ISBN 978-3-86944-220-4

EDGG

1848 2023 DGGV German Geological Society 175 Years

2024 . Heft 271

Exkursionsführer und Veröffentlichungen der Deutschen Gesellschaft für Geowissenschaften

GeoSaxonia 2024 – GEOSCIENCES without borders. DGGV Annual Meeting 2024

Dresden, 23 – 26 September 2024

Exkursionsführer / Excursion guide

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Ulf Linnemann, Guido Meinhold & Heinz-Gerd Röhling (Hrsg.)

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Exkurs.f. u. Veröfftl.	Berlin	271 (2024)	Insges. 96 S., 80 Abb.

(Exkursionsführer und Veröffentlichungen der Deutschen Gesellschaft für Geowissenschaften, Heft 271)
ISBN 978-3-86944-220-4

Exkursionsführer und Veröffentlichungen der Deutschen Gesellschaft für Geowissenschaften EDGG
Herausgeber: Deutsche Geologische Gesellschaft – Geologische Vereinigung

Schriftleitung: Heinz-Gerd Röhling

Redaktion Heft 271: Heinz-Gerd Röhling

Herausgeber Heft 271: Ulf Linnemann, Guido Meinhold & Heinz-Gerd Röhling

ISBN 978-3-86944-220-4
Informationen zu diesem Titel: www.meckedruck.de/9783869442204

Vertrieb/Distributor: Mecke Druck und Verlag
Christian-Blank-Straße 3
D-37115 Duderstadt, Germany
www.meckedruck.de/edgg

Layout: DesignRing Designmanagement GmbH, D-06114 Halle
Druck: Mecke Druck und Verlag, D-37115 Duderstadt

Cover photos:
Upper row: Left: Columnar jointing in olivine-augite-nephelinite below Stolpen Castle in the Saxon Switzerland-Eastern Ore Mountains district (Source: Guido Meinhold); Right: Research and teaching mine “Reiche Zeche” at the TU Bergakademie Freiberg (Source: TU Bergakademie Freiberg / media library). Lower row: Left: Topas crystal showing gemstone quality (Schneckenstein near Muldenhammer, Vogtland, Saxothuringian Zone) (collections of the Senckenberg Naturhistorische Sammlungen Dresden, Sektion Mineralogie); Center: Quarry Kindisch near Elstra (Cadomian granodiorite, intruded around the Ediacaran-Cambrian boundary, Lausitz Block, Saxothuringian Zone) (Source: Ulf Linnemann). The granodiorite yields an age of intrusion of 538 ± 2 Ma (U-Pb zircon age performed by LA ICP-MS, Ulf Linnemann et al., unpublished); Right: Agat and amethyst from Schlottwitz (eastern Erzgebirge near Dresden, Saxothuringian Zone) (collections of the Senckenberg Naturhistorische Sammlungen Dresden, Sektion Mineralogie).

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Die Lausitz im Wandel: Wiedernutzbarmachung auf der Innenkippe des Braunkohlentagebaues Nochten und der Lausitzer Findlingspark Nochten

Diese Exkursion wird im Rahmen der des 52. Treffens des Arbeitskreises Bergbaufolgen in der DGGV , das direkt vor der GeoSaxonia 2024 stattfindet, durchgeführt und ist auch für Teilnehmer der GeoSaxonia 2024 offen. Der vollständige Exkursionsführer findet sich im Tagungsband „Die Lausitz im Wandel: Vom Braunkohlenbergbau zum Hotspot der Biodiversität" (Böhnert, W., Heidenfelder, W. & Rascher, J. (Hrsg.): Die Lausitz im Wandel: Vom Braunkohlenbergbau zum Hotspot der Biodiversität – Erkenntnisse aus drei Jahrzehnten Biomanagement. – Exkurs.f. und Veröfftl. DGG, 270: 245-270; Berlin).

Teil I: Die Bergbaufolgelandschaft des Braunkohlentagebaues Nochten

Führung: Wolfgang Böhnert (Landschaftsplanung Dr. Böhnert GmbH), Uta Masch, Stine Thieß, Michael Rösler (Lausitz Energie Bergbau AG), Wolfram Heidenfelder, Jochen Rascher (GEOmontan GmbH Freiberg)

Der Förderbrückentagebau Nochten liegt südlich von Weißwasser im Freistaat Sachsen (Abb. 1) in der Muskauer Heide. Das Gebiet gehört zum Siedlungsraum der nationalen Minderheit der Sorben (Wenden). Die Exkursion führt durch einen repräsentativen Ausschnitt des Tagebaus Nochten von der Grube mit Kohlengewinnung bis in die Rekultivierungsflächen unterschiedlichen Alters auf der Innenkippe.

