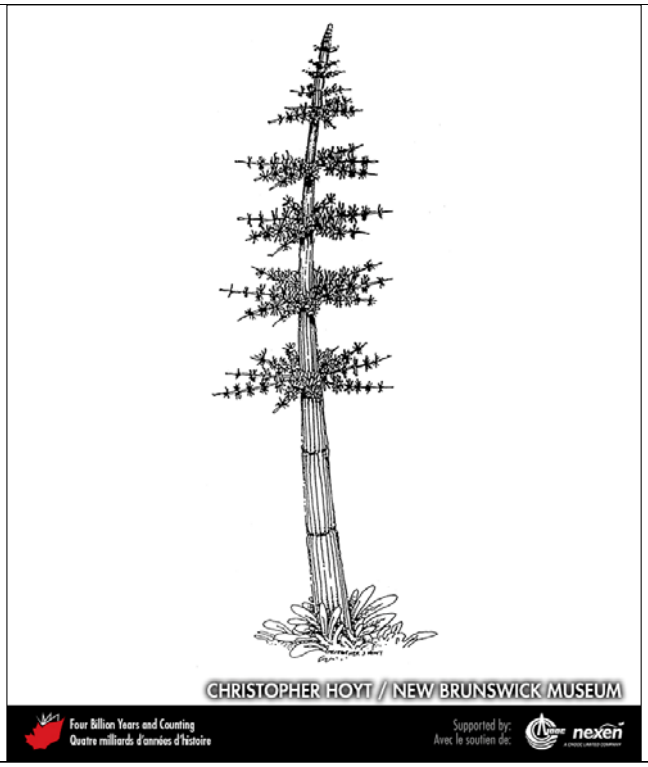
Sketch of *Cooksonia*, an early vascular plant found in Devonian strata at Dalhousie Junction, New Brunswick. CHRISTOPHER HOYT AND THE NEW BRUNSWICK MUSEUM.



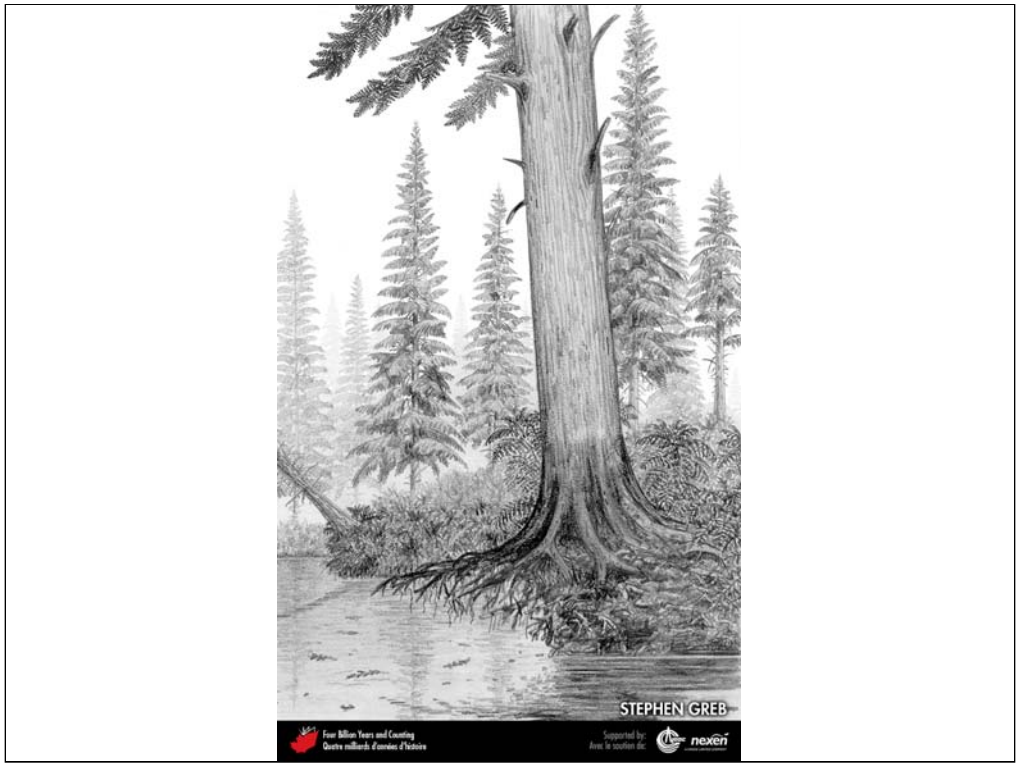
Distribution of the main groups of vascular plants through time. Abbreviations: co = cordaites, ep = early plants, hc = herbaceous clubmosses, ht = horsetails, and sf = seed ferns. ADAPTED FROM NIKLAS E T AL. (1985).

