

the biggest trilobite to have resided at the Falls 387 million years ago. The largest reported specimen was 16-inches (40 cm) long based on the size of the pygidium. Although giant trilobites have not been documented, they probably do occur in the rock layers in the Louisville metropolitan area. The Middle Devonian environment was one of a shallow, wave swept sea floor, teeming with life. The remains of large trilobites would have to be buried quickly, or they would have been destroyed by scavengers and ocean currents.

A diverse assemblage of trilobites is known from the Falls of the Ohio. Table 1 lists species that occur in local Devonian rocks. It is likely that new species await discovery.

### References and suggested reading

Boardman, R.S., et al (Eds.), 1987. Fossil Invertebrates. Blackwell Scientific Publications, pp. 213 - 241. College level text book.

Delo, David M., 1940. Phacopid Trilobites of North America. Geological Society of America, Special Paper 29. 135 pp. (Out of print.) Good information and illustrations.

Stumm, E. C., 1954. Lower Middle Devonian Phacopid Trilobites from Michigan, Southwestern Ontario, and the Ohio Valley. Contributions from the Museum of Paleontology, Ann Arbor, MI. Vol. XI, pp. 201-221. Found in college libraries with large or long-standing geology departments.

**Table 1**  
**Trilobites from the Falls area**

#### Jeffersonville Limestone

*Arctinurus* sp.  
*Anchiopsis anchiops* (Green) ?  
*A. tuberculatus* Stumm  
 “*Calymene*” *platys* (Green)  
*Coronura aspectans* (Conrad)  
*C. mymecophorus* (Green)  
*C. helena* (Hall)  
*Crassiproteus clareus* (Hall)  
*C. crassimarginatus* (Hall)  
*C. macrocephalus* (Hall)  
*Greenops kindlei* Ulrich & Delo ?  
*Odontocephalus bifidus* (Hall)  
*O. magnus* Stumm  
*Odontochile pleuroptyx* (Green)  
*Phacops nasutus* Stumm  
*P. pipa* Hall & Clarke  
*Trypaulites calypso* (Hall)

#### North Vernon Limestone

*Comura?* sp.  
*Crassiproteus crassimarginatus* (Hall)  
*Greenops boothi variety calliteles* (Green) ?  
*Greenops pleione* (Hall)  
*Phacops rana* (Green)

Specimens with “?” indicate questionable occurrence.

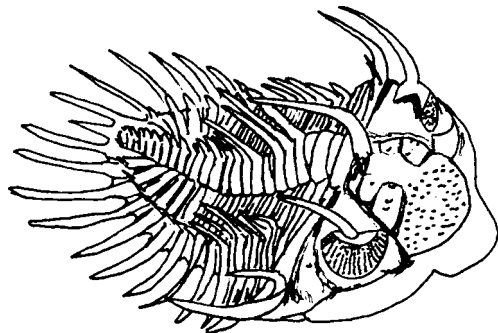
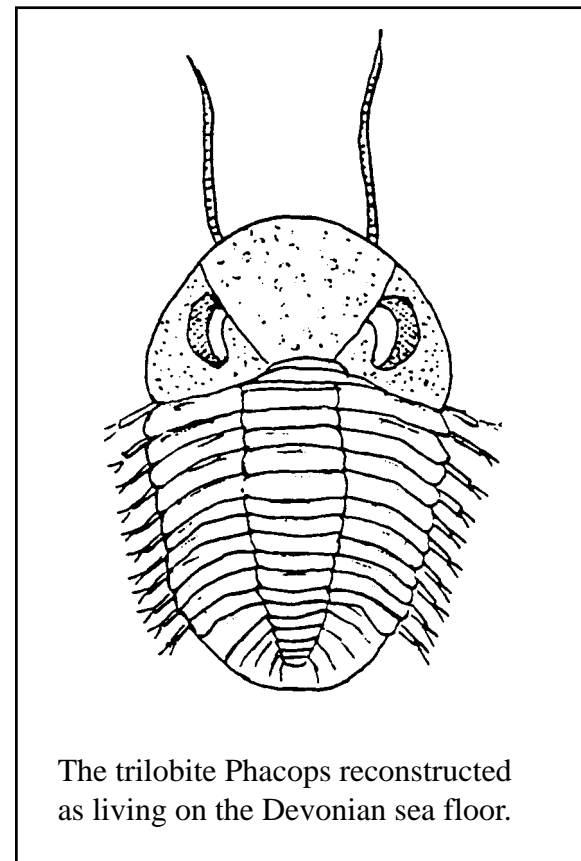


Figure 2. *Comura* is a very spiny trilobite from the Middle Devonian of Morocco. a partial specimen has been found locally in the North Vernon Limestone. Spines may have served as a deterrent to predators.