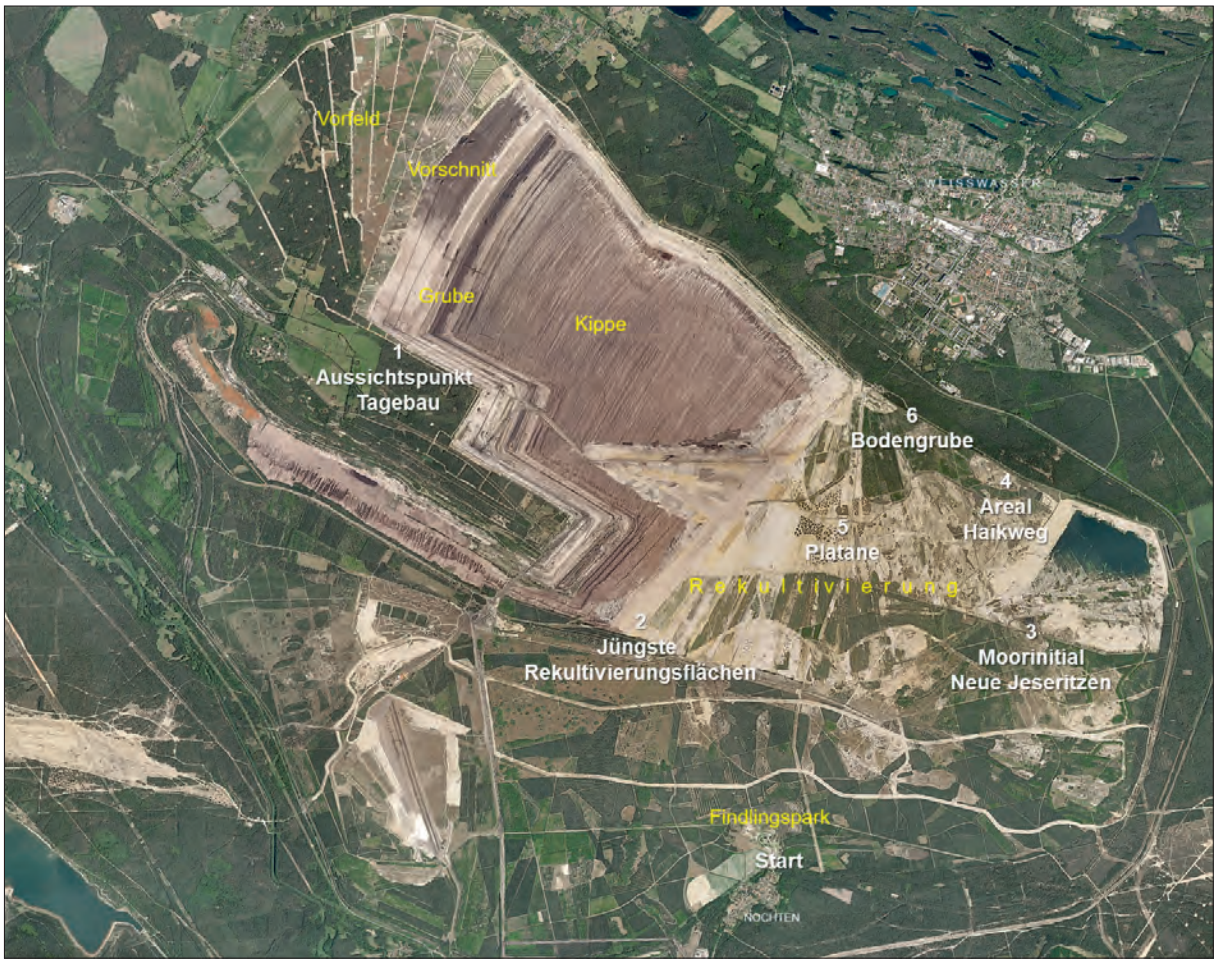

Abb. 1: Exkursionsstops auf der Innenkippe des Tagebaues Nochten (Luftbild: LEAG).

Voigt, T. (2024): Geology of Saxon Switzerland. – In: Linnemann, U., Meinhold, G. & Röhling, H.-G. (Hrsg.): GeoSaxonia 2024 – GEOSCIENCES without borders. – Exkurs.f. und Veröfftl. DGG, 271: S. 9-28, 23 Abb.; Berlin

Geology of Saxon Switzerland

Thomas Voigt

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thomas.voigt@uni-jena.de

Excursion stops

1. Ottomühle section group (Schmilka fm)
2. Postelwitz quarries, type locality of the Postelwitz fm.
3. Schmilka-section group: Rotkehlchenstiege – Falknertürme – Reitsteig – Wenzelwand – Bussardtürme (Upper Postelwitz fm. and Schrammstein fm.)
4. Stolpen Burgberg

Introduction

The Upper Cretaceous of the Saxonian Cretaceous Basin is restricted to the Elbe Fault Zone, which runs NW–SE parallel to the Elbe River (Fig. 1). Sedimentation starts in the Cenomanian with river deposits in several paleo-valleys. They are deeply incised into a diverse basement of high morphology, covering Precambrian greywackes, early Cambrian granodiorites, Paleozoic units from Ordovician to Carboniferous of the Saxothuringian, metamorphic units (gneiss) of the eastern Erzgebirge and clastic sediments of the Rotliegend (Döhlen Basin). Starting already in the early Cenomanian (Wilmsen et al. 2019), the Cretaceous sea entered the area and led to the deposition of a continuous succession of Cretaceous deposits, spanning the Cenomanian to lower Coniacian. Some of the most conspicuous basement highs were flooded lately in early to middle Turonian times. Sedimentation continued probably until the Campanian, indicated by cooling ages of the neighbouring Lausitz-Krkonosze High (Lange et al 2008, Migon & Danišík, 2012, Głuszynski & Aleksandrowski 2022) and diagenesis of Cretaceous deposits, indicating a sedimentary cover of at least 3000 m thickness (Danigel 2018, unpublished). After the early to late Cenomanian fluvial deposition, marine deposits prevail throughout the succession in Saxony, with a clear proximity tendency to the Northeast. The Saxonian Cretaceous basin represents

