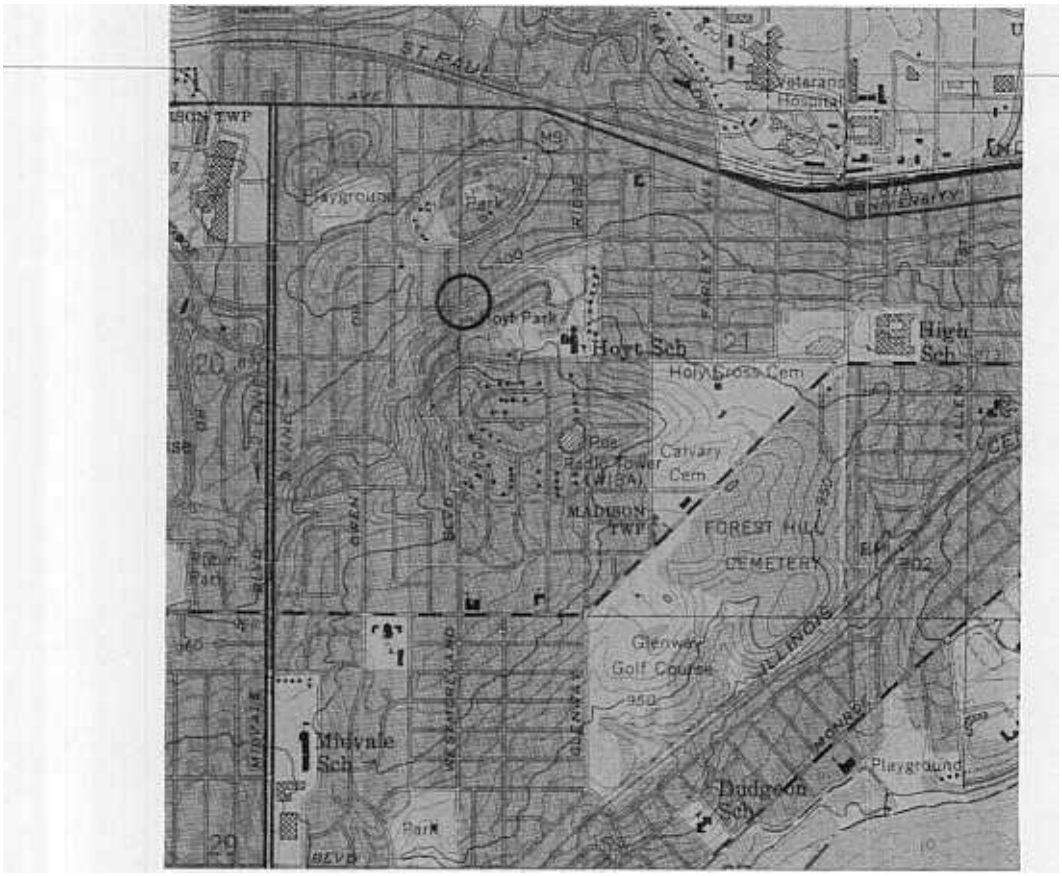
OUTCROP 1

Title: Madison-Hoyt Park

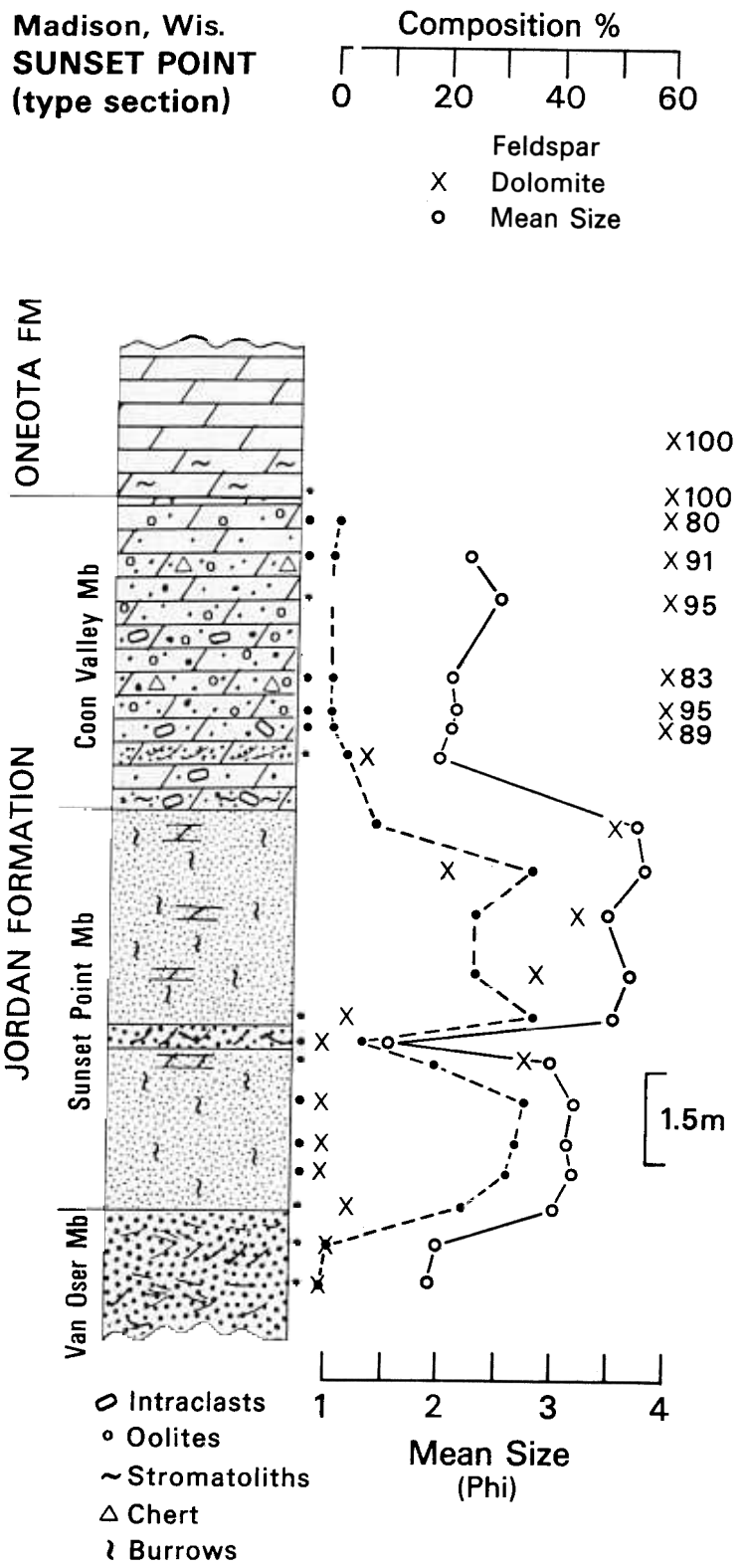
Location: Near Intersection of Bluff Street and Du Rose Terrace, Madison, Wisconsin in the SE¼,SE¼, NE¼, Sec. 20, T.7N., R.9E., Dane County (Madison West 7.5 minute topographic quadrangle, 1974).

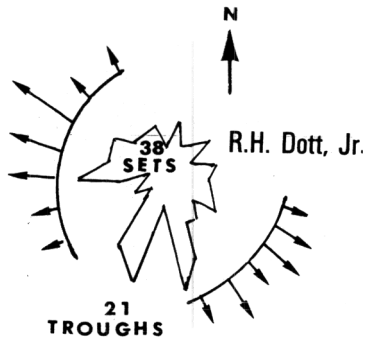


Author: I. E. Odom

Description: The section above is a composite of exposures along Bluff Street and in an abandoned quarry just (above) south of the Bluff Street outcrop in Hoyt Park (do not tresspass on private property and please do not mutilate the outcrops). This is the type section of the Sunset Point Sandstone Member of the Jordan Formation as currently defined (formerly the Madison Sandstone). The upper part of the Sunset Point was first described by Irvin in 1875, however, the lower 3 meters and the underlying Van Oser Sandstone apparently were not exposed prior to about 1960.

The petrologic and textural data for the Sunset Point Member show that it is a highly feldspathic, very fine-grained sandstone. The upper part is thinly bedded and dolomitic and was previously quarried for building stone (used in several building on the UWM Campus). The lithology of the lower unit of the


Madison, Wis.
SUNSET POINT
(type section)
Composition %
0
20
40
60
Feldspar
X Dolomite
o Mean Size
ONEOTA FM
JORDAN FORMATION
Coon Valley Mb
Sunset Point Mb
Van Oser Mb
X100
X100
X80
X91
X95
X83
X95
X89
1.5m
Intraclasts
Oolites
~ Stromatoliths
△ Chert
Burrows
1
2
3
4
Mean Size
(Phi)



(Above) Current directional data, Sunset Point Member.

(Right) Authigenic and detrital feldspar (F) in lower unit of Sunset Point Sandstone.

