

Chapter 26

Evolutionary Aside 26.1--Plants Alter Flow of Rivers

Geologists study fluvial patterns, which are the flow patterns of river and streams. Changes in flow patterns can be analyzed in rocks. After the Cambrian period, fluvial patterns became quite diversified. In addition to the wide sandy beds, meandering rivers, more channeled rivers, and rivers with vegetation covered islands appeared on the landscape over a 250 million year period.

Analysis of the fossil record indicates that this period corresponds with the spread of rooted, vascular plants. Not only did the roots anchor and stabilize the sides of river beds, fallen tree trunks blocked the flow of water and forcing new channels to form. The new landscape in turn affected evolution.

Modern day experiments have further confirmed these conclusions. In these experiments, long, wide, sandy channels were established in an experimental plot of land on a slight incline and then plants were added to mimic post-Cambrian lands. A steady source of water at the end with the slightly higher elevation created an artificial river. Water flow was tracked by adding dye to the water. Over time, single narrow channels formed and were clearly identified by the accumulation of dye.