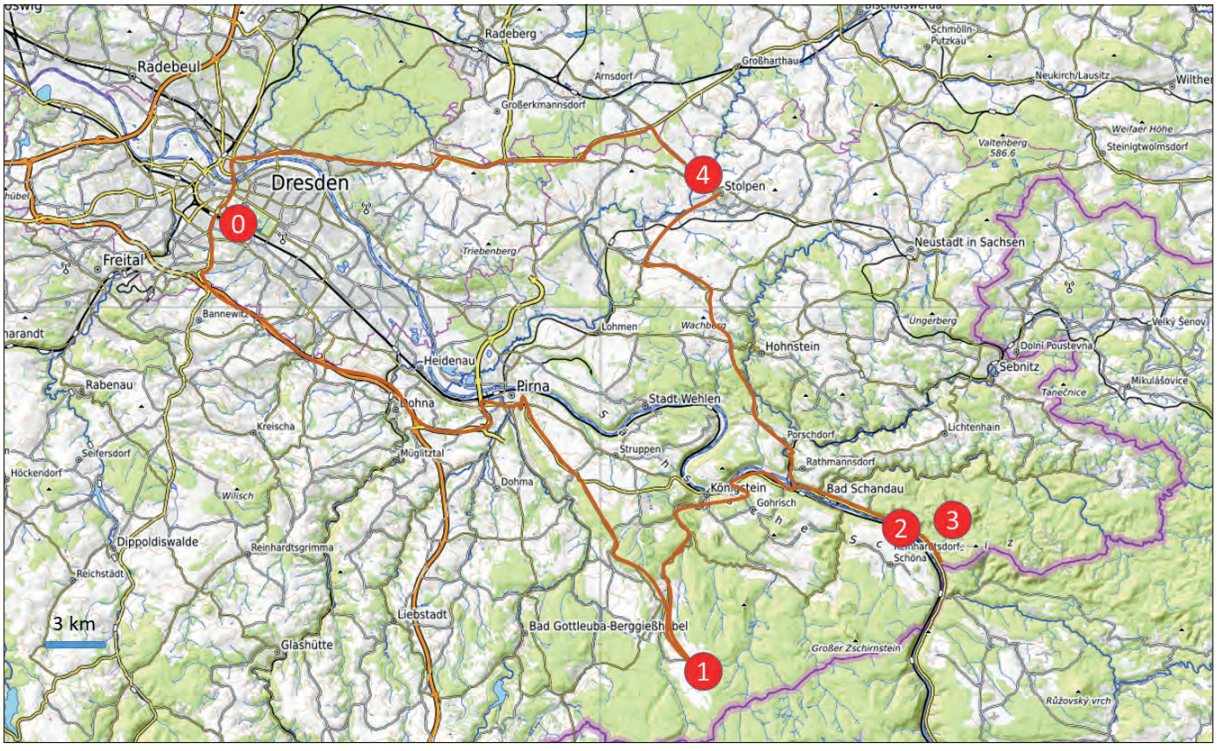

Fig. 1: Position of the excursion localities.

Linnemann, U., Zieger-Hofmann, M., Mende, K., Rojo-Perez, E., Gärtner, A., Hoffmann, A. & Zieger, J. (2024): The Cadomian Basement of the Lausitz Block – A day-trip to Germany's oldest rocks. – In: Linnemann, U., Meinhold, G. & Röhling, H.-G. (Hrsg.): GeoSaxonia 2024 – GEOSCIENCES without borders. – Exkurs.f. und Veröfftl. DGG, 271: S. 29-44, 12 Abb.; Berlin

The Cadomian Basement of the Lausitz Block – A day-trip to Germany's oldest rocks

Ulf Linnemann, Mandy Zieger-Hofmann, Katja Mende, Esther Rojo-Perez, Andreas Gärtner, Adrien Hoffmann und Johannes Zieger

Senckenberg Naturhistorische Sammlungen Dresden, Museum für Mineralogie und Geologie, GeoPlasmaLab, Königsbrücker Landstraße 159, Dresden, 01109, Germany, ulf.linnemann@senckenberg.de

Program

During the fieldtrip we will examine rocks from the Cadomian Basement of the Lausitz Block. These rock units show ages ranging from c. 565 to 538 Ma (Upper Ediacaran to earliest Cambrian). Germany´s oldest rock suite includes a Cadomian back-arc basin and a magmatic granodioritic suite. We start with outcrops of the Weesenstein Group in the Elbe Zone (Elbtalschiefergebirge). Outcrops are situated close to Dresden. The rock unit is composed of passive margin deposits such as a glaciomarine tillite (Müglitz Formation) and related glacioeustatic induced low-stand deposits represented by high mature meta-sandstones (Purpurberg Quartzite, Seidewitz Formation). The trip continues to the inner part of the Lausitz Block. Here, we present parts of the c. 539 Ma old magmatic suite of granodiorites which are intrusive against deformed greywacke turbidites of the Lausitz Group (quarry Kindisch near Elstra). The trip continues to the area of the city of Kamenz, where sedimentary rocks of the Cadomian back-arc basin (Lausitz Group, greywacke, quarry Butterberg near Bernbruch and Kamenz) and conglomerates (Petershain) occur. Further, the deformation style of sedimentary rocks and the depositional environment will be discussed. During the trip we will present several geochronological and geochemical data including a geotectonic model for Cadomian orogenic processes.

