

1. Record Nr.	UNINA9910735566303321
Titolo	The variscan belt of western Europe . Volume 1 : History, Geodynamic Context and Early Orogenic Events // coordinated by Yoann Denele and Julien Berger
Pubbl/distr/stampa	London, England : , : ISTE Ltd, , [2023] ©2023
ISBN	1-394-22896-1 1-394-22894-5
Edizione	[First edition.]
Descrizione fisica	1 online resource (261 pages)
Disciplina	554.4
Soggetti	Geology - France Earth sciences - History
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover -- Title Page -- Copyright Page -- Contents -- Preface -- Introduction -- List of Figures -- Chapter 1. The Variscan Belt: History of the Evolution of Methods and Concepts -- 1.1. Introduction -- 1.2. Beginnings of geology, from the Renaissance to the Industrial Revolution -- 1.2.1. From Earth's history to regional geology -- 1.2.2. Stratigraphy of the Paleozoic at the front of the Variscan belt -- 1.2.3. Concepts of deep magmatism and metamorphism -- 1.2.4. Microscopic analysis of crystalline rocks -- 1.2.5. Theory of magmatic uplifting -- 1.2.6. Geosynclinal theory developed from the Appalachians -- 1.2.7. Mountain belt vergence theory -- 1.3. Debate between fixists and mobilists from the late 19th to early 20th centuries -- 1.3.1. Geosynclinal theory and the European Variscan belt -- 1.3.2. Zoneography of metamorphism in the Variscan belt -- 1.3.3. Nappes, migmatites and plutons of the internal Variscan belt -- 1.3.4. The Variscan belt and continental drift -- 1.4. Unification of the Earth sciences in the late 1960s -- 1.4.1. The Variscan belt at the time of plate tectonics -- 1.4.2. Principal sutures and continental blocks -- 1.4.3. Paleogeographical reconstructions -- 1.4.4. Geodynamic tectonic models -- 1.5. Conclusion and challenges of the 21st century -- 1.6. References -- Chapter 2. Paleogeographical and Paleo-Geodynamic

Context of the Variscan Belt -- 2.1. Introduction -- 2.2. Litho-tectonic zonation of the Variscan belt and identification of the principal "paleogeographical domains": contribution of great precursors and evolution of ideas -- 2.3. Paleogeographic reconstructions: paleontological, paleo-climatological and mineralogical data -- 2.4. Paleomagnetic data and paleogeographic reconstructions -- 2.4.1. First investigations: 1980-2010 -- 2.4.2. Paleomagnetic, mantle and unified kinematic models: 2010-2020.

2.5. Concluding remarks -- 2.6. References -- Chapter 3. Pre-collision Magmatism -- 3.1. Introduction -- 3.2. Cadomian magmatism in brief -- 3.3. Geochronological data: two magmatic phases in the Lower Paleozoic -- 3.4. Cambrian-Ordovician magmatism -- 3.4.1. Ophiolites -- 3.4.2. Metabasites: amphibolites, eclogites and basic granulites of allochthonous units -- 3.4.3. The leptyno-amphibolite complex -- 3.4.4. Orthogneisses of allochthonous metamorphic units -- 3.4.5. Magmatism of autochthonous and para-autochthonous units -- 3.4.6. Summary, petrogenic and geodynamic proposals -- 3.5. Devonian magmatism -- 3.5.1. Calc-alkaline plutons -- 3.5.2. Subalkaline lava -- 3.5.3. Central and North American dolerites -- 3.5.4. The ophiolites issue -- 3.5.5. Summary, petrogenic and geodynamic proposals -- 3.6. Conclusions and perspectives -- 3.7. References -- Chapter 4. Early Metamorphisms and Deformations in the French Variscan Belt -- 4.1. Introduction -- 4.2. Metamorphisms and deformations in the Moldanubian domain -- 4.2.1. Eo-Variscan events -- 4.2.2. Lower Carboniferous Variscan tectono-metamorphic events -- 4.3. Metamorphisms and deformations in the Saxothuringian domain -- 4.4. Metamorphisms and deformations in the eastern Variscan branch -- 4.4.1. Massifs free of alpine superimposition: Maures-Tanneron and Corsica-Sardinia Massif -- 4.4.2. Alpine Variscan substratum -- 4.5. Conclusion -- 4.6. References -- List of Authors -- Index -- EULA.

Sommario/riassunto

This book deals with the geological record and the evolution of ideas concerning the Variscan orogenic belt in France and neighboring regions. Volume 1 is based on a general introduction concerning the imprint of the Variscan period on the geology of France, as well as on the particularities of the study of this ancient orogen. A history of the concepts applied to the Variscan belt is proposed in order to consider this orogen in the history of Earth Sciences. A paleogeodynamic analysis of the Variscan cycle sets the general framework for the evolution of the orogen, which is then tackled through the prism of the magmatic, metamorphic and tectonic record of the early phases (from Cambrian to Lower Carboniferous). Volume 2 proposes an analysis of the late evolution of the Variscan orogenic belt, reflecting its dismantling in a high-temperature context during the Upper Carboniferous and Permian. The sedimentary archives are described, as well as the questions raised by the specificities of this ancient orogen.
