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USE OF PLANT MEGAFOSSILS IN CORRELATION OF THE PENNSYLVANIAN OF THE  
ILLINOIS BASIN WITH THE UPPER CARBONIFEROUS OF EUROPE

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Ten different stratigraphic units in Illinois have yielded plant fossils that could be used for the biostratigraphic division of the Pennsylvanian System of Illinois and for correlation with equivalent strata of Europe and elsewhere. Essentially the same plant species occur in the Pennsylvanian of the Illinois Basin and the Upper Carboniferous (Silesian) of Europe.

The oldest Pennsylvanian rocks of the Caseyville Formation in Illinois are probably equivalent to the upper part of the European Westphalian A. Some plant fossils of Westphalian B age are present in the Abbott Formation, and in the Rock Island (No. 1) Coal Member fossils of Westphalian C age are found. The well known Mazon Creek flora of the Carbondale Formation can be correlated with the Westphalian D, even though it contains the species Pecopteris lamuriana and P. unita that have been considered typically Stephanian in age by some authors. The floras in the roof shales of the Herrin (No. 6) Coal Member and the Danville (No. 7) Coal Member, which are reported for the first time, are similar to the Mazon Creek flora.

Plant megafossils are rare in the overlying McLeansboro Group and do not yet permit correlation with European strata. The coal ball flora in the Calhoun Coal Member (Mattoon Formation), however, is markedly different from the coal ball flora of the No. 6 Coal and clearly indicates Stephanian age by the presence of Sigillaria and the absence of the genus Lepidodendron.