The Cadomian Orogeny in the Saxothuringian Zone

Precambrian rocks in the Saxothuringian Zone of the Bohemian Massif (Fig. 1) were described first as so-called "Algonkium" by Pietzsch (1914, 1917) who compared volcano-sedimentary rock complexes with the "post-spilitic series" in the Teplá–Barrandian unit. Such a lithostratigraphic correlation was used also later by von Gaertner (1944) and by geologists in the second half of the 20th century (e.g., Hoth 1968). Due to complicate outcrop situation, the Cadomian Basement in the Saxothuringian Zone (Fig. 2) was discovered relatively late and became first described from a drill core of the drilling 5507/77 in the western Lausitz Block by Linnemann and Buschmann (1995a). Furthermore, as a result from a mapping campaign, the Cadomian unconformity became known from the area of the Hohe Dubrau in the eastern part of the Lausitz Block (Linnemann and Buschmann 1995b). In both cases deformed Ediacaran-aged rocks are overlayered unconformably by Lower Ordovician sandstones. Buschmann et al. (1995, 2006) could detect the Cadomian unconformity in a drill core from the Torgau–Doberlug syncline below c. 520 Ma old Cambrian strata. First robust age dating placed the Cadomian Basement of the Saxothuringian Zone into the Upper Ediacaran and the lowermost Cambrian (Gehmlich et al. 1997, Linnemann et al. 2000, Tichomirowa 2003). Detrital U–Pb zircon age dating enabled intense provenance studies, which demonstrated a strong relation of the Cadomian Basement of the Saxothuringian Zone with the northern periphery of the West African Craton (Fig. 3, Linnemann et al. 2000, 2014, 2018). Geochemical data have shown a pronounced active margin setting for the volcano-sedimentary complexes of the Cadomian Basement (Buschmann 1995; Linnemann and Romer 2002). Analysis of Nd-isotopes gave model ages of Cadomian sedimentary rocks in a range of c. 1.8 to 2.0 Ga, demonstrating a strong cratonic clastic input into sediments caused by a recycling of the c. 2 Ga old Eburnean Basement of West Africa (Linnemann and Romer 2002). Glacio-marine deposits were discovered in the sedimentary rocks of the Cadomian Basement (Weesenstein and Clanzschwitz Groups) which witness a glacial period in the Upper Ediacaran (Linnemann et al. 2018). Such glaciogenic deposits place the palaeogeographical position of the Cadomian Basement to southern high latitudes, which is in line with the position of West Africa during late Ediacaran time and the appearance of upper Ediacaran tillites in the Anti-Atlas of Morocco (Vernhet et al.

Büchner, J. & Tietz, O. (2024): Volcanology and petrology of the Lusatian Volcanic Field. – In: Linnemann, U., Meinhold, G. & Röhling, H.-G. (Hrsg.): GeoSaxonia 2024 – GEOSCIENCES without borders. – Exkurs.f. und Veröfftl. DGG, 271: S. 45-54, 12 Abb.; Berlin

Volcanology and petrology of the Lusatian Volcanic Field

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Introduction

The Lusatian Volcanic Field (LVF) is situated at the northeastern end of the Ohře/Eger Graben (OEG) and represents a link to the eastwards occurring volcanic fields of the Fore-Sudetic Block in Poland. The OEG is an important volcanic sub-province of the Central European Volcanic Province (CEVP). The LVF is about 6100 km² large. The Meso-/Cenozoic volcanics of the volcanic field can be regarded as a link between the sub-province of the Ohře/Eger Graben in Bohemia and the volcanics in the North Sudetic Basin inclusive Fore Sudetic Block (Büchner et al. 2015). The LVF is bound by the České středohoří Mountains in the southwest, the Jičin Volcanic Field in the south and the volcanoes of Lower Silesia in the east (Fig. 1). In regional geological terms, it includes the volcanoes of the Lusatian Block (D, PL) and the Elbe/Labe zone (D, CZ). In geographical terms, it extends over the Lusatian Hills and Loessland, the Lusatian Mountains (Lužické Hory, CZ), the Zittau Mountains (D) and the Jizera Mountains (Jizerské hory, CZ; Góry Izerskie, PL). The LVF is located at the Poland-Germany-Czech Republic border triangle (Fig. 1). About 500 to 650 vents (volcanic centres) in more than 1000 volcanic outcrops can be assumed in the LVF.

The LVF spans several geotectonic units. The central part of the field lies within the Lusatian Block, and has been a continuous uplift area since the Upper Cretaceous by 92 Ma (Niebuhr et al 2020); it is composed

