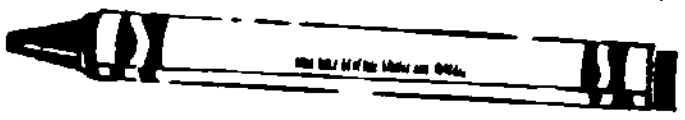




This Fact Sheet is the second in a series of five on Fossils of New Brunswick. It is suitable for the elementary school grades.

Ancient Fish

The Jawless Fish From Campbellton

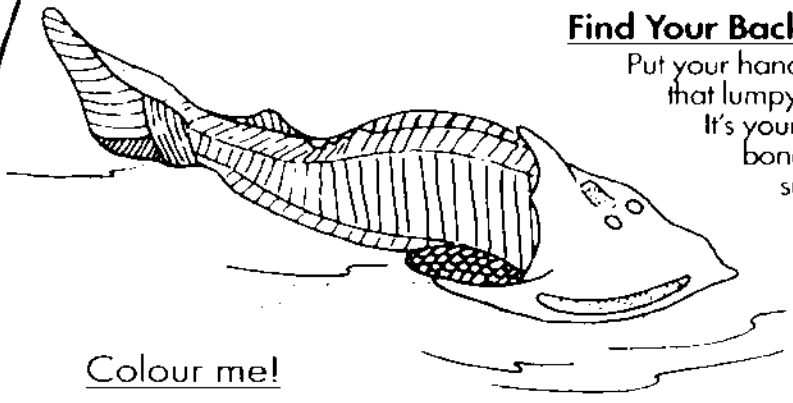


Find Your Backbone

Put your hand on your back. Do you feel that lumpy ridge running down the middle? It's your backbone and is made of smaller bones called vertebrae. The backbone supports your body and protects your spinal cord.

Scientists divide animals into two kinds: those with backbones, like us, and those without backbones, like most other animals on earth. Those with backbones are called vertebrates.

Fossils of vertebrate animals are called **vertebrate fossils**. New Brunswick has several kinds of vertebrate fossils. The oldest ones in the province are fish.



Colour me!

Fish Fossils

Fossil fish can be found across New Brunswick. They come in many different ages and types. The oldest fossil fish occur 30 kilometres north of Saint John and are over 400 million years old. The youngest ones come from near Hillsborough and are 340 million years old.

Scientists have found three groups of fossil fish in the province. There were fish that had jaws and a bony cover. That group is now extinct. And there were bony fish that are related to our modern salmon or trout.

But the fish described in this story belonged to the most ancient group of all. Every other fish group evolved from it. Its name is the **jawless fish group**.

The Jawless Fish From Campbellton

One of the first jawless fish fossils ever found in New Brunswick came from near Campbellton. A geologist named Robert Ells discovered the fish in 1881. He uncovered it from rocks that were 360 to 408 million years old.

Another geologist called the fossil *Cephalaspis campbelltonensis*. He chose the second word because the fossil was discovered in Campbellton. And he chose the first word because the fish was a type of ancient fish known as **cephalaspid**.

What Did Cephalaspid Look Like?

Cephalaspid existed about 350 to 400 million years ago. It was a small fish, about 20 to 30 centimetres long, and probably lived in shallow lakes or streams. Its closest modern relative is the lamprey eel.

Cephalaspids are now extinct, so you will never see one. But if you did, you might think it looked like a tiny shark in armour. Its body was covered with many hard curved plates that let the fish swish from side to side. The back had a vertical fin to stop the fish from rolling over.

A solid bony shield covered the fish's head. The front of the shield was rounded, but the back part ended in two horns. Cephalaspid had a pair of eyes on the top of its head. And it had one central nostril, right between the eyes.

How Did It Eat?

Cephalaspid was a bottom feeder with a mouth below the head. It sucked up material from the bottom of lakes or rivers like a vacuum cleaner, then strained out bits of food from the mud.

Cephalaspid's tail tilted up, which helped to push the fish down as it swam. This made it easier to stay on the bottom while feeding.

Protection From Predators

One of the strangest things about cephalaspid was its sensor zone. The zone was located in an arc along the bottom of the head shield. Scientists believe the area allowed the fish to sense or notice other creatures moving nearby.

