ProGEO
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NEWS
NO. 3 2014

On the 29th of August 2014 a fissure eruption started in Holuhraun about 10 km north of the Vatnajökull glacier, Iceland. When this is written the eruption is still ongoing. The eruption is within the Bárðarbunga volcanic system, which is the largest volcanic system in Iceland. It is centered on a large central volcano with a caldera beneath the northwestern part of the Vatnajökull glacier. Continuous earthquake activity has been observed in the area since August 16th with the strongest earthquakes occurring in the caldera. Strong air pollution from the eruption, mainly sulfur dioxide, has been measured all over the country.
Photo: Kristján Jónasson

The VIII International Symposium of ProGEO in Reykjavík, Iceland – September 2015

GEOCONSERVATION STRATEGIES IN A CHANGING WORLD

The VIII International Symposium of ProGEO on the Conservation of the Geological Heritage will take place on September 8-12, 2015, in Reykjavík, Iceland, at Hotel Natura.

The main aim of ProGEO is to promote the conservation of Europe's geological heritage, including its rich heritage of landscape, rocks, fossils and mineral sites. The symposium will discuss strategies to meet this aim through issues that benefit and strengthen geological conservation from different angles.

The main themes of the Symposium will be linked to four key questions:

- How to secure integrity of geosites under threat?
- What is sustainable use of a geosite?

- Is mining and quarrying compatible with geoconservation?
- How to incorporate geological heritage in Environmental Impact Assessments?

This involves a broad basis of concepts such as geodiversity, geoconservation, geoheritage, geosite definition and selection, landscape, landforms and physical processes, local and global strategies, geoparks, international cooperation, geotourism, education and interpretation. Poster sessions will be open to presentations beyond the four main questions.

Authors of selected presentations will be invited to submit complete papers for a special volume of the journal Geoheritage.

A workshop in the form of a round table discussion will address how we can incorporate geological heritage in international cooperation.

During the symposium, ProGEO will have its regular General Assembly and a Council meeting.

Two optional field trips are planned:

- Pre-symposium one-day field trip to the Reykjanes Peninsula on the 8th of September. The Reykjanes Peninsula is the inland continuation of the Mid-Atlantic Ridge and a part of the Icelandic rift zone. The area is characterized by Weichselian and Holocene volcanic landscapes, displaying hyaloclastites, lava fields, crater rows, geothermal activity etc.

The main crater in Holuhraun. The eruption started on a fissure with several craters, but is now confined to a single crater. Photo: Kristján Jónasson

- Post-symposium two-day field trip in South Iceland on the 11-12th of September. The South Iceland field trip goes through the Eastern Volcanic Rift Zone, where some of the most active volcanoes are located, such as Katla, Eyjafjallajökull and Hekla. In this area, the volcanic geodiversity is characterised by subglacial volcanic formations, craters and lava fields, geothermal areas and glaciers. The field trip will stretch into the highlands of Iceland, where the view and the landscape are spectacular.

The 1st circular will be published on the 1st of November, and the on-line registration will be opened at the same time. Information will be found at the ProGEO website: www.progeo.se.

For the two day field trip that is now under preparation, the plan is to give the symposium guest a glimpse of the Icelandic highlands. One of the sites we plan to visit is Veiðivötn, in the southern part of the Bárðarbunga volcanic system. A fissure eruption occurring in Veiðivötn in the year 1477 is one of the largest eruptions after the settlement of Iceland. Photo: Lovísa Ásbjörnsdóttir

One day in Thethi geopark, Albanian Alps

ProGEO-Albania: Annual Geotrip – 2014

Afat Serjani, afatserjani@gmail.com.

The call for this geotour in Albania was accompanied by a short presentation of ProGEO, its activity in Albania and how membership of ProGEO can be obtained.

The aim of the geotour was complex:

- It should be a professional trip in the Thethi Geopark in the Albanian Alps and
- increase the participants knowledge of geosites, landscapes and cultural traditions of Thethi region,
- demonstrating the glacial, karst and erosion processes in Albanian Alps as well as
- the nature and the environment protection of the region.

The Thethi geopark is located in the highest part of the Albanian Alps. This area was chosen together with my colleague Adil Neziraj. Our colleague and co-leader in ProGEO Merita Dollma sent out invitation to relevant geographers from Tirana, Durresi and Korca Universities, and geologists from the Geological Survey of Albania, organized and led the tour which had 40 participants.

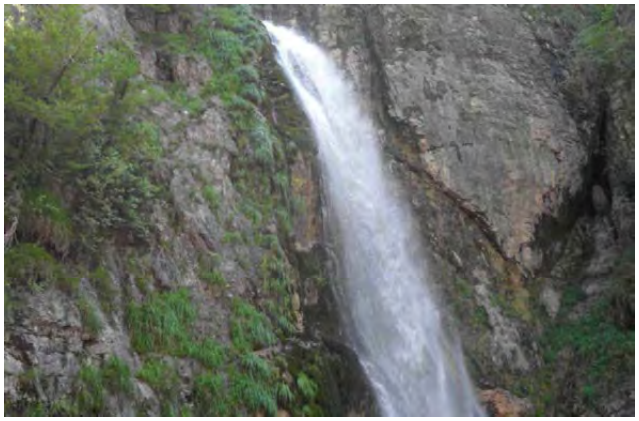
The trip was in the end of June and started Tirana to Shkodra, Kopliku and to the Thethi Geopark in late evening. Here the landscapes of Thethi Valley and high mountains around was demonstrated including the Thethi waterfall and canyon.