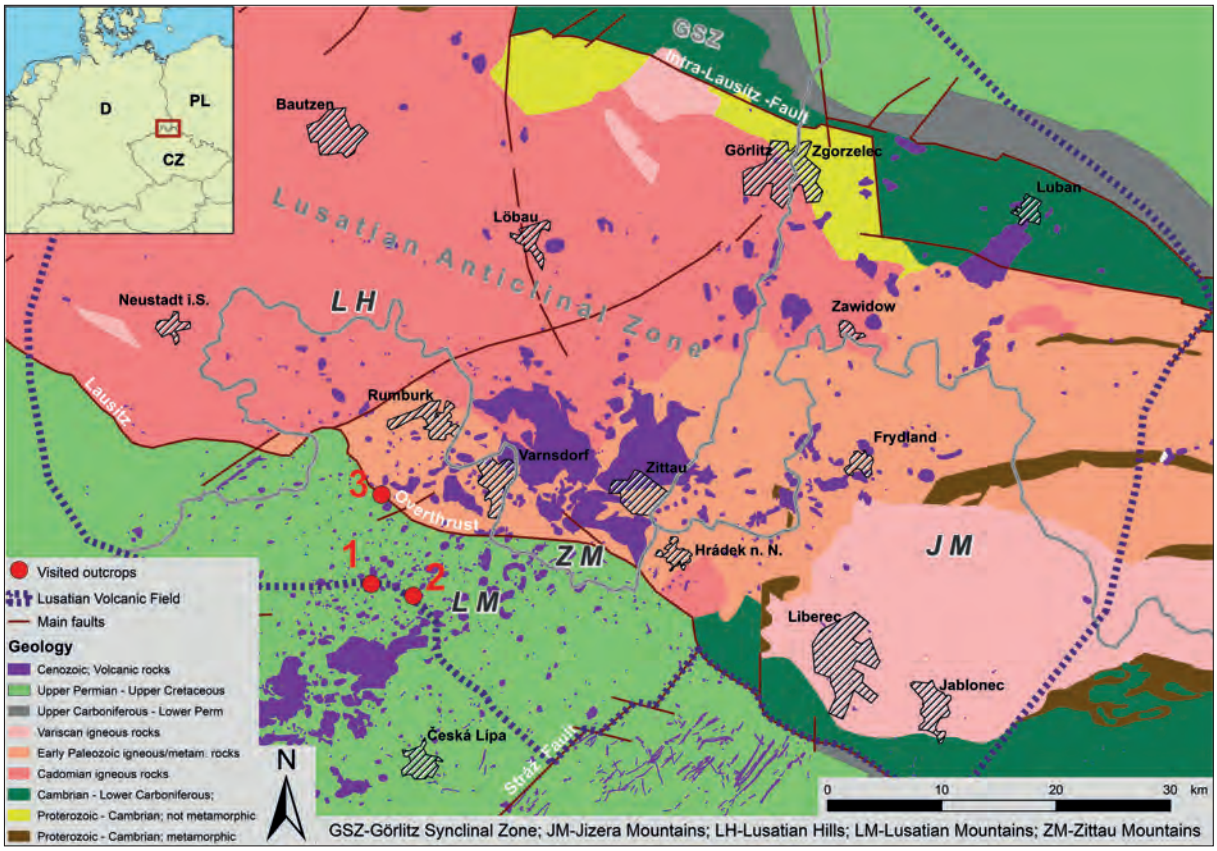

Fig. 1: Geological map of the Lusatian Volcanic Field. Red dots symbolize the stops of the field trip; 1 – Zlatý and Stříbrný vrch, 2 – Dolní Falknov, 3 – Vápenný vrch (Kalkberg, Maschkenberg) near Doubice. Map source: Saxony State Agency for Environment, Agriculture and Geology (LfULG).

Nagel, T., Kroner, U. & Keseberg, M. (2024): Tectonics of the Saxon Granulite Massif and the Erzgebirge, Northern Bohemian Massif, Central European Variscides (2 days). – In: Linnemann, U., Meinhold, G. & Röhling, H.-G. (Hrsg.): GeoSaxonia 2024 – GEOSCIENCES without borders. – Exkurs.f. und Veröfftl. DGG, 271: S. 55-68, 10 Abb.; Berlin

Tectonics of the Saxon Granulite Massif and the Erzgebirge, Northern Bohemian Massif, Central European Variscides (2 days)

Thorsten Nagel, Uwe Kroner und Martin Keseberg

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Introduction

The Saxon Granulite Massif and the Erzgebirge are two huge crystalline complexes exposed on the northern margin of the Bohemian Massif (Fig. 1.1). Although both complexes experienced high-pressure metamorphism during the Early Carboniferous, they differ significantly in lithology and preserved tectono-metamorphic history. The aim of the field trips is to present the main architecture of both areas and to discuss the tectono-metamorphic evolution in the light of existing data sets.

Day 1
Saxon Granulite Massif: Metamorphism – Timing – Tectonics

The architecture of the Saxon Granulite Massif

The Saxon Granulite Massif is an exotic, highly metamorphosed crystalline dome structure north-west of the Erzgebirge, surrounded and overlain on all sides by low-grade metasediments. The exposed part of the massif forms a 45×15 km ellipse with a NE-SW trending longitudinal axis. Except for a few river valleys cutting through the granulite massif, the area is morphologically unremarkable (Fig. 1.2). From the footwall to the hanging wall lithologies, the principal architecture can be described as follows (Fig. 1.3). i) The granulitic core consists mainly of strongly foliated felsic garnet-kyanite granulites, alternating in some areas with centimetre to metre thick layers of mafic garnet-pyroxen granulites and huge, partly serpentinised lenses of ultramafic rocks; ii) Sillimanite-bearing garnet-cordierite gneisses occur in close contact with completely recrystallised granoblastic sillimanite granulites and granitic melts; iii) Retrogressive shear zones occur in some parts of the roof characterised by strongly folded granulites, some of which are altered to ultramylonitic biotite gneisses; iv) Serpentinite-metagabbro unit in tectonic contact with ultramylonitised granulites; v) Isolated lenses

