

All are invited to attend the monthly meeting of the

## **Nittany Mineralogical Society**

**Wednesday, September 21, 2011 - Program at 8:00 p.m.**

114 Earth & Engineering Sciences Building

### **The Rupp Quarry - A geologic detective story in State College, PA**

by Dr. Charles E. Miller, Jr.  
Geologist

*Our September meeting will be held Wednesday the 21st in the room 114 auditorium of Earth & Engineering Sciences Building on the west side of the Penn State campus in State College, PA. Maps may be found on our web site.*

*(Junior Rockhounds: 5:00 p.m. in room 118)*

*6:30 to 7:30 p.m.: Social hour, refreshments in the lobby*

*7:30 to 8:00 p.m.: announcements, questions, answers;  
door prize drawings*

*about 8:00 p.m.: featured program*

*The event has free admission, free parking, and free refreshments, and is open to all –  
Bring your friends and share an enjoyable evening. -Editor*

For years, shoppers have gone to the Hamilton Avenue shopping center in State College without realizing there was an abandoned limestone quarry behind the stores. Even longer, for decades, geology students at The Pennsylvania State University and, more recently, Juniata College have used the abandoned Rupp Quarry as a field stop. Its proximity to the University and interesting geologic features has made it an inviting site to visit.

The site is a good example of secondary use of an abandoned quarry. Mining at the quarry apparently stopped some time in the 1930s. For several decades, it remained an unreclaimed/abandoned quarry. Eventually, the Hamilton Avenue strip mall was constructed near the quarry entrance. Later, a miniature golf course was built on the quarry floor. Today, Walk's Towing has its impoundment area for towed vehicles at the site of the erstwhile miniature golf course.

The Rupp Quarry exposes the Half-Moon Member of the Lower Ordovician Axemann Limestone of the Beekmantown Group. This formation is part of the Cambro-Ordovician carbonate sequence in central Pennsylvania that persisted for 120-140 million years. No other carbonate sequence in North America compares in duration. Sedimentologic and paleontologic observations at the Rupp Quarry provide clues to the depositional environment that deposited the carbonates. These clues include the tallest "cabbage-head" stromatolites in central Pennsylvania, abundant mudcracks, horizontal finely-laminated algal stromatolites, intraformational conglomerates, oolites, dolomite, other fossils, and a variety of limestone types. Like a murder mystery, each of these clues will be discussed individually. Collectively, the clues will lead us to interpret the paleodepositional environment of the Rupp Quarry.



"Cabbage-head" stromatolites approximately three feet in height. These are interpreted as being intertidal (between high and low tide). As such these are shore-line indicators. Attempts have been made to use intertidal stromatolites to ascertain ancient tidal ranges, as paleontologic clocks, and as support that the Moon recedes from the Earth. Each of these will be discussed in the presentation. *C. Miller photo.*

**See our web site: [www.nittanymineral.org](http://www.nittanymineral.org)**