Sunset Point differs from the upper unit only in that it is less dolomitic, more massive, and contains scattered medium size grains. The thin bed of cross-stratified, medium-grained, quartzose sandstone that separates the upper and lower units of the Sunset Point Sandstone varies in thickness over the full outcrop from a few centimeters up to .3 meters. Ostrom (1964) reported a thin quartz granule "conglomerate" in the base of the upper Sunset Point unit. The contact of the Sunset Point Sandstone with the overlying Coon Valley Member was thought by Ulrich (1924) to be a major uncomformity separating the Cambrian from his Ozarkian System.

Note the pinkish color of several of the massive beds of the Sunset Point Sandstone. This color is a reflection of their high K-feldspar content. Both units of the Sunset Point Sandstone are bioturbated and contain burrows and other trace fossils. The walls of buildings on the UWM Campus constructed of this stone are an excellent place to study the trace fossils. Fossils collected from the Sunset Point Member by G. O. Raasch are identified as Cambrian in age and include Tellurina and Saukia. Skolithos burrows are common in the lower unit, whereas a Cruizana assemblage dominates the upper unit.

At the base of the Sunset Point Sandstone is a fine- to medium-grained, quartzose sandstone assigned to the Van Oser Member. A much greater thickness of the Van Oser was at one time exposed at the intersection of Bluff Street and Du Rose Terrace.

The upper beds of the Sunset Point Sandstone and the Coon Valley Member are exposed in the abandoned quarry. The Coon Valley Member consists of 5 meters of dolomitic, conglomeratic sandstones and sandy, oolitic dolostones (see paper by Adams, this guidebook), the base of which contains a prominent bed of very sandy, conglomeratic, algal dolostone. The Coon Valley Member is in turn overlain by nonsandy algal and oolitic dolostones, the lower portion of which locally weathers with a honeycomb appearance, that are

assigned to the Oneota Formation. Many more meters of the Oneota are exposed elsewhere in Hoyt Park.

To fully comprehend the stratigraphic sequences in subsequent outcrops to be examined, it is necessary to thoroughly study the lithic characteristics of the Sunset Point and Coon Valley Members of the Jordan and the basal beds of the Oneota Formation at these outcrops. The lithic nature of the Van Oser Sandstone can better be observed at Outcrop 2. Also, more accessible exposures of the Oneota are present at Outcrops 5 and 6.

Interpretations: The Sunset Point Sandstone is believed to be a local lithic unit that is time-stratigraphically equivalent to part of the Van Oser Member rather than being younger than the Van Oser as was previously thought (Odom and Ostrom, this guidebook). The Sunset Point can be traced northward in a narrow belt to near Dane, Wisconsin, a distance of about 15 miles. It can be shown to grade laterally toward the west into fine- to medium-grained, quartzose sandstones of the Van Oser Member, and it also disappears laterally in all other directions. Also, at Outcrop 4 the Sunset Point Member is overlain by the Van Oser Member.

Based on its lithic properties, sedimentary structures, and stratigraphic and geographic patterns of occurrence, the Sunset Point Sandstone is interpreted to represent a lagoonal environment. It is envisioned that this local lagoon was situated between the Cross Plains and East Madison Bar complexes and leeward of the Baraboo Islands (Fig. 22). The medium-grained sandstone that separates the upper and lower units of the Sunset Point Member is believed to be a washover fan from a nearby Van Oser bar caused by one or more storms. A part of the East Madison Bar complex was located as close as 5 km to the southeast. Note the bimodal distribution of current direction indicators.

Although the Sunset Point Sandstone is overlain here and at the Shorewood Quarry, one mile north, by the Coon Valley Member, at Outcrop 4 it is overlain by the Van Oser Member. These stratigraphic relations and the fact that the Sunset Point disappears laterally in all directions are the primary evidences for the interpretation that the Sunset Point is a local facies and time-stratigraphically equivalent to the Van Oser Member.

The lithic characteristics of the lower portion of the Coon Valley Member suggest deposition primarily in littoral and shallow carbonate shelf (subtidal) environments with strong wave and current activities. Adams (this guidebook) concludes that the upper part of the Coon Valley Member was deposited in an intertidal environment that slowly changed to a supratidal, hypersaline environment (Oneota Formation). It is possible that the upper Coon Valley represents coalescing sandy oolite shoals resulting from the interplay between storm-generated and tidal currents around small algal mounds, however, I am suspect that some (perhaps most) of the oolites may be vadose in origin.