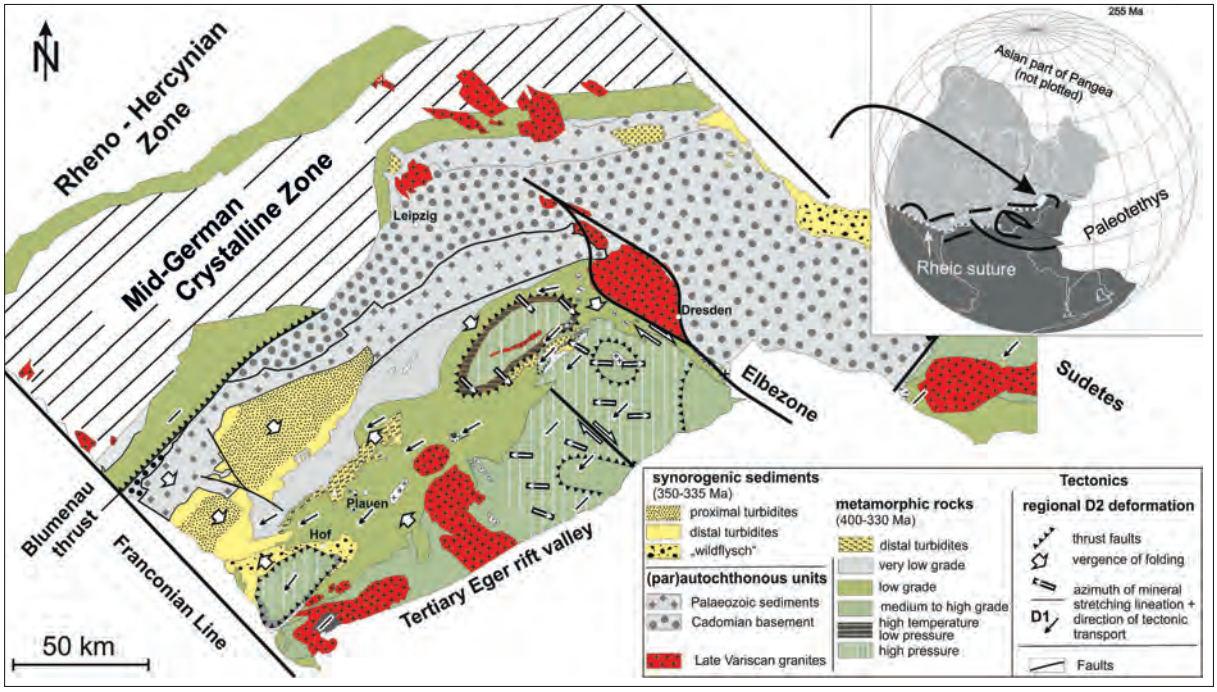

Fig. 1.1: Geological map of the Saxo-Thuringian Zone, modified after Kroner et al. (2007).

Wilmsen, M. & Niebuhr, B. (2024): The Cretaceous of Saxoniany – a fresh look at a classical geoscientific key area. – In: Linnemann, U., Meinhold, G. & Röhling, H.-G. (Hrsg.): GeoSaxonia 2024 – GEOSCIENCES without borders. – Exkurs.f. und Veröfftl. DGG, 271: S. 69-91, 17 Abb.; Berlin

The Cretaceous of Saxoniany – a fresh look at a classical geoscientific key area

Markus Wilmsen und Birgit Niebuhr

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Abstract: The integrated stratigraphy and depositional environments of the Saxonian Cretaceous (Elbtal Group, Cenomanian to Middle Coniacian) are detailed in a NW–SE transect from distal to proximal settings by visiting selected outcrops. The sediments of the Elbtal Group accumulated in a basin at the northeastern margin of the Mid-European Island. In terms of lithofacies, the Elbtal Group comprises fluvial and marine sandstones, Pläner, marls and marly limestones that have been deposited – after the levelling of the Cenomanian pre-transgression topography – in response to changing hydrodynamic conditions on a grain-size graded shelf. The Cenomanian transgression history in the Dresden area is the topic of stops 1 and 2, including observations on distal marl and Pläner deposits. In the remaining stops 3–6, the excursion route is palaeogeographically onshore-directed, focussing on the proximal sandy lithofacies in the Elbsandsteingebirge. The rich macrofossil content of the Elbtal Group allows a detailed biostratigraphic subdivision of the succession while sea level-controlled sedimentary unconformities form the basis for sequence stratigraphic correlations. Relationships between stratigraphy and geomorphology are also discussed.

Introduction

In the Elbtal between Meißen and the border with Czechia, sedimentary rocks of the lower Upper Cretaceous are very well exposed in Saxony (Germany). In the northwestern Elbe Zone, marls and Pläner of the open marine environment occur while the Elbsandsteingebirge in the southeast is characterized by thick-bedded successions of Quader sandstones. A transitional facies between Pirna and Königstein mediates between the two principal facies areas, in which massive sandstones alternate with thinner fine-grained sediments such as marls or silty clays. The Elbtal Group occupies an important mediating position between the deposits of the temperate Boreal in the north (e.g., North German limestone and chalk deposits) and the Tethyan warm water deposits in the south. It also shows strong litho- and biofacies relationships to contemporaneous deposits and faunas of the Bohemian Cretaceous Basin in the southeast. The Elbtal Cretaceous is a classic region of "geognostic" research in Germany and has been stratigraphically, sedimentologically and palaeontologically studied in detail by geoscientists for more than two centuries. The focus of the excursion is on stratigraphy, palaeontology, litho- and biofacies as well as on the depositional environments of the Elbtal Group.