Cephalaspid needed its armour and sensor zone to protect it from predators. Other animals lived in the ocean along with the little fish. One was the huge and ferocious sea scorpion, which could swallow many cephalaspids whole.

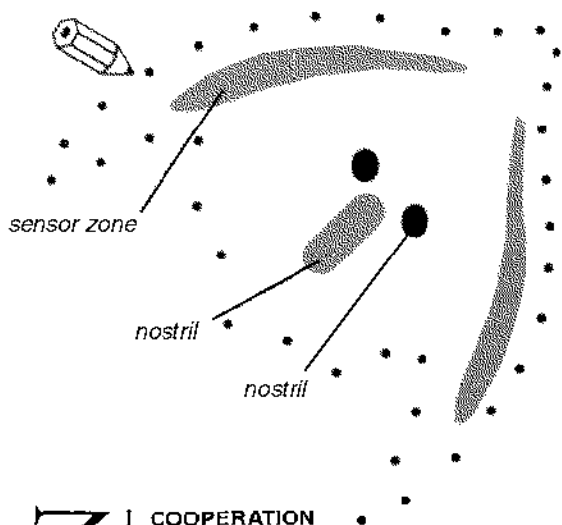
Changing Names

Sometimes scientists give a fossil one name, then change the name to something else.

Back in 1881, as you know, the Campbellton fossil was called *Cephalaspis campbelltonensis*. A few years ago another geologist studied the fossil and decided to change the name. The new name gives a better idea of how the fossil differs from other fossils like it.

A fossil usually is named after a place, or after a person. Our fossil's new name reflects both a place and a person. The new name is *Yvonaspis campbelltonensis*. The first word, *Yvonaspis*, honours a man called **Yvon Pageau**. He is a palaeontologist from Quebec who studies fish.

You probably think that both the old and new names are pretty hard to remember. But don't worry. If you ever go to Saint John and visit the New Brunswick Museum, just ask to see the jawless fish from Campbellton. The geologist there will know exactly what you mean.



Join the dots.

Top view of
Cephalaspis headshield

COOPERATION

COOPERATION
AGREEMENT
ON MINERAL
DEVELOPMENT

Across:

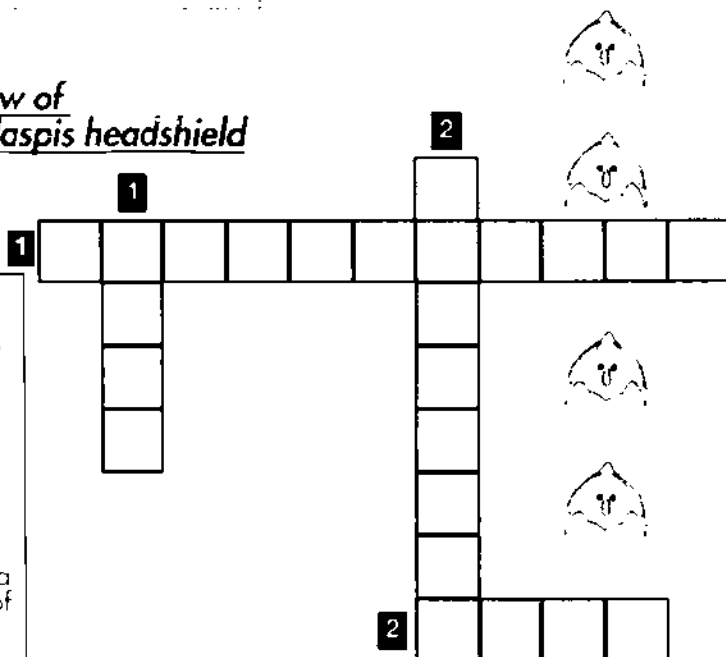
1). The jawless fish from Campbellton was a type of ancient fish known as a _____.

2). Robert _____ discovered the first jawless fish in 1881.

Down:

1). Cephalaspids has a pair of _____ on top of its head.

2). A fish with a vertebrae is a fish with a _____.



Cephalaspis Trivia

Across: 1. Cephalaspid 2. Ellis
Down: 1. Eyes 2. Backbone