Participants on Thore's Pass, view to the west

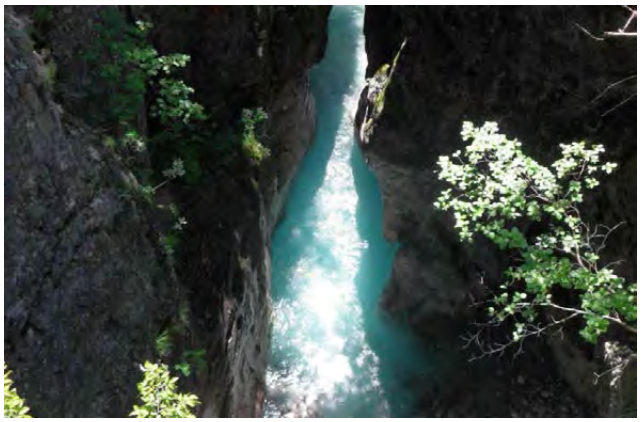
Visiting local habitants

From the town of Kopliku the climbing up to Albanian Alps started. The road crosses carbonate formation of the Triassic, Jurassic and Cretaceous geological periods in picturesque, mountainous landscape settings. The road to the tourist village of Boga passes along the Boga long Valley between the Livadhi (2 494m), Raba (2 222m), and Bridashi (2 128m) mountains. On both the green slopes of the Boga Valley, there are shrub plants with predomination of hazel trees and junipers, beach forests, and alpine pastures above them.

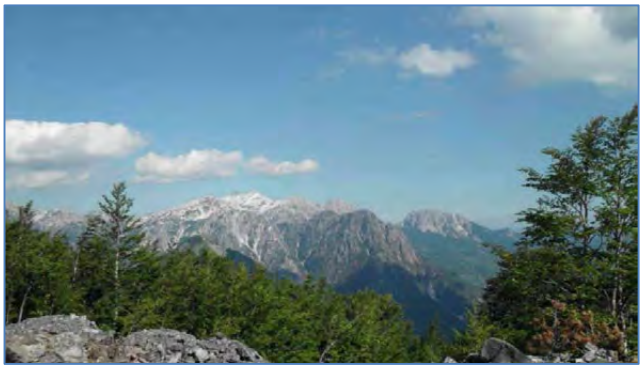
The Boga Valley



The Thethi waterfall (lower part)



The Thethi Canyon



The Thore's Pass, view to the east

The Thethi Valley (Okoli, north). To the north rises the Radohima peak (2 568masl).

In this Valley there are some rare, endemic plants, and in the mountains around "The heart medicine" or "Sanza", a medical plant for blood veins and breathing organs grows. It is said, that it was discovered of about 2 200 years ago, during the Gent, Ilyrian King times, and since that time named Gentiana Lutea. Here, in Boga, there are big karst springs and several cultural objects such as the Sant Mehilli Church, 450 years old, where people every year in September, organize celebrations and pilgrimages.

We continued to the east, between the Bridashi and Omeku peaks in the north and the Helmi mountain in the south. The curving road cuts through Jurassic limestones with a lot of bituminous veins, lenses and nets. The geological setting is the contact between the Malesia e Madhe subzone and the Valbona Subzone. Just in this tectonic contact bituminous rocks outcrops.

Climbing up to the Thore's Pass at 1 700m above the sea level was an astonishing surprise view was revealed itself. Surrounded by high mountain peaks (2 200-2 500M above the sea level) of dry, white carbonate rocks, with snow remains, separated by deep, narrow and green valleys the landscape of the Thore's Pass are not easily forgotten. After this point a narrow, dangerous road to Thethi continues at the same level, on bedded carbonate formation of the Triassic, with black limestone with megalodonts and stromatolites, and with dolomite beds up to the Zogji Peak ((1 662.0m.). From here the road curves down to the Thethi Valley (600m above the sea level) with the Thethi Village trough the Okoli slope with a thick, high beach forest.

The morning in Thethi was another astonishing experience. It is like a large mountainous amphitheatre surrounded by green slopes covered by plants and the white, carbonate mountains above. These high slopes are quite bare formed by glacial, karst and erosion processes. To the north, the Radohima Peak (2 568.30m) rises.

The path to the Thethi waterfall and canyon was interesting. The River has very clean, in some places blue water. The Church and reconstructed old houses as towers, astonish with their features and originality. Tourist attractions were well signposted. The Thethi waterfall is a rare and nice geological site. The white, foamy water fly down of about 100m, but the best part is its lowest 40m.

After visiting the waterfall, we got down to the Thethi Canyon. Here, the Thethi River crosses limestone rocks in a very narrow (of about 3-5m wide) and deep canyon.

