

THE TRILOBITES TOUR ROUTE IN PORTUGAL – DEVELOPING THE FIRST GEOTOURISM ITINERARY DEDICATED TO ORDOVICIAN PALAEOBIODIVERSITY

C. Neto de Carvalho^{1,2*}, H. Couto³, M. Valério^{4,5}, & T. Oliveira^{1,6}

¹Geopark Naturtejo da Meseta Meridional – European and Global Geopark, Geology and Paleontology Office, Centro Cultural Raiano, Av. Joaquim Morão, 6060-101 Idanha-a-Nova, Portugal, ²Municipality of Idanha-a-Nova, Av. Joaquim Morão, 6060-101 Idanha-a-Nova, Portugal. ³Departamento de Geociências, Ambiente e Ordenamento do Território/Centro de Geologia, Faculdade de Ciências, Universidade do Porto. Rua do Campo Alegre 687, 4169-007 Porto, Portugal.

⁴Centro de Interpretação Geológica de Canelas, Canelas de Cima Cx 213, 4540-252 Arouca, Portugal,

⁵Ardósias Valério & Figueiredo, Lda., 4540-252 Arouca, Portugal, ⁶Turismo Centro de Portugal – Pólo de Castelo Branco. Naturtejo. Av. Nuno Álvares, 30, 6000-083 Castelo Branco, Portugal.

*carlos.praedichnia@gmail.com

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A thematic tour devoted to trilobites

Thematic routes, such as the most recognized gastronomical, architectonical or famous writer's tours, are tourism products organizing natural or manmade attractions accessible around a chosen theme. In recent years the number of thematic routes all over the world was multiplied following the trend for stronger networking cooperation among organizations or regions. With the advent of protected natural areas based on the Geological Heritage and the Geoparks in Portugal there is an increasing demand on Geotourism attractions that must be fulfilled by organizing the existing offer or utilizing almost unexploited tourism resources. A thematic route linking geotourism attractions is the way to diversify the tourism demand by improving quality and thus providing stronger arguments to enlarge the time of holidays and reduce seasonality, with a relatively small investment. For the general public, trilobites are the dinosaurs of the invertebrate animal world. Fossil diversity and abundance in the Ordovician rocks of Portugal, together with historical and well-established palaeontological research in internationally-well known or newly-discovered fossil sites, and interpretive facilities already available, makes trilobites a logical brand for a thematic geotour. Under the agreement between Naturtejo partnership managing Naturtejo Global Geopark, the Faculty of Science of the University of Porto and the Geological Interpretation Center of Canelas, the project "Trilobites Route" between Douro and Tejo rivers is being developed in the frame of the Centre of Portugal Tourism Region. This project unequivocally joins the three areas in Portugal where trilobites can be enjoyed on-site. Here we present the Trilobites Route highlights starting from Porto International Airport where most of the low-cost flight companies operating to Europe are based. Valongo Palaeozoic Park is just 20 km from Porto. As alternative, the Route may start in the Lisbon International Airport connected worldwide, with a 2 hour drive to Naturtejo Global Geopark where the Ichnological Park of Penha Garcia is part of.

Trilobites destinations in Portugal

Valongo Palaeozoic Park may be the first stop for discovering the ancient world of the trilobites. The Park opened in 1998 as a result of the partnership between the Municipality of Valongo and the Faculty of Science of the University of Porto aimed at priority to preserve and disclose the palaeontological heritage of Valongo area. Among the precious and diversified geological heritage existing in the Park, the internationally known Ordovician trilobites of Valongo are of particular interest owing to their scientific, didactic and aesthetical values. In the Park an Interpretative Circuit with three geo-trails is available to visitors. In one of them (green trail) a route 5 km-long signed along the right bank of Ferreira river follows the Ordovician sequence allowing to make a journey through geologic time since the beginning of Ordovician with the opening of Rheic passing through a sea with a great biodiversity dominated by trilobites till the ice age of Upper Ordovician that almost extinguished these marine

invertebrates. This trail ends in a small typical rural village called Couce. In the Park there is an Interpretative Center where, among other didactic materials, thematic posters and a permanent exhibition of fossils of the Palaeozoic of Valongo, namely trilobites, exemplify the forms of life that populated the seas of Valongo about 470 million years ago.

Canelas Fossil Site is remarkable for the reconstitution of the Ordovician ecosystem where different species of giant trilobites thrived. Another singular feature here is the occurrence of mono- or plurispecific congregations of trilobites evidencing gregarious behavior. The fossil site is actually an active quarry for fine slates. “Ardósias Valério & Figueiredo, Lda.” has been doing a meticulous work in the last two decades collecting the fossils as priority in the industrial activity, that otherwise would be almost impossible to achieve such important palaeontological collection. Nowadays recognized for the international importance, the former known “Slate Quarry of Canelas” is actually a well-established site for the geology of Portugal. This very original example of geoconservation, as result of the solid cooperation between the extractive industry and researchers from several universities, makes a collection of reference available for new advances in different palaeontological disciplines and life evolution. The Geological Interpretation Center of Canelas, also known as the “Museum of Trilobites” and unique in its kind, enables visitors to travel to the Dawn of metazoan life and to contact with the animals that lived in the Ordovician sea 465 million years ago. Open to the public since 2006, the Fossil Site of Canelas inspired the application of Arouca to the European and Global Geoparks and the trilobites are now an icon for the region. Born as a private family project and based on two decades of careful fossil collecting the giant trilobites of Canelas are now inspiring entrepreneurship, with the development of new handcraft approaches and the very special restaurant “Trilobite” at Canelas.

Ichnological Park of Penha Garcia immerses the visitor into the life modes of the long-extinct trilobites. Integrated in an outstanding scenario where vertical quartzite beds present fossil behavior like a gigantic art gallery, the Park symbiotically includes the classic *Cruziana* trace fossils in exquisite preservation with local rural life and heritage. The visitor discovers a new world of wonder by the Fossils Trail, 3 km-long signed trail surrounding the village of Penha Garcia. Guided tours and educational programs are provided by skilled rangers in the local tourism office and exhibit gallery. The tour includes the visit to the historical part of the village with the quartzite neighborhood and the Templar Castle, the viewpoint of the Mother Church with panel interpretation and the 5 centuries-old watermills recovered for use. Those who wish to find the Ponsul gorge in an alternative way may prefer the rock climbing school. The local Interpretive Center and the House of the Fossils provide information on the fossil site in place. Pego swimming area is a must stop during the hot summer. Alternatives provided by local companies include a donkey ride or 4x4 in the Smugglers paths, kayaking in the Penha Garcia reservoir or traditional baking. Trilobite.Aventura is an active tourism company providing activities in the Ichnological Park. Tourism facilities include a rural guest house – Casa de Santa Catarina, restaurants, bar and a traditional bakery for tasting local flavors, as well as the “Rancho das Casinhas” horse ranch and a tourism complex with swimming pool and multisport.

Work in Progress

After the “Trilobites Tour Route” presentation to Centre of Portugal Tourism, including a comprehensive description of the relevance of each of the fossil sites attractions and the roads signing plan, the next steps will be to improve the cooperation with Porto & Norte Tourism for the development of communication/interpretive tools for the new Trilobite-themed attractions, such as website, tourism brochures or information panels.