# Trilobites

## at the Falls of the Ohio



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## Trilobites at the Falls of the Ohio

If there were two groups of fossils that were readily identifiable by most people as fossils, they would have to be dinosaurs and trilobites. Although these unrelated fossils did not exist at the same time, they do share one thing in common: both are extinct. Trilobites became extinct about 245 million years ago, shortly before the first dinosaurs.

## What were trilobites?

Trilobites were marine arthropods— invertebrates (without a back bone). They thrived in an ocean environment that was similar to those shrimp or lobster live in today. Trilobites were among the first arthropods — existing before crustaceans, spiders, and insects. Highly mobile, these creatures were among the first to develop a hardened exoskeleton. As a result, trilobites may be found beautifully preserved as fossils today.

They were the first animals believed to develop good visual acuity (though some species were blind). Some paleontologists believe trilobites were the first animals with color vision. They could see their environment and were always alert for the creatures that preyed on them.

Trilobites are divided into three main parts — the *cephalon* or head, the segmented *thorax* and the *pygidium* or tail. The cephalon contains the bulk of the internal organs. The thorax contains the intestines and gill structures. The pygidium contains the anus. The name trilobite means “three lobed” in Greek. It refers to the axis that runs from the head to the tail. There is a central axis and a *pleural lobe* on either side (see figure 1).

The mouth of the trilobite, called a *hypostome*, was located beneath the cephalon. It was a scoop-like apparatus. Most trilobites were detritus feeders,

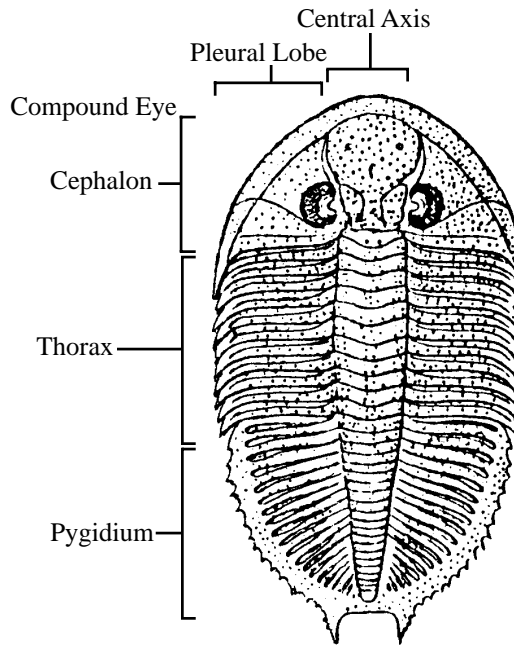


Figure 1. *Coronura aspectans* (Conrad) is one of the larger trilobites at the Falls of the Ohio.

pulling nutrients from the sediment of the sea floor. Some may have been predatory.

The thorax consists of varying numbers of interlocking segments. Adults of a particular trilobite species had a specific number of thoracic segments. These segments enabled trilobites to bend or enroll for protection like a modern pill bug. The tracks of trilobites have been found preserved in ancient muddy sea floor deposits. Very rarely, the legs have been observed along with other internal anatomy, matching the track prints that were thought to belong to these invertebrates.

Some trilobites developed extensive spines to ward off predators. Most typical were simple spines occurring as modifications of the head or tail regions. Some developed spines on the back of, or lateral projections from, the thoracic segments. Some Devonian species (see figure 2) have spines projecting from the back of their compound eye!

The chief method of dodging predators was to burrow into the sediment and hide. Trilobite resting places have been found preserved in rock layers. At least one has been found with the creature preserved in its burrow!

Rarely trilobites have been found that preserve soft tissue. Detailed anatomical studies unparalleled among extinct creatures have been done. Jointed appendages that provide locomotion and gill-like structures have been observed. The digestive and muscle systems of trilobites have been studied as well. Sensory antennae have been seen, attached on the underside of the head of the trilobite. In 1994 the first fossilized microscopic trilobite embryos were reported.

Like most arthropods, trilobites molted or shed their exoskeleton as they grew. The rocks at the Falls of the Ohio contain common trilobite fragments that are a result of molting. These fragments range in size from 1/4-inches (6mm) to more than 3-inches (8 cm) across. Complete trilobites are very rare. One of the largest Devonian trilobite species was found in New York rock layers equivalent to the coral beds at the Falls of the Ohio. This spiny trilobite called *Terataspis grandis* was about 18-inches (46 cm) long! Only one has ever been found. *Coronura myrmecophorus* (Green) may be