



Aldemaro Romero | Special to The Sun

One of the fossilized jellyfish found in Spain shows remarkable detail.

Researcher finds new fossils in Spain

BY ALDEMARO ROMERO
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In one of the richest fossil sites in the world because of the quality of their preservation, the author of this article and some of his collaborators have found new species of fossilized creatures previously unknown to science.

The locality is known as Alcover in northeastern Spain, about one hour south of Barcelona. That area has been exploited as a quarry since Roman times because the stones are naturally polished from the smooth process of sedimentation that has taken place over 260 million years.

Since the 1960s a number of fossils have been found in excellent condition, showing delicate details rarely seen elsewhere in the world. One of the most dramatic examples is that of several species of fossilized jellyfish. Because the bodies of jellyfish are made up of more than 99 percent water, they are rarely found as fossils. Further, the detail of the morphology is such that their ancestors could be identified, and their descriptions will be published soon in *Battalleria*, an European journal of paleontology.

These are not the only remarkable findings in that quarry. Since the 1970s, together with other colleagues, I have discovered a number of fossils of a group completely extinct today. These creatures of up to one foot in length resemble the larvae of today's little-known marine organisms, except that these fossils are dozens of times larger. The details shown by these fossils are also remarkable.

Unlike other fossil deposits in the world, the fossils of Alcover are almost always complete.

Other fossils have been identified, ranging from fish to crustaceans, starfish, mollusks, insects, plants and even reptiles. One of the reptiles happened to be a species related to the group of lizards that gave rise to the dinosaurs.

One of the most intriguing questions about this fossil site is why such animals have been so well preserved.

After a number of geological, paleontological and chemical studies, researchers have concluded that the waters in which these animals were buried in the sand had a very low content of oxygen, which resulted in few bacteria that would normally rapidly decompose these organisms. That, together with a number of fine layers of sand that buried the animals after rainfall, explains their extremely well-preserved conditions.

This sedimentation process has been taking place for so many millions of years that the quarry is now about 15 miles from the coast where it was at one time submerged under the waters.

Some of the terrestrial organisms found in those deposits, such as lizards and plants, seem to have been washed out after a big precipitation event. This explains why the bodies of terrestrial lizards show characteristics normally found only in drowned animals such as their extremities being completely relaxed.

Because birds and mammals did not appear on the earth until millions of years later, reptiles are the most complex organisms found in Alcover.

As more fossils are found, their descriptions will appear in the scientific literature in order to advance our knowledge of the history of life on earth.

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