Floyd County Fossil and Prairie Park
Geological Society of Minnesota – Field trip Saturday Sept 7, 2024 11a – 4p
In case of bad weather Sat. Sept 14th is the alternative date
Leaders: Stephen Willging and Roger Benepe

The Floyd County Fossil and Prairie Park (www.fossilcenter.wordpress.com) is located about 1 mile west of Rockford, Iowa on county highway B47. GPS coordinates N 43.0481, W 092.976. The park is located at the site of the old Rockford Brick and Tile Company clay quarry which was purchased by the Floyd County Conservation board in 1990 and opened as a park in 1991 to the public. The Rockford Brick and Tile Company manufactured bricks and drain tiles for 80 years at this site. The bedrock clay deposit in this area was near the surface and was recovered by open pit mining.

In addition to fossil collecting, the park has numerous walking trails through restored prairie and wetlands. A couple of the kilns remain on site. The park has a visitor center with fossil and wildlife/prairie displays, picnic shelter and restrooms (modern and rustic). The fossil collecting areas range from very steep slopes (in situ stratigraphic column) to gently rolling terrain (top of the stratigraphic column and overburden dump piles).

The Park's tips for an enjoyable visit (www.fossilcenter.wordpress.com) are:

1. Check the weather conditions prior to your visit. Heavy rainfall amounts may make the quarry area slippery and sticky due to the clay soils.
2. Bring something to put your fossils in. Suggestions include: egg cartons, plastic milk jugs or ice cream buckets. Plastic bags tend to rip and may blow away. Tools are not needed as fossils are lying on the ground.
3. The park is open from Sunrise to Sunset. The Center is open weekends in September and October from 1 pm – 4 pm. From Memorial Day to Labor Day the Center is open daily from 1 pm – 4pm.
4. Although collecting is allowed, we ask that you take only for a personal collection. **Reselling is prohibited.**

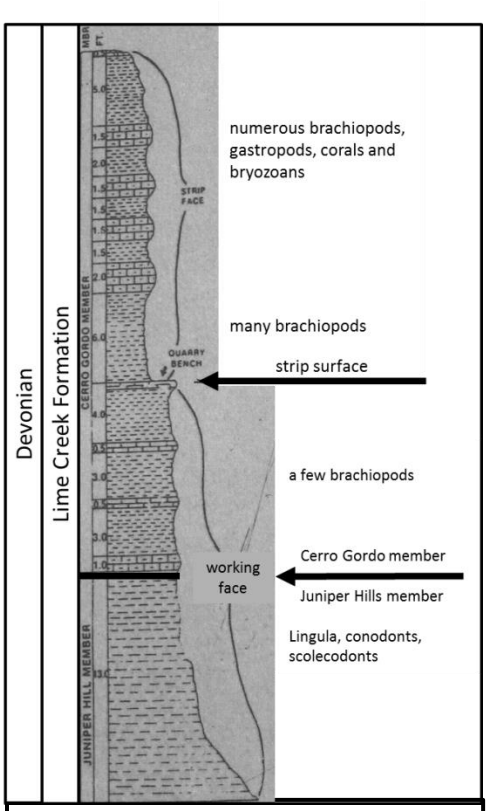
Directions to Floyd County Fossil and Prairie Park from the Twin Cities; via I-35 (approximately 160 miles, 2.5-hour drive time)

1. From the Twin Cities take I-35 south into Iowa
2. Take exit 190 for US 18 east toward IA-27 E/Mason City/Charles City
3. Continue east on IA-27/US-18 east 15.8 miles to exit 195 toward County Hwy S70/Zinnia Ave
4. Turn right onto County Hwy S70 and continue south 4.9 miles to County Hwy B47 (215th St.)
5. Turn left onto County Hwy B47 (215th St.) and continue east 2.4 miles to Fossil & Prairie Center on left.
6. Park in gravel lot by the clay quarry.

Geology of the Floyd County Fossil and Prairie Park

The bedrock exposure in the park is part of the Lime Creek formation of the late (upper) Devonian Epoch, 381 – 373 million years ago (Wicander and Playford, 1985). The Lime Creek formation is divided into 3 members (Juniper Hill, Cerro Gordo and Owens members). About 13 feet of the Juniper Hills member and about 35 feet of the lower to middle Cerro Gordo member are exposed in the park. The Juniper Hill member and the lower third of the Cerro Gordo member was mined by the Rockford Brick and Tile Company. The Cerro Gordo member is the upper most layer at the quarry. It is made up of three intervals of shale with different colors, quantities of limestone beds and fossil content. The lower 25 ft of the Cerro Gordo is made up of shales with interbedded argillaceous (clay containing) limestones units. The top 10 ft layer of the Cerro Gordo in the park is a pale yellowish calcareous shale

or marl which is “extremely fossiliferous”. The upper most two thirds of the Cerro Gordo member was removed as overburdened and sits in dump piles in the park.



