

Press release
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To the media

Outstanding palaeontological discovery in the heart of the Swiss Alps

A Swiss team of palaeontologists discovered fossils of an exquisitely preserved coelacanth fish in the Ducan mountains near Davos, 2740 meters above sea level. This 240 million years old unusual animal sheds a new light on the evolution of this iconic group of fishes, and raises new questions about evolution of vertebrates in general.

The fossils of the coelacanth were discovered by a skilled amateur palaeontologist, Christian Obrist, who has been working for 20 years in a team of the University of Zurich at the palaeontological site of the Ducanfurgga near the town of Davos. This discovery, published in *Scientific Reports* on the 20th of October (www.nature.com/articles/s41598-017-13796-0), stands among the major ones made during the last years in Switzerland.

The fossils, unearthed from Middle Triassic rocks of the Ducan mountains are beautifully preserved. Thorough investigation conducted by a palaeontologist from the Natural History Museum of Geneva, Lionel Cavin, in collaboration with researchers from the universities of Zurich and Basel using high-tech CT scan technology allowed describing precisely the anatomy of the coelacanth and deciphering its position in the evolutionary tree. The specialists identified the new fish as a new genus and new species of coelacanth very different from any others, which they named *Foreyia maxkuhni*.

The coelacanth from the Swiss Alps is characterized by a remarkable dome-like head, a shortened body and a tiny recurved mouth. These features indicate that the fish did not inhabit deep sea water, as the living coelacanths do, but shallow nearshore environments. This unusual morphology is reminiscent of the extant angel fishes and might be the outcome of a minor genetic mutation at the origin of deep morphological changes. This little evolutionary jump would have provided a selective advantage that enabled the coelacanth to occupy a new ecological niche.

This species, portrayed as odd-looking by the researchers, provides a new insight into the unexpected morphological and ecological diversities of the coelacanth lineage, which is otherwise morphologically monotonous. It also raises far-reaching questions about evolutionary processes and about the modality of the freshwater to land transition in vertebrate evolution.

Paper available at: www.nature.com/articles/s41598-017-13796-0

Photo link: <https://photos.app.goo.gl/62eQXpzTpPBfQ3By2>

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