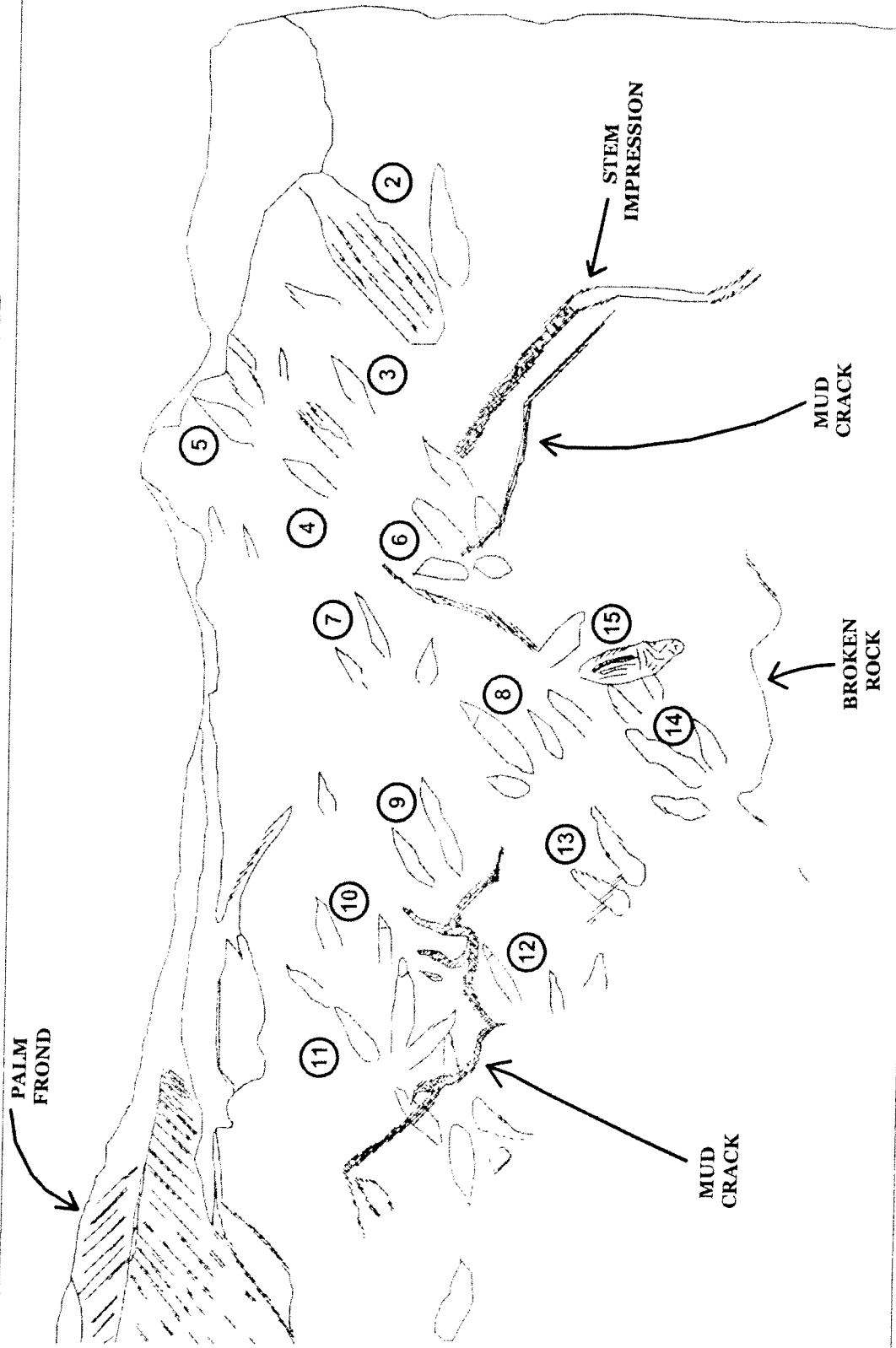


# DINOSAUR TRACKS IN ROCK SLAB



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The footprints on this slab were made by small bipedal (two-footed) dinosaurs about 67 million years ago. They were discovered on a large slab of rock in an inner-courtyard at the Sun Microsystems Campus in Broomfield's Interlocken business park. Once the significance of the slab was recognized, Sun Microsystems cut out the main track-bearing portion of the slab and donated it to the City of Broomfield for the Mamie Doud Eisenhower Public Library.

There are 23 tracks on this slab, but some show only one or two toes. The fifteen complete tracks are numbered on the accompanying drawing. There are at least three different track types on the slab. The rock also shows a number of large plant impressions, including some palm-type fronds and leaves of deciduous trees.

To determine which dinosaurs could have made the footprints, scientists looked at the structure of the dinosaur feet known from fossil skeletons. Many of these tracks appear to have been made by small theropod (mammal-footed) dinosaurs. These dinosaurs may have been ornithomimids (ostrich dinosaurs), which had a horny beak rather like birds. Tracks 2 and 15 are larger, but were also made by theropods.

Tracks 6 and 8 have a longer middle toe and are more symmetrical. They were probably made by small ornithopod (bird-footed) dinosaurs. These herbivores (plant-eaters) had small leaf-shaped teeth and a beak at the front of their mouths.