Stratigraphic Column of Fossil and Prairie Park – Floyd County, Iowa

The Cerro Gordo member is one of Iowa’s most fossiliferous deposits. It is notable for the preservation and diversity of its fossil fauna. Nearly 200 species of macro and micro fossils have been collected and described from this formation (Anderson 1998, Bunker 1995 and Groves, 2008). Invertebrate macrofossils are abundant. There are numerous well-preserved shelly invertebrates such as brachiopods (most common), gastropods and bivalues. Colonial and solitary corals, bryozoans and fragments of crinoids can be found. Less common are nautiliod and ammonoid cephalopods. Many of the macrofossils show evidence of epibionts, animals such as worms, bryozoans, corals and sponges anchored and growing on brachiopods, corals and gastropods. (Briggs, ed, 1987).

The Juniper Hill member is a medium gray calcareous shale and mudstone containing less abundant and diverse fossil fauna. Fossils in the Juniper Hill member primarily consists of brachiopods, pyritized plant remains. Devonian shark or ray teeth have been reported.

To the northeast of the park the bedrock is the older Shell Rock Formation which is composed of mostly carbonate rocks. There is a good exposure of the Shell Rock formation by the dam on the Shell Rock River at the Nora Springs city park. Several corals and stromatoporoids (sponges) can be seen in this exposure. No collecting in this park.

References:

Anderson, Wayne I. *Iowa’s Geological Past: Three Billion Years of Earth History.* University of Iowa Press, Iowa City, 1998.

Briggs, Donald L., *North-Central Section of the Geological Society of America*, Boulder CO: Geological Society of America 1987. Accessed online through Google Books

Bunker, B. J. *Geology and Hydrogeology of Floyd-Mitchell Counties, North-Central Iowa*, Geological Society of Iowa, Iowa City, 1985. Online access <http://s-iihr34.iihr.uiowa.edu/publications/uploads/GSI-62.pdf>

Groves, John R. et als, *Carbonate Platform Facies and Faunas of the Middle and Upper Devonian Cedar Valley group and Lime Creek Formation*, Northern Iowa, Iowa Dept. of Natural Resources, 2008. Online access <http://s-iihr34.iihr.uiowa.edu/publications/uploads/GB-48.pdf>

Rose, J. N., *Fossils & Rocks of Eastern Iowa, a half billion years of Iowa history*, Educational Series 1, Iowa Geological Survey, Iowa City, Iowa, 1967.

Wicander, R. and G. Playford, “Acritarches and Spores from the Upper Devonian Lime Creek formation, Iowa, USA,” *Micropaleontology* 31.2 (1985), 97.

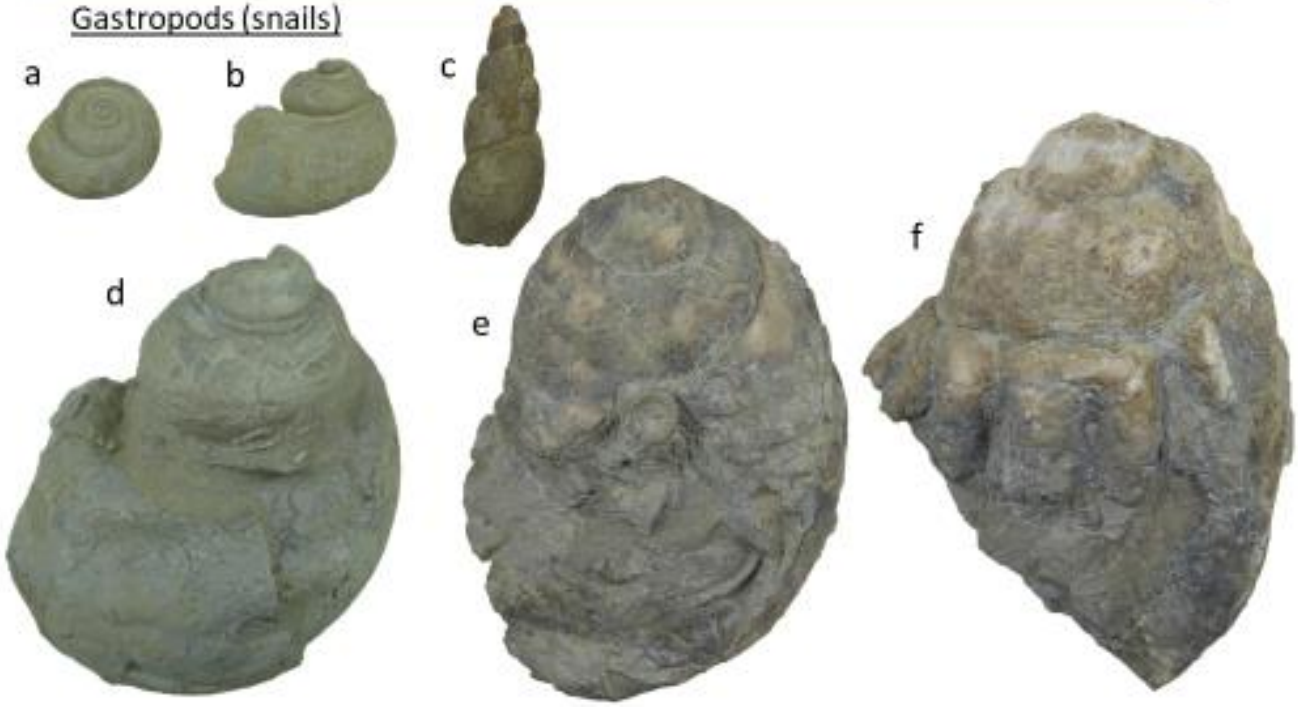
Fenton, C.L and Fenton M. A, “The Stratigraphy and Fauna of the Hackberry Stage of the Upper Devonian”, Vol. 1, University of Michigan Press (1924).

