

Middle Ordovician Platteville Formation, Hoadley Hill, Wisconsin

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LOCATION

Exposure in roadcut at north side of U.S. 151 about 6.5 mi (10.8 km) southwest of Platteville in the W $\frac{1}{2}$,NE $\frac{1}{4}$,Sec.12, and the W $\frac{1}{2}$,SE $\frac{1}{4}$,Sec.1,T.2N.,R.2W., Grant County, Wisconsin on the Dickeyville 7 $\frac{1}{2}$ -minute Quadrangle (Fig. 1).

SIGNIFICANCE

This is the reference section for the Platteville Formation in the southwest Wisconsin zinc-lead district (Agnew and others, 1956; Ostrom, 1978). The strata exposed here are the upper part of the St. Peter Sandstone, the Glenwood Formation, a complete section of the Platteville Formation, and the lower part of the Decorah Formation (Fig. 2).

The Hoadley Hill exposure shows the interrelationship and lithologic characteristics of the St. Peter, Glenwood, and Platteville Formations in the classic southwest Wisconsin zinc-lead district. The St. Peter Sandstone was named by Owen (1847, p. 170) for exposures in bluffs of the St. Peter River valley (now Minnesota River), near St. Paul, Minnesota. It consists of clear, fine to coarse rounded to subangular quartz grains and is generally poorly cemented. It is white to very light gray and very light buff, thin to thick bedded, locally massive and cross-bedded, and is variable in thickness in the district ranging from 0 to more than 350 ft (0 to 100 m) thick and averaging about 50 ft (15 m) thick. Thickness variations are attributed to deposition of the sand on a deeply dissected erosion surface.

The Glenwood Formation conformably overlies the St. Peter Formation. It was named by Calvin (1906, p. 75) from exposures in Glenwood Township (T.98N.,R.7W.) a short distance northwest of Waukon, Iowa. The classification used here is that of the Illinois Geological Survey (Templeton and Willman, 1963) as modified by Ostrom (1969). Three members are recognized in the Glenwood Formation in southwest Wisconsin. In ascending order these are the Nokomis, Harmony Hill, and Hennepin. The Nokomis Member consists principally of sandstone and is transitional with the underlying St. Peter Sandstone. It is distinguished from the St. Peter Sandstone by light yellowish and greenish coloration and by a notable change in bedding character from cross-bedded, even-bedded and even-textured sandstone to reworked, burrowed, and poorly sorted sandstone with more or less green clay. It is both silty and argillaceous. In the district the Nokomis ranges from 8 ft thick (2.5 m) near Beetown, about 25 mi (40 km) west-northwest of Hoadley Hill, to less than 1 ft (0.3 m) thick in the vicinity of New Glarus, located about 55 mi (88 km) to the east. The Nokomis Member is conformable with the overlying Harmony Hill Member.

The Harmony Hill Member is a pale green to greenish gray shale with scattered rounded clear quartz sand grains. It is up to

