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Errors and omissions:

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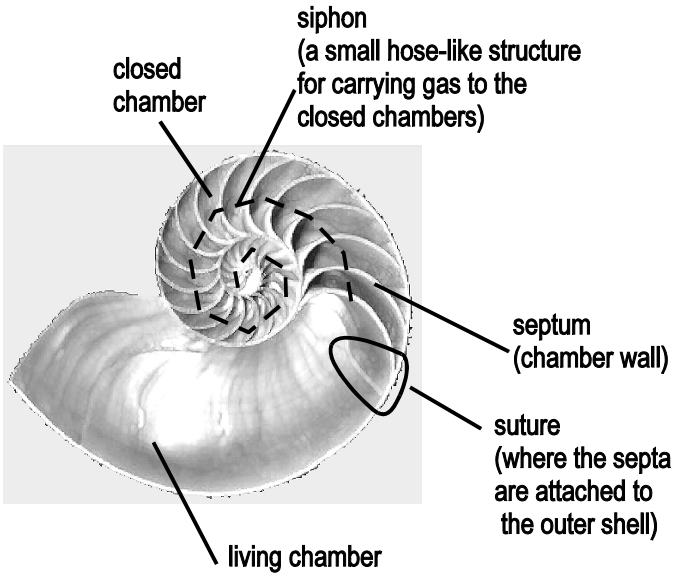
A bigger, better ammonite for *SHALE*—*by Nick Doe*

Good fossils from the late-Cretaceous period are rare on Gabriola. This is partly because some geological formations, particularly the Gabriola Formation, contain very few fossils anywhere, not just here, and partly because, on Gabriola particularly, the groundwater chemistry in ancient times seems to have favoured the complete re-working of shells into calcite nodules (concretions) whose biological origins have thereby been completely obscured (*SHALE* **9** 41–52). From time-to-time though, a rarity does appear on the scene. In *SHALE* **6** 22–3, we reported on an ammonite find, and now we can report an even better one—albeit just a fragment.

Of all living creatures, the nautilus, *above*, most closely resembles an ammonite. Ammonites were predators; excellent swimmers; and had good eyesight. They went extinct at the same time as dinosaurs.

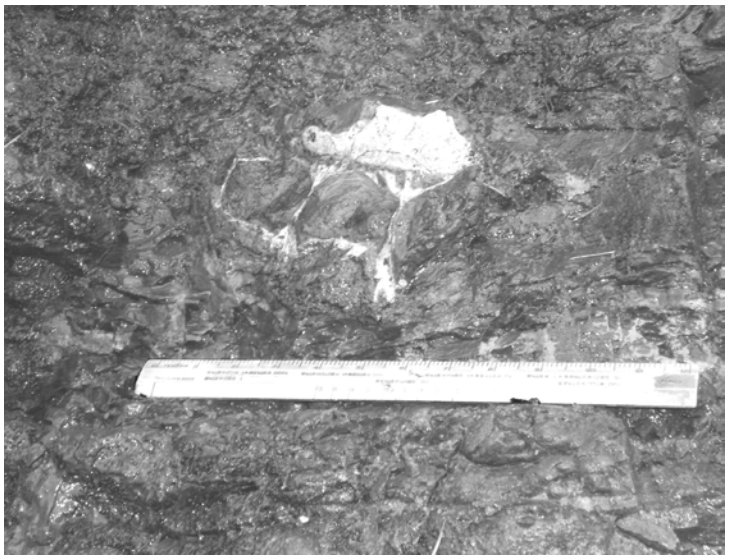
Like modern nautiloids, but unlike snails, ammonites (of which there were hundreds of different species by the way) had a chambered shell. The chambers were separated by partitions called septa, and all the chambers were sealed except for the large outer chamber, which is where the creature lived. The living chamber was always being expanded, and when it grew sufficiently large, the ammonite would move its body forward toward the entrance and seal off the vacated space behind it with a new septum.



A flexible hose-like siphon ran through the otherwise empty chambers, and this was used to move gas and fluid into and out of the chambers. A popular idea is that this may have enabled the ammonite to adjust its buoyancy, like ballast tanks on a submarine, but more certainly, it allowed the mollusc to pressurize the chambers as it dove in pursuit of prey.

In some species, including the one found on Gabriola, the water- and gas-tight septa were sutured to the inside of the outer shell by an intricate pattern of interlocking pearly shell (aragonite). When I first saw the fossil, I had no idea that these sutures would become visible, but after soaking in water to get rid of some of the mud, they did.

Graham Beard at the Vancouver Island Paleontological Museum says our fossil likely belongs to the *Pachydiscus* genus, but the advice of local experts Ken Porteous and Rufus Churcher is being sought on precise identification and preservation. ◊



Katherine Gordon

First view of the fossil embedded in the shale cliff (Northumberland Fm., just west of the Maples) showing two chambers in cross-section and the fluting of the septa where they join the inside of the outer shell (12-inch ruler). It took an hour of study and probing with a dental pick before I dared start work on the cliff using a small chisel. There is a fault running upward from the bottom lefthand corner of the photograph, and there was no trace of the fossil to the left of it. The righthand side of the fossil was just a mush of rotted shell and weathered mudrock, so I'm confident that I got most of what there was to get out intact.

One of the sutures, *left*, is easily seen here as a white pattern overlaying a black background. However, if you look at the negative of the image (black & white reversed) *right*, you still see a white pattern overlaying a black background, not as you might expect, a black pattern overlaying a white background. In fact, the suture is a symmetrical interlocking junction between two thin layers of shell with the same style of patterning.