Fossil and Prairie Park – Floyd County, Iowa – Common Fossils

1 inch

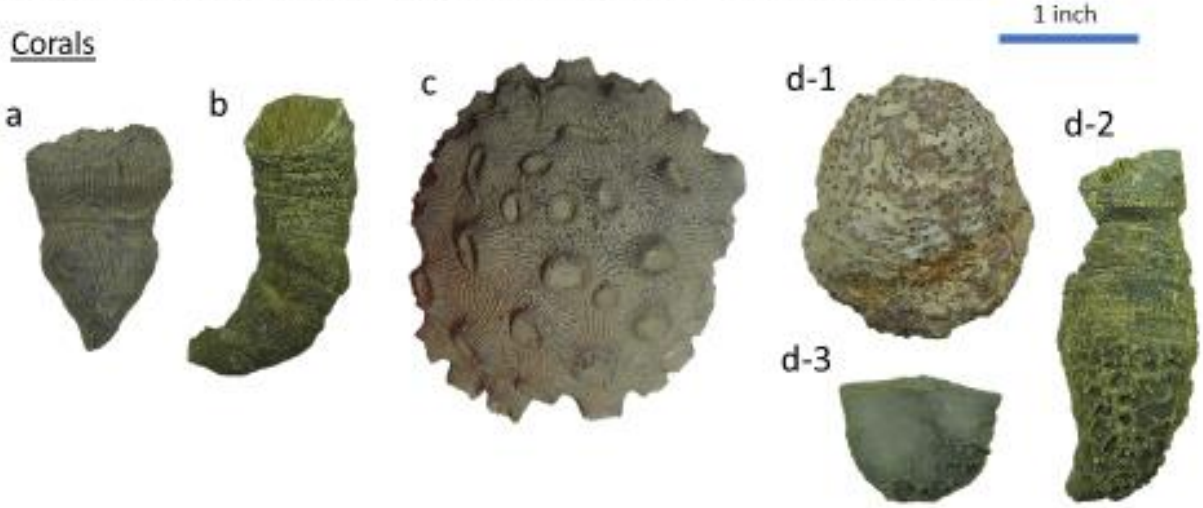
Brachiopods (lamp shells)

Gastropods (snails)



Fossil and Prairie Park – Floyd County, Iowa – Common Fossils

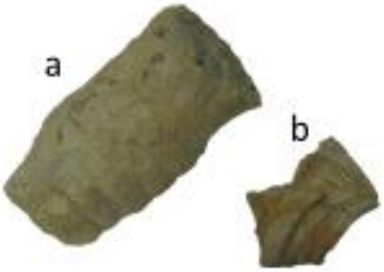
Corals



Pelecypods (clams & mussels)

Bryozoan

Cephalopods



Criniods (sea lilies)

Fossils Picture Legend

Brachiopods (lamp shells)

a.) *Schizophoria iowensis*. b.) *Theodossia hungerfordi* c.) *Atrypa devoniana* (*Pseudoatrypa*), d.) *Cyrtospirifier whitneyi*, e.) *Atrypa rockfordensis* (Spinatrypa), f.) *Douvillina maxima*, g.*) Douvilliana delicata*, h.) *Strophonella reversa*, i.) *Tenticospirfer cyriniformis*, j.) *Spirifer* sp., k.) *Cranaena iowensis*

Gastropods (snails)

a.) *Straparollus* sp., b.) *Holopea* sp., c.) *Westernia pulchra*, d.) *Floydia concentrica* (internal cast), e.) *Floydia concentrica*, f.) *Floydia gigantea*

Corals

a.) *Heliophyllum solidum*, b.) *Heliophyllum halli*, c.) *Pachyphyllum woodmani*, d-1.) *Aulopora* sp. on gastropod

d-2.) *Aulopora* sp. on brachiopod, d-3.) *Aulopora* sp. on *Heliophyllum* coral

Pelecypods (clams and mussels)

a.) *Paracyclas parvula*, b.) *Paracyclas sabini*, c.) *Paracyclas validalinea*

Bryozoan – *Lioclema* sp.

Cephalopods

a.) *Gomphoceras* sp., b.) cephalopod - unidentified

Criniods (sea lilies)

a.& b.) Criniod stem segments, c.) Criniod calyx – *Apodactylocrinus keithi*