

FIRST SWAMP FORESTS

This mural is an artist's depiction of a great swamp forest during the **Carboniferous** time period (360 to 300 million years ago). The climate was mostly wet and tropical. Plant growth was lush. Decaying leaves and plants accumulated in large masses at the bottom of swamps. Eventually these piles were deeply buried, cooked by Earth's internal heat, and turned into coal. Most of today's coal resources were laid down during the Carboniferous.

Life had been on land for only about 100 million years. Early vascular plants had evolved fern-like, seed-bearing varieties; 35-m-tall green-stemmed giants; and 45-m-tall large-leaved mangrove-rooted trees. So vigorous was the growth of these ancient trees that they sucked much of the carbon dioxide out of the atmosphere. Oxygen levels were higher during this time than at any other time in Earth's history.

Inhabiting the forests were many types of centipedes, spiders, and insects. Encouraged by the oxygen-rich atmosphere, the abundance of food in the decaying forest leaf-litter, and the absence of large terrestrial vertebrates, many reached huge sizes. The dragonfly-like *Meganeura*, an aerial predator, had a wingspan of 60 to 75 cm. The armoured millipede-like *Arthropleura* was 1.8 m long; some scorpions reached 50 or 70 cm. Alongside these giants were more conventionally sized invertebrates. Also inhabiting rivers, ponds, and swamps were crocodile, eel, and salamander-like organisms.

Mural's original location: California Academy of Sciences — *Life Through Time Exhibit*
Artists: Maren Van Duyn, Caroly Van Duyn (painted in 1990)