Scene from a late Carboniferous forest. The dominant trees are clubmosses, with many specimens of *Lepidodendron* (centre) and, in the distance at right, *Sigillaria*. To the left is a grove of the early gymnosperm *Cordaites*. PAINTING BY JUDI PENNANEN, COURTESY OF THE NEW BRUNSWICK MUSEUM.

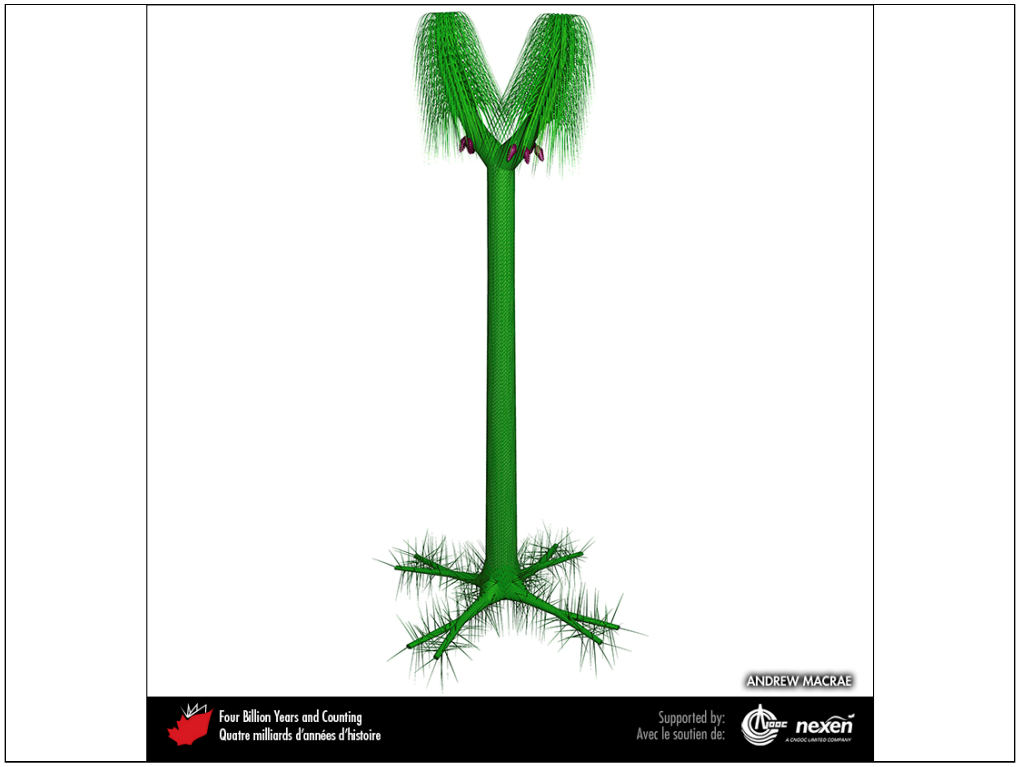
Whorl-shaped leaves known as *Asterophyllites* represent the foliage of the fossil horsetail, *Calamites*. Several branches with leaves are preserved in this specimen from Minto, New Brunswick. HEINZ WIELE, COURTESY OF THE ATLANTIC GEOSCIENCE SOCIETY; SPECIMEN COURTESY OF THE NEW BRUNSWICK MUSEUM.



Sketch of the horsetail tree *Calamites*. CHRISTOPHER HOYT AND THE NEW BRUNSWICK MUSEUM.