The slab is thought to be from the Laramie Formation rock layer. This formation consists of alternating layers of sand and mud deposited on a low-lying meandering river floodplain. The dinosaurs were probably walking beside a river, perhaps on its banks, when the water level was low. The tracks made in the mud were baked hard by the sun. When the river level rose again, a layer of sand covered and preserved the tracks. The tracks are raised from the rock surface; they were preserved as natural casts. The visible surface is not what the animals walked on, but the sand layer that filled the indentations made by the animal's feet.



## **What kinds of dinosaurs made these footprints?**

There are three different track types: The dinosaurs were probably small and large ornithomimids “ostrich dinosaurs” and ornithopod dinosaurs with birdlike feet.

## **How old is the dinosaur rock?**

It is about 67 million years old. The footprints were made during the Cretaceous period.

## **Why are the footprints raised off the rock? Shouldn't they be imprinted into the rock?**

Nature made a sand casting of the original footprints. The dinosaurs were probably walking beside a river when the water level was low. When the water level rose again, sand came in and filled the footprints. This sand became the sandstone you see before you.

## **Where and how was the dinosaur rock found?**

The dinosaur footprints were discovered by Suzy Langston and Jeanne Hoiem, employees at Sun Microsystems, Inc. in the spring of 1999. They noticed dinosaur tracks on a large slab of rock incorporated into the newly constructed inner courtyard landscaping at a building at Interlocken business park in Broomfield. Once Sun Microsystems recognized the importance of the rock, they cut out the slab and donated it to the Mamie Doud Eisenhower Public Library in Broomfield.

## **How many tracks are on the rock?**

There are 23 tracks on the slab, but some of them only show one or two toes. There are 15 complete tracks.

## **What else is on the rock?**

There are some palm fronds and leaves of deciduous trees.



# Dinosaur and turtle tracks from the Laramie/Arapahoe formations (Upper Cretaceous), near Denver, Colorado, USA

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A large slab showing more than two dozen dinosaur footprints discovered in the Upper Cretaceous (Maastrichtian) Laramie or Arapahoe Formation near Denver, Colorado, represents the first significant find of dinosaur tracks in the greater Denver metropolitan area in more than a decade. The tracks are all of tridactyl bipeds and appear to be mainly attributable to theropod dinosaurs, although some may be attributed to ornithomorphs. The track-bearing slab is undoubtedly the highest concentration and best preserved example of small dinosaur tracks ever discovered in the Laramie Formation, and adds significantly to our understanding of the range of size and shape of small bipedal tracks in the Denver area during the latest Cretaceous. At another site, small vertebrate tracks attributed to turtles were recently discovered. They consist of very short wide tracks with deep claw impressions.

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KEY WORDS: dinosaur; turtle; tracks; Laramie Formation; Arapahoe Formation; Cretaceous; Colorado.

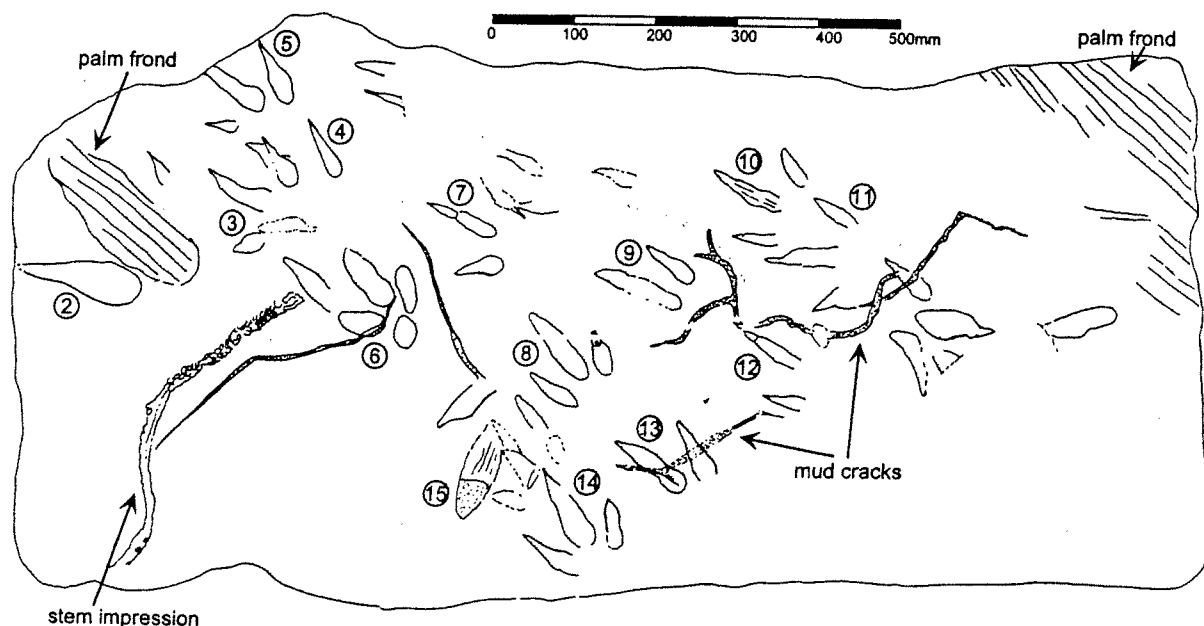


Figure 2. Main track-bearing surface (specimen CU-MWC-223.6) from the Laramie Formation, Sun Microsystems specimen, Laramie Formation, Broomfield, Colorado. Numbers correspond to those in Table 1.