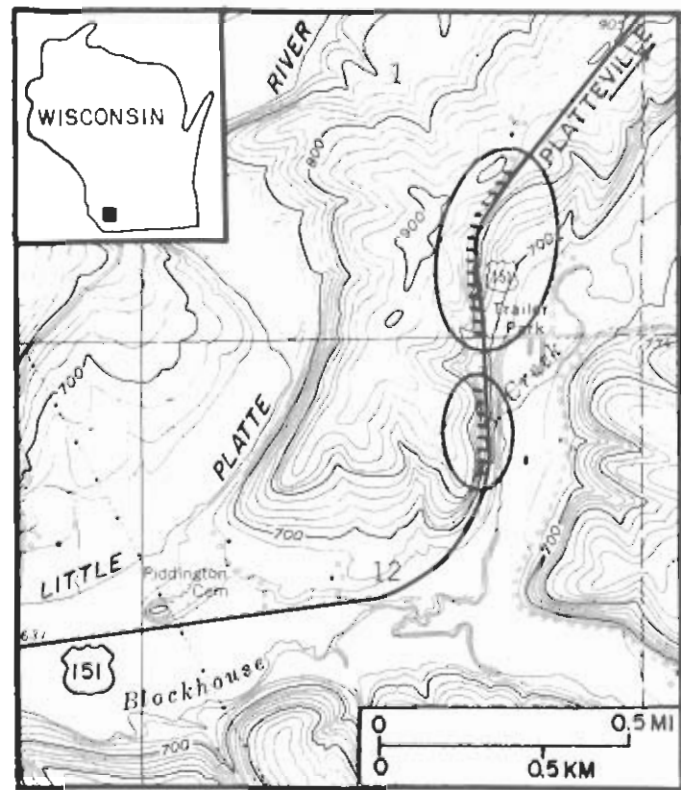


Figure 1. Location of exposure of Middle Ordovician Platteville Formation in roadcut at Hoadley Hill, Wisconsin.

3.5 ft (1 m) thick in the western part of the district and is absent in the east. The Harmony Hill Member is conformable with the overlying Hennepin Member, which consists of brownish and locally calcareous shale with scattered phosphatic nodules and clear rounded quartz sand grains. It is 5 ft (1.5 m) thick in the western part of the district and thins to disappearance in the east.

The Platteville Formation overlies and is conformable with the Glenwood Formation. It is one of the mineralized formations in the southwest Wisconsin zinc-lead mining district and was named by Bain (1905, p. 19) for exposures in the vicinity of Platteville, Wisconsin. It is known throughout the district, and within the Driftless Area, from exposures at the surface and in mines and from drill cuttings. In the district the Platteville Formation ranges in thickness from about 55 ft (17 m) in the west to near 75 ft (23 m) in the east, near Shullsburg.

The Platteville Formation consists of three members, which in ascending order are the Pecatonica, McGregor, and Quimbys Mill. The Pecatonica Dolomite Member was named by Hershey

