Illinois State Geological Survey

Geobit 1

EXOTIC ROCKS or Erratics Are Erratic



A piece of Canada sitting in central Illinois (photo by D. Reinertsen).

Here and there in Illinois are boulders lying alone or with companions in the corner of a field or someone's yard, on a courthouse lawn or a schoolyard. Many of them—colorful and glittering granites, banded gneisses, and other intricately veined and streaked igneous and metamorphic rocks—seem out of place in the stoneless, grassy knolls and prairies of our state. Their "erratic" occurrence is the reason for their interesting name.

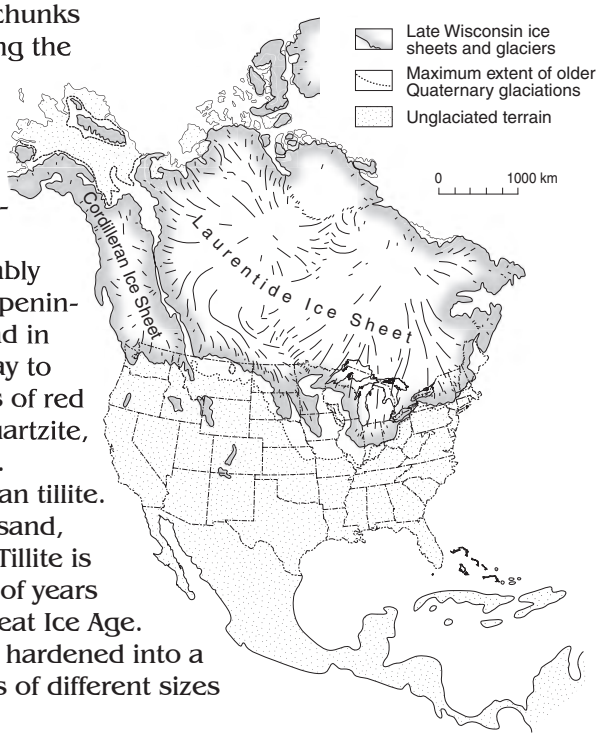
Where did erratics come from?

These exotic rocks came from Canada and the states north of us. The continental glaciers of the Great Ice Age scoured and scraped the land surface as they advanced, pushing up chunks of bedrock and grinding them against each other or along the ground surface as the rock-laden ice sheets pushed southward.

Sometimes you can tell where the erratic originally came from by determining the kind of rock it is. A large boulder of granite, gneiss, or other igneous or metamorphic rock may have come from Canada.

Some erratics containing flecks of copper were probably transported here from the "Copper Range" of the upper peninsula of Michigan. Large pieces of copper have been found in glacial deposits of central and northern Illinois. Light gray to white quartzite boulders with beautiful, rounded pebbles of red jasper came from Ontario, Canada. Purplish pieces of quartzite, some of them banded, probably originated in Wisconsin.

Most interesting are the few large boulders of Canadian tillite. Glacial till is an unsorted and unlayered mixture of clay, sand, gravel, and boulders that vary widely in size and shape. Tillite is glacial till that was deposited by a glacier many millions of years older than the ones that invaded our state during the Great Ice Age. This glacial till has been around so long that it has been hardened into a gray to greenish gray rock containing a mixture of grains of different sizes and scattered pebbles of various types and sizes.



Glaciers spread southward into the Midwest from two centers of ice accumulation in western and eastern Canada.

How did erratics get here?

Many boulders were probably dropped directly from the melting front of the glacier. Others may have been rafted to their present resting places by icebergs in ancient lakes or on floodwaters of some long-vanished stream as it poured from a glacier. Still others, buried in the glacial deposits, could have worked their way up to the land surface as the surrounding loose soil repeatedly froze and thawed. When the freezing ground expands, pieces of rock tend to be pushed upward, where they are more easily reached by the farmer's plow and also more likely to be exposed by erosion.

Keep an eye out for erratics. You may find some of these glacial strangers in your neighborhood.

Many erratics are of notable size and beauty. Some are used as monuments in courthouse squares and parks, or along highways. Many are marked with metal plaques to indicate an interesting historical spot or event.

Contributed by M.M. Killey



While on a drive through central Illinois, you may catch a glimpse of an erratic (photo by J. Dexter).

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