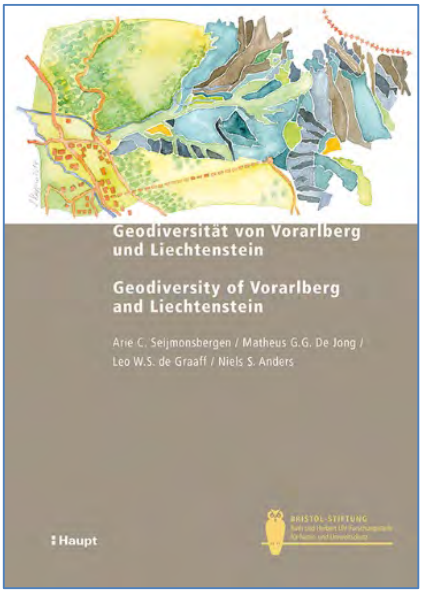
The Thethi River

The Thethi area is known as a natural park since 1962, when it was proclaimed as National Park by Decision of the Council of Ministers. During the last years it is included in the ''Balkan Peace Park''. It is very important to understand that Thethi, is not a simple National Park, but also a Geopark. The Thethi Valley with its forests and fauna, together with geological sites constitutes an important area of high geoecotourist value for the Malesia e Madhe, and Shkodra Districts and in general, for Albania. The main geosites of this Geopark are: the Thethi waterfall, the Thethi canyon, the Thethi, Lugu i Runices and Kartarakti caves, the Okoli springs, the Ship's path, Peja and the Bishkaja Passes. Almost, all above mentioned geosites are included in DCM Nr. 676, dt. 20.12.2002: ''Protected areas as monuments of the Albanian Nature''. In a biodiversity aspect species like *Vulfenia Baldaci* in the Ship's Pass, *Crecus Dalmati* in Radomira are important. Fauna is represented by species such as the wild Chamois (*Rupicapra rupicapra*), the Wild Cat (*Felis sylvestris sylvestris*), and 40 kinds of birds.

The Thethi Geopark is known for its natural values of high, beautiful mountains full of glacial cirques and moraines, erosion pyramids, karst caves and karst fields, canyons and cold water springs. The climate is reconed to have curative effect which also draw tourist to the area.

The Austro-Hungarian geologist Ferenc Nopscha has published classical works on the geology of the Albanian Alps and the Thethi Valley and classical descriptions of people and traditional customs was described by Miss Durham from England likewise more than a century ago. Many geographic publications exist from the Kelmendi Highland and Albanian Alps by Kole Progni, and a lot of other colleagues, geologists and geographers. In general, the Albanian Alps constitute a large field for studies and exploration by specialists of the Earth Sciences.

The Participants at the foot of the waterfall.



Geodiversity of Vorarlberg and Lichtenstein – a review

Dušan Mijović, e.mail: miyo@sezampro.rs

The monograph Geodiversity of Vorarlberg and Lichtenstein by A. Seijmonsbergen, M. De Jong, L. de Graaff and N. Anders is a truly systematic analytical approach to the geodiversity of the western and eastern Alps borderland. The authors chose to research and identify geomorphological features, occurrences and processes in mountainous areas. Like biodiversity that varies in vertical distribution and has its zoning, the present landforms have been produced by differential processes as well.

The authors consider theoretical postulates and research methods through nine chapters and describe geodiversity sites in municipalities and the Rhine valley of the study area, and propose potential conservation sites. The monograph also includes Names and five Maps.

General qualities of this valuable monograph are good presentation of the history of research, theoretical considerations with many definitions and a table of compared classical versus computer-generated approaches to the geomorphological mapping. The latter approach connotes digital collection of georeferenced data that provides scale-independent information in its most advanced form. The adopted morphogenetic classification scheme can be used to delineate and identify a morphogeological unit on the symbol- and colour-based classical map. This was used to divide geomorphological processes (glacial, fluvial, mass movement, periglacial, organic, karst, aeolian, and anthropogenic) into nine groups, and water separately. A novelty in the approach is the term geodiversity cluster for a group of high-relevance landforms that occur in a group of polygons of the same morphogenetic type or an association of polygons of different morphogenetic types.

The methods of research come down to the analysis of landforms or processes from the aspects of scientific relevance, frequency of occurrence, disturbance and environmental vulnerability. On the basis of this criterion, with the scientific relevance and frequency of occurrence having the dominant weight in the assessment approach, landforms are selected as the prospective geomorphosites. The vulnerability and disturbance, though less significant for evaluation, have a corrective role where the protection is assessed and land use considered in regional planning. The authors believe that their study should be used in the land-use planning and as a basis for protection of the geosites selected as natural monuments.

I am recommending this monograph as a good example of how geomorphological diversity should be assessed, or as a model for updating a geomorphological map with new occurrences and processes, prospective development, and also for better understanding of mountainous areas and morphological peculiarities of Vorarlberg and Lichtenstein. The monograph Geodiversity of Vorarlberg and Lichtenstein will be sufficiently encouraging for future researchers in the geo conservation of Alpine landscapes and landforms to take trouble over conservation of the geodiversity in order to provide conditions for the survival of biodiversity in the natural habitat.