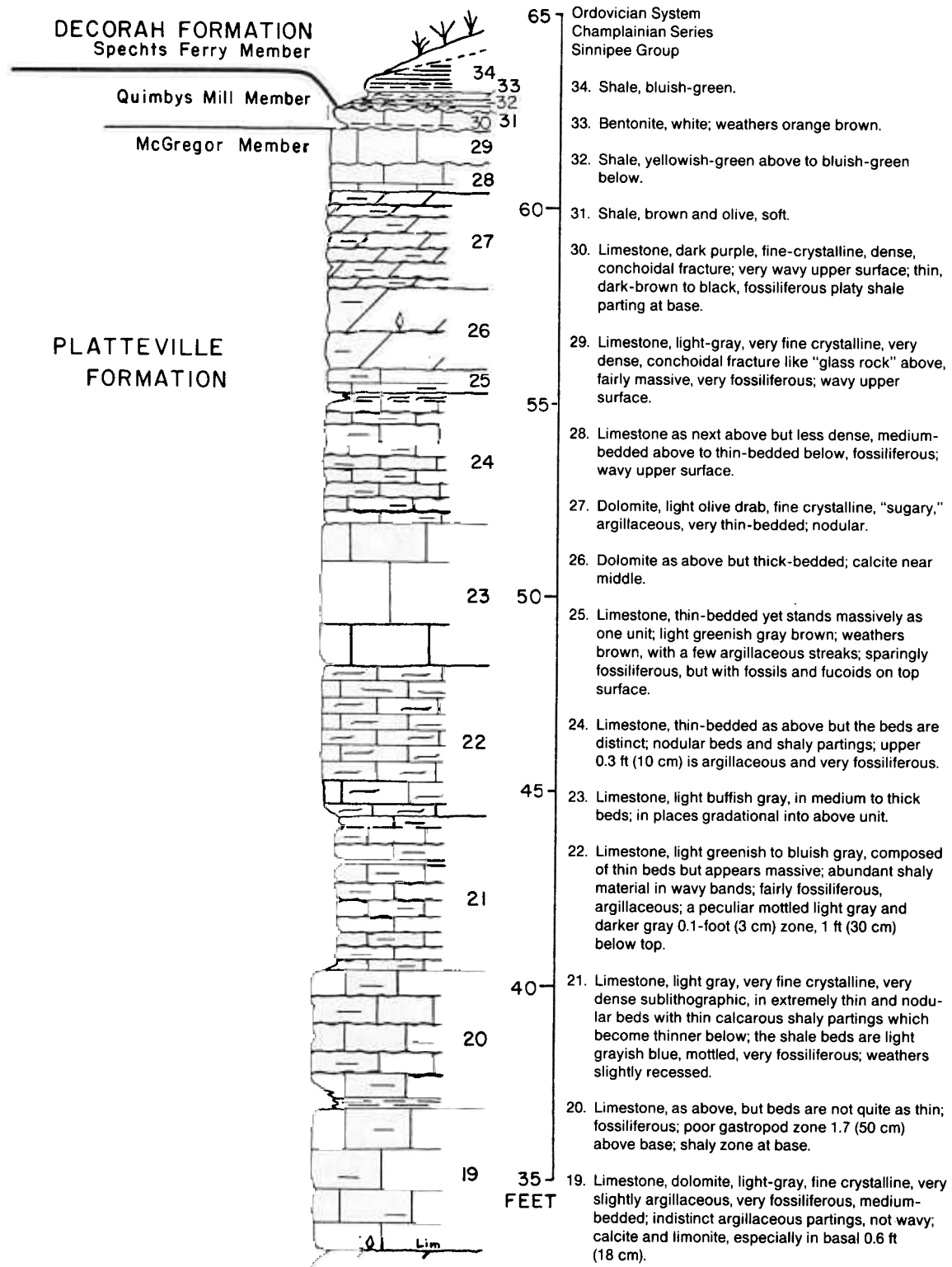
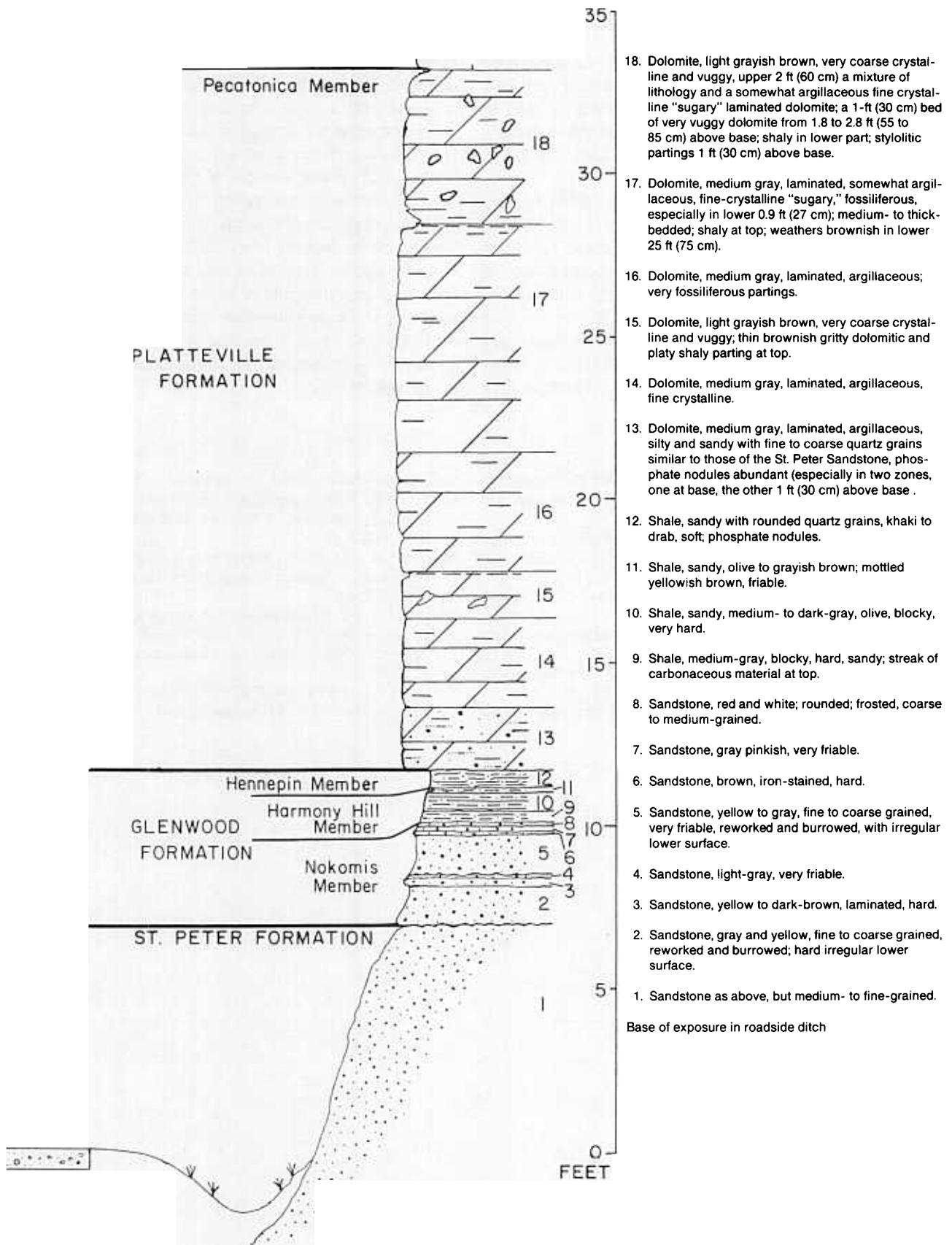


