

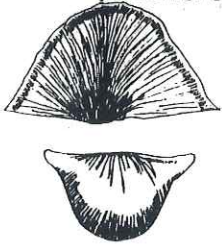
FOSSILS OF THE WHITEWATER STATE PARK AREA

Many animals and plants lived in the ancient seas that covered the Whitewater State Park area. Visitors to the fossil grounds often find many of those listed below.

When collecting fossils please practice conservation. Take only a few and leave many for future fossil hunters.

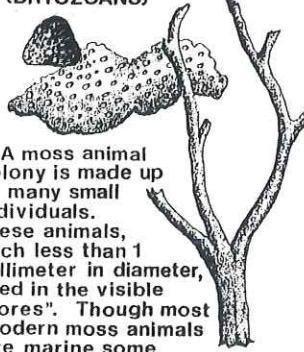
This sheet can be used to make a fossil display. Glue the sheet onto a piece of cardboard. Next, glue the fossils you have found in the appropriate box. Have fun!

LAMP SHELLS (BRACHIOPODS)



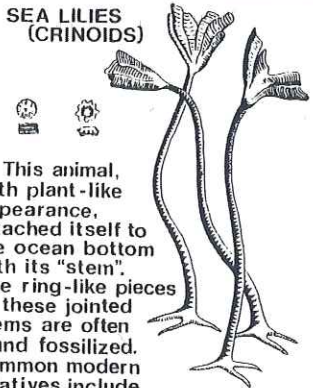
These common fossils are often confused with clams. Though both animals are bivalves, their symmetry differs. 30,000 fossil lamp shells are known while only 200 modern day forms survive. This may indicate that lamp shells may become extinct in the near geologic future.

MOSS ANIMALS (BRYOZOANS)



A moss animal colony is made up of many small individuals. These animals, each less than 1 millimeter in diameter, lived in the visible "pores". Though most modern moss animals are marine some freshwater forms are found in Minnesota.

SEA LILIES (CRINOID)



This animal, with plant-like appearance, attached itself to the ocean bottom with its "stem". The ring-like pieces of these jointed stems are often found fossilized. Common modern relatives include starfish and sea urchins.

RECEPTACULITES



This kelp-like green algae is one of the largest fossils found in southeastern Minnesota. Until quite recently, when exceptionally good fossils were found, this plant was mistakenly thought to be a sponge. Because of its pattern, it has also been called the sunflower coral.

SNAILS (GASTROPODS)



Though early snails were ocean-dwellers, today they are also found in lakes and streams as well as on land. About 50,000 species are known, 15,000 as fossils. This seems to indicate that snails have yet to reach their peak numbers.

HORN CORALS



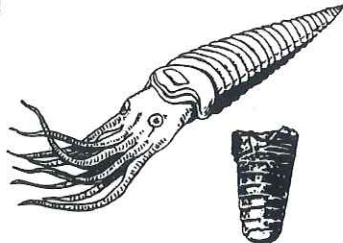
Horn corals have been called flower animals because their tentacles look like flower petals. Unlike today's colonial corals horn corals were solitary animals.

CLAMS (PELECYPODS)



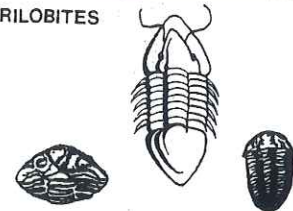
Pelecypod means "hatchet-foot". This name refers to the shape of the muscular foot by which the animals move. The number and variety of clams have grown steadily since their first appearance 600 million years ago.

CEPHALOPODS



These predators were, at their time, the largest animals on earth reaching 14 feet in length. Modern relatives are the chambered nautilus, octopus, and squid.

TRILOBITES



Trilobites are extinct animals that lived as scavengers in ancient seas. Modern day relatives include horseshoe crabs, crayfish, spiders, and cockroaches. Trilobites may have had the first light sensitive organs; eyes. Their eyes were compound possessing thousands of individual lenses.

Geologic Column For Southeastern Minnesota

Present
60 million years ago
180 million years ago

Field Trip Site

Exposed in Whitewater State Park

600 million years ago

Era	Period	Formation	Approx. Thickness (ft)	ROCK TYPE
CENOZOIC	Quaternary	Glacial deposits	0 - 500	TAN SAND AND GRAVEL CLAY
	Cretaceous	Coteauine and Windrow	50	TAN AND GRAY SHALE SANDSTONE CLAY
DEVONIAN		Cedar Valley	150	GRAY TO BUFF LIMESTONE
	Ordovician	Maquoketa	70	SHALY LIMESTONE
		Dubuque	35	LIMESTONE AND SHALE
		Galena	200	GRAY DOLOMITIC LIMESTONE AND SHALY LIMESTONE
	Devonian	Decorah	20 - 90	GREEN LIMESTONE AND SHALE
		Platteville	15 - 40	GRAY LIMESTONE
	PALEOZOIC	Devonian	Glenwood	
St. Peter			75 - 150	YELLOW TO WHITE SANDSTONE
Cambrian		Prairie du Chien	130 - 340	GRAY DOLOMITE SANDSTONE PINK-GRAY DOLOMITE
		Jordan	60 - 110	TAN TO WHITE SANDSTONE
		St. Lawrence	50	BUFF AND GRAY DOLOMITIC SILTSTONE
Cambrian	Francania		200	GREEN SANDSTONE GRAY SANDSTONE
			200	GREEN SANDSTONE AND SILTSTONE
	Dresbach	UP TO 385	GRAY SANDSTONE GRAY SILTSTONE GRAY TO BROWN SANDSTONE	
PRECAMBRIAN	Keweenaw	Hinckley	UP TO 200	BUFF TO RED CROSS-BEDDED SANDSTONE
		"Red Closties"	UP TO 4,000	RED SHALE AND SANDSTONE
		Volcanics	UP TO 20,000	LAVA FLOWS

