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Rate of Advance of the Woodfordian (Late Wisconsinan) Glacial Margin in Illinois: Stratigraphic and Radiocarbon Evidence

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Thirty radiocarbon dates from 18 localities were used to document the rate of advance of the Woodfordian glacial margin in Illinois. These dates were obtained from the Robein Silt (formerly called Farmdale Silt) of the Farmdalian Substage, the top of the overlying Morton Loess (Woodfordian Substage), and the base of the Wedron Formation (Woodfordian Substage).

Robein Silt accumulation ended with the initial deposition of the overlying pro-glacial Morton Loess followed by deposition of the Wedron Formation. The base of the Wedron Formation is time-transgressive. In northeastern Illinois it has been dated at 23,000 radiocarbon yrs B.P. However, in south-central Illinois at the southern limit of the Woodfordian glacial advance, it has been dated at 20,000 yrs B.P., and at the western margin it has been dated at 19,000 yrs B.P. For distances up to 250 km in Illinois, therefore, the base of the unit transgresses 3,000 to 4,000 radiocarbon yrs.

The net rate of advance of the Woodfordian glacial margin can thus be calculated as being of the order of magnitude of 62 m per radiocarbon yr. Although this rate is approximate, it falls within the range of rates (25 m to 106 m per yr) reported from Ohio.