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Cross-references: *Denudation; Dome Mountains; Etcplain; Exhumed Landscape; Granite Landforms; Inselberg; Pediplain; Relict Landforms; Tor.*

BOTN—See BERGSCHRUND; CIRQUE

BOULDER—See PERCHED BLOCK, BOULDER

BRAIDED STREAMS

A stream or river bed is said to have a braided pattern when the deeper channels form a lacy or reticulate network of divergent and convergent members. This branching or weaving characteristic is properly called *anastomosis* (from the Greek), and the channels may be described as *anastomosing*. (These terms are used in the same sense in many fields: e.g., in botany—veins on a leaf; in anatomy—veins in the bloodstream, "veins" in an insect's wing; also in petrology—"anastomosing dikes and veins"; in volcanology—"anastomosing or braided lava flows"; in spelcology—"anastomosing caves.")

Most braided streams occur where there are almost no lateral confining banks, as on large alluvial piedmont fans or sandurs, but in certain regions they occur in confined valleys (often "underfit"; see *Streams—Underfit*).

Friedkin (1945) after completing experimental studies on stream patterns, wrote:

"Rivers are described as braided when the channel is extremely wide and shallow and the flow passes through

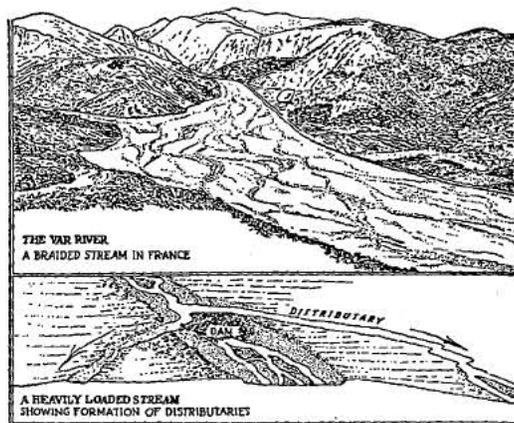


FIG. 1. Two aspects of braided streams: *above*, the loaded seasonal stream leaves the confining valleys of the mountains; *below*, the deposited load of flood time blocks the main channel with a dam of pebbles and boulders (Lobeck, 1939). (By permission of McGraw-Hill Book Co., N.Y.)

a number of small interlaced channels separated by bars. There is little or no erosion of the main banks. The channel as a whole does not meander, although local meandering in minor channels generally occurs . . . braiding results when the banks of a channel are extremely easily eroded."

Environment

Braided streams, active today, are found in three rather contrasting environments:

(a) Semiarid regions of relatively low relief, but with the streams usually receiving the runoff of mountain areas.

(b) A variant of this condition is the *sandur* or glacial outwash plain or valley, where the source is a melting ice front.

(c) Mature streams in mountain areas—arid, temperate or even periglacial. The stream gradient may be remarkably steep.

In each case, the precipitation (or thaw) will be marked by extreme seasonality, or in desert regions it may be quite sporadic, perhaps limited to 50-100 year intervals. As Krigstrom (1962) noted, whereas the semiarid braided valley occasionally becomes totally submerged, this condition does not seem to have been reached over the sandur plains (though possibly in the more confined sandur valleys), even during glacier dam bursts.

Load

The uniting feature of all active braided streams is that the discharge is extremely irregular; through most of the year or longer periods, the river bed is dry or the stream is very much reduced. When precipitation (or snow thaw) does occur in the head-water catchment area, it is usually heavy and relatively brief. It may be in the form of brief summer