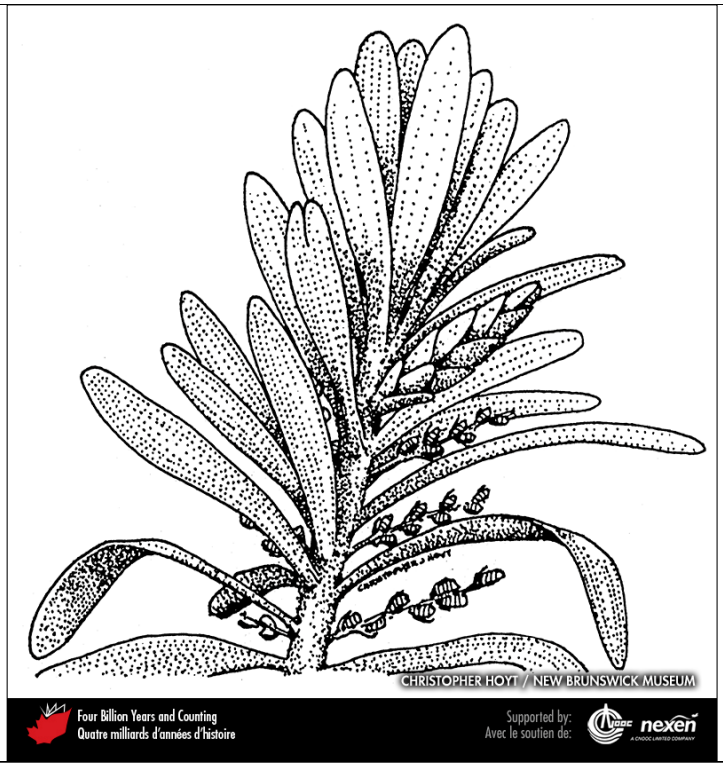


Archaeopteris is among the earliest known plants to have had wood, the evolution of which gave rise to trees and the first forests. *Archaeopteris* has been found in late Devonian strata, for example, at Miguasha, Quebec, and in the Canadian Arctic. STEPHEN GREB.



Reconstruction of the clubmoss tree *Sigillaria*. ANDREW MACRAE.

Some early seed plants, such as *Medullosa*, resembled ferns but reproduced with seeds; hence they are known as seed ferns. CHRISTOPHER HOYT AND THE NEW BRUNSWICK MUSEUM.



Leaves and cones of the gymnosperm *Cordaites*, a widespread form in Late Carboniferous nonmarine strata of the Maritimes Basin (Chapter 8). CHRISTOPHER HOYT AND THE NEW BRUNSWICK MUSEUM.

A spruce cone from Eocene fluvial deposits on Axel Heiberg Island, Nunavut. BEN LEPAGE.

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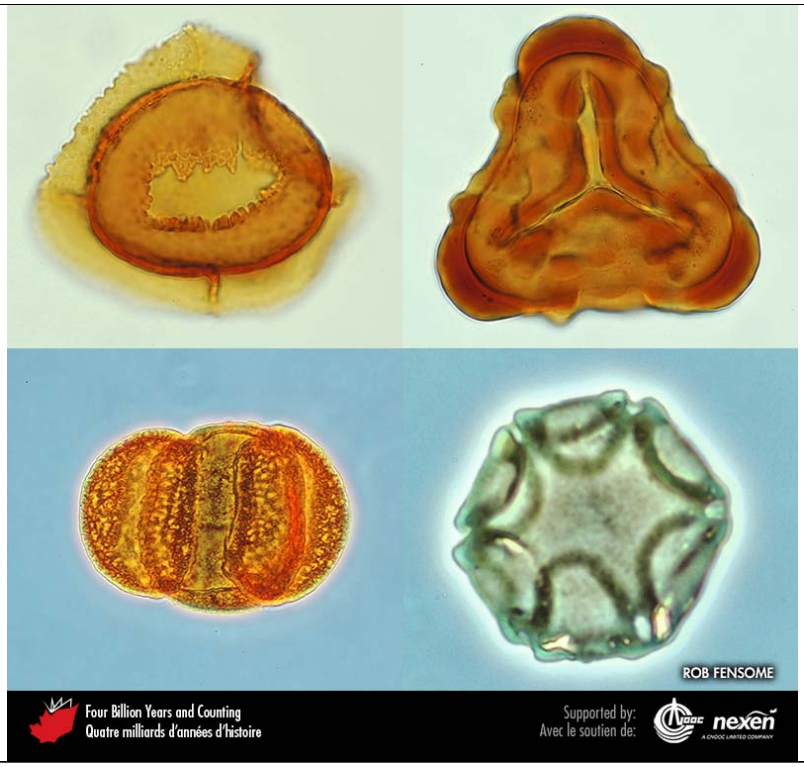
Flower calyx of *Florissantia quilchenensis* from Eocene lake deposits at Quilchena, British Columbia. ROLF MATHEWES.



Microscopic spores and pollen are far more common as fossils in many sedimentary rocks than larger plant fossils such as leaves and stems. Spores and pollen have played a significant role in dating rocks, unravelling past environments and revealing plant evolution. These artificially stained examples from Atlantic Canada are a Cretaceous liverwort spore (top left), a Cretaceous fern spore (top right), a Tertiary conifer pollen grain (bottom left), and a Tertiary angiosperm pollen grain (bottom right). ROB FENSOME.