Geological overview

The Saxonian Cretaceous Basin (SCB) is located at the northeastern margin of the Bohemian Massif, which forms part of the large Mid-European Island (Fig. 1). In the area between Meissen, Dresden, Pirna, the eastern Erzgebirge and the Saxonian Switzerland, sedimentary rocks of the lower Upper Cretaceous (Lower Cenomanian to Middle Coniacian, ca. 100–87.5 Ma; Wilmsen et al. 2022; Niebuhr 2023; Niebuhr & Wilmsen 2023a) are very well developed. Lithologically, thick-bedded marine quartz sandstones (Quader sandstones), Pläner (planar-bedded marly siltstones to silty marlstones), marls and marly limestones predominate; continental sedimentary rocks, such as carbonaceous-argillaceous siltstones, immature sandstones and conglomerates, also occur locally in former palaeovalleys. These strata are lithostratigraphically combined in the Elbtal Group (Voigt & Tröger in Niebuhr et al. 2007; Niebuhr et al. 2020a; Niebuhr 2023; Niebuhr & Wilmsen 2023a). The Elbtal Cretaceous opens to the southeast into the much larger Bohemian Cretaceous Basin (BCB) on Czech territory; to the northwest, the SCB grades into the broad North German Cretaceous shelf.

Due to the onset of inversion tectonics in the Middle Turonian, the Saxonian Cretaceous is stratigraphically divided into two parts: the sediments of the Lower Cenomanian to Lower Middle Turonian (lower Elbtal Group) were mainly derived from the Erzgebirge in

Kugler, J. & Kehrer, Ch. (2024): The Freiberg training and research mine in the former Himmelfahrt mine field. – In: Linnemann, U., Meinhold, G. & Röhling, H.-G. (Hrsg.): GeoSaxonia 2024 – GEOSCIENCES without borders. – Exkurs.f. und Veröfftl. DGG, 271: S. 92-93, 1 Abb.; Berlin

The Freiberg training and research mine in the former Himmelfahrt mine field

Jens Kugler[1] und Christin Kehrer[2]

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[2] TU Bergakademie Freiberg, Geowissenschaftliche Sammlungen, Brennhausgasse 14, 09599 Freiberg, christin.kehrer@geosamm.tu-freiberg.de

The Freiberg educational and research mine comprises the active mines "Alte Elisabeth" and "Reiche Zeche". Both mines have been part of the UNESCO World Heritage Site Erzgebirge/Krušnohoří Mining Region since 2019.

The underground mines are currently used by the TU Bergakademie Freiberg for research and educational purposes. The "Förderverein Himmelfahrt Fundgrube Freiberg/Sachsen. e.V.", founded in 1992, enables the mine to be used for tourism. As part of the 4th Saxon State Exhibition, the area near the shaft of the "Reiche Zeche" at the level of the first level was newly developed for tourism in 2020. This includes newly installed lighting and multimedia stations. Visitors of the state exhibition could choose between a touristic discovery tour and a research tour.

Extensive renovation and reconstruction work is currently underway in the educational and research mine up to the level of the water-bearing Rothschönberger Stolln.

Since the 19th century, the Himmelfahrt mine has developed into Saxony's most important ore mine with a workforce of almost 2,900 miners. The mine is located in the centre of the mining and industrial landscape, which has existed since the 12th century. Mining in Freiberg began in 1168 and most of the preserved spoil tips and historic mining buildings date from the 19th and 20th centuries. The mining industry formed the starting point for the later industrialisation of the region. The educational and research mine has preserved numerous artefacts from the mining history and mining operations.

The Himmelfahrt Fundgrube developed into a large integrated mine under various names. The starting point for this development was the Abraham shaft. From the second half of the 19th century, the mine area expanded considerably and extended as far north

Fig. 1: Shaft tower at the Reiche Zeche shaft (Foto: Jens Kugler).

Massanek, A. & Kehrer, Ch. (2024): The Geoscientific Collections of the TU Bergakademie Freiberg. – In: Linnemann, U., Meinhold, G. & Röhling, H.-G. (Hrsg.): GeoSaxonia 2024 – GEOSCIENCES without borders. – Exkurs.f. und Veröfftl. DGG, 271: S. 94, 1 Abb.; Berlin

The Geoscientific Collections of the TU Bergakademie Freiberg

Andreas Massanek und Christin Kehrer

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The Geoscientific Collections of the TU Bergakademie Freiberg are among the most extensive, most important and oldest collections of their kind in the world. They are divided into six thematic sub-collections: mineralogy, petrology, geology of deposits, palaeontology, stratigraphy and fuel geology.

The Institute of Mineralogy, the Werner Building, houses the collections on mineralogy, petrology and the study of deposits. The mineralogical collection currently comprises approximately 100.000 specimens, of which only 5% can be shown in the exhibition. The exhibition consists of the following parts: Systematic collection (crystal chemistry classification), regional collection (mainly Central Germany) and special showcases (including gemstones, meteorites and tektites, crystallography, organic minerals and amber, silicified wood). Among the most valuable historical items in the mineralogical collection are the original specimens from the mineral discoveries of Werner, Breithaupt and Weisbach, the Werner bequest comprising around 10.000 specimens and the famous meteorite from Rittersgrün.