Figure 2 (this and facing page). Section exposed in roadcut at Hoadley Hill, Wisconsin.



(1894, p. 175) from exposures in the Pecatonica River valley in southwestern Wisconsin near the Illinois border. It consists predominantly of medium-grained, granular, thick- to thin-bedded dolomite. The lowermost bed, the Chana Member (Templeton and Willman, 1963) contains phosphatic pellets as well as rounded quartz sand grains similar to those in the underlying Glenwood Formation. The Pecatonica is from 20 to 25 ft (6 to 8 m) thick in the district.

The McGregor Limestone Member was named by Kay (1935, p. 286) from an exposure in a ravine 1 mi (1.6 km) west of McGregor, Iowa. The McGregor Member consists of uneven bedded, thin- to medium-bedded, light gray to buff argillaceous dolomite and limestone and is from 25 to 30 ft (8 to 9 m) thick. The McGregor Member contains commercial deposits of zinc-lead ore. The Quimbys Mill Member was named by Agnew and Heyl (1946, p. 1585) from an exposure in a quarry at Quimbys Mill located 5 mi (8 km) west of Shullsburg, Wisconsin. The

member ranges from less than 1 ft (0.3 m) in thickness to more than 18 ft (5.5 m). It consists of light brown, thin- to medium-bedded, crystalline sublithographic limestone and finely granular dolomite. This member is locally called the "glass rock" because it breaks with a conchoidal fracture. The Quimbys Mill also contains commercial deposits of zinc-lead ore.

The Platteville Formation is overlain disconformably by the Spechts Ferry Shale Member of the Decorah Formation. The Decorah Formation was named by Calvin (1906, p. 61) from exposures in the city of Decorah, Iowa. The Decorah Formation consists of the Spechts Ferry, Guttenberg, and Ion members. Only the Spechts Ferry is exposed at this outcrop. The Spechts Ferry consists principally of bluish green to brown shale with nodules and discontinuous thin beds of limestone. A thin meta-bentonite bed, which is believed to be an alteration product of volcanic dust, occurs near its base and can be correlated on a broad regional scale.

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