The deposit collection comprises more than 130.000 ore and rock samples. The Historische Freiberger Reviersammlung, an unparalleled collection of gangue documentation from the period 1820 to 1913, is an extraordinarily valuable collection. A special collection from the abandoned uranium ore mining in the Ore Mountains is also of historical significance. Among the most important new additions to the deposit collection are numerous specimens collected on large excursions from deposits in Scandinavia, South Africa, Namibia, Zimbabwe, Spain and Peru.

In 1958, the rocks were separated from the deposit collection and reorganized in the petrological collection (40.000 pieces). The collection is presented in a separate room according to the origin of the rocks.

All collections are constantly being completed, so that a selection of the new additions from the past year can always be seen in the collection foyer of the Werner Building. In addition, the themes of the special exhibitions, which usually change every year, invite you to visit the collection.

Fig. 1: Foyer of the Geoscientific Collections in the Abraham-Gottlob-Werner-Building (Photo: Hartmut Meyer, Lollar).

Massanek, A. (2024): Terra mineralia in the Freudenstein castle. – In: Linnemann, U., Meinhold, G. & Röhling, H.-G. (Hrsg.): GeoSaxonia 2024 – GEOSCIENCES without borders. – Exkurs.f. und Veröfftl. DGG, 271: S. 95, 1 Abb.; Berlin

Terra mineralia in the Freudenstein Castle

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The terra mineralia is a mineralogical exhibition at the TU Bergakademie Freiberg in the Freudenstein Castle. The basis of this exhibition, which opened in 2008, is the private collection of Dr. Erika Pohl-Ströher. The Swiss woman was the main shareholder of the Wella Group and grew up in the saxonian Vogtland area. She studied chemistry and biology in Jena and also received her doctorate there. Over the course of her life, she built one of the world's largest private mineral collections. From an aesthetic point of view, she has collected minerals from current and classic sites. The Pohl-Ströher Mineral Foundation was founded in 2004 and a large part of the collection was transferred to it. These minerals are now on permanent loan at the TU Bergakademie Freiberg. One of Dr. Pohl-Ströher greatest wishes wanted to use the new exhibition to get more young people interested in natural and geosciences.

The concept of the exhibition is a mineralogical journey around the world. That's why the objects worldwide are arranged according to continents, countries, regions and deposits or locations. This was the best way to reflect the character of the collection. The focus is on minerals from Romania and the former Soviet Union, Namibia, Morocco and South Africa, China, Afghanistan, Pakistan and India, Australia, USA, Brazil, Peru and Mexico. As is usual with a trip around the world, you can take detours from the trip and receive information on additional focal points. There is a little extra tour in every room: In America there is a journey into light, where you can learn something about luminescence. In Asia, visitors travel between dimensions with Gulliver. There is a time travel experience in Europe where visitors can learn about the different uses of minerals throughout human history. In Europe, the most important ways in which minerals are formed are presented on the journey to the origin. Finally, visitors encounter extraterrestrial objects that hit our earth as travelers from outer space.

The exhibition shows around 3,500 minerals, gemstones and meteorites from all over the world.

Fig. 1: Beryl, variety aquamarine with muscovite and orthoclase, Virgem da Lapa, Minas Gerais, Brazil. 20 × 12 cm (Photo: Jörg Wittig, Dresden).

Massanek, A. (2024): The Mineralogical Collection of Germany. – In: Linnemann, U., Meinhold, G. & Röhling, H.-G. (Hrsg.): GeoSaxonia 2024 – GEOSCIENCES without borders. – Exkurs.f. und Veröfftl. DGG, 271: S. 96, 1 Abb.; Berlin

The Mineralogical Collection of Germany

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Due to the federal structure, there are a large number of state and university collections in the mineralogical field in Germany, but no collection that has the character of a national mineralogical collection. In 2008, the terra mineralia exhibition opened in Freudenstein Castle in Freiberg. Based on the concept of terra mineralia, a mineralogical trip through Germany was planned.

For this it was necessary to create our own premises. Fortunately, the so-called Krügerhaus was located right next to Freudenstein Castle for this project. However, with the objects from the Pohl-Ströher Mineral Foundation alone, it would not have been possible to transfer a similar concept of the terra mineralia to the Krügerhaus. In order to realize this, it was necessary to acquire many other high-quality minerals, which are primarily in private hands and in other museums. In Germany there are hundreds of associations of mineral collectors with several thousand members. For a mineralogical national collection, it therefore made sense to call on these collector groups to participate in the construction of the exhibition with their own objects. For this purpose, a foundation was established where collectors can contribute their minerals as individual objects or entire collections. In the first ten years, more than 100 collectors gave well over 600 minerals to the foundation.

The exhibition opened in the Krügerhaus in October 2012. Minerals from the most mineralogically interesting sites in Germany are presented on three floors, sorted by geographical region. These are for instances the Saxonians Ore Mountains, the Granulite Mountains, Thuringia, the Harz Montains, the Weser Hills, the Ruhr area, the Siegerland and Westerwald, the Bergisches Land, the Black Forrest, Palatinate, Saarland and Bavaria. Deviating from this regional structure, there is a room on each floor where you can get additional information.

Fig. 1: View into the room with minerals from the Sauerland region in North Rhine-Westphalia (Photo: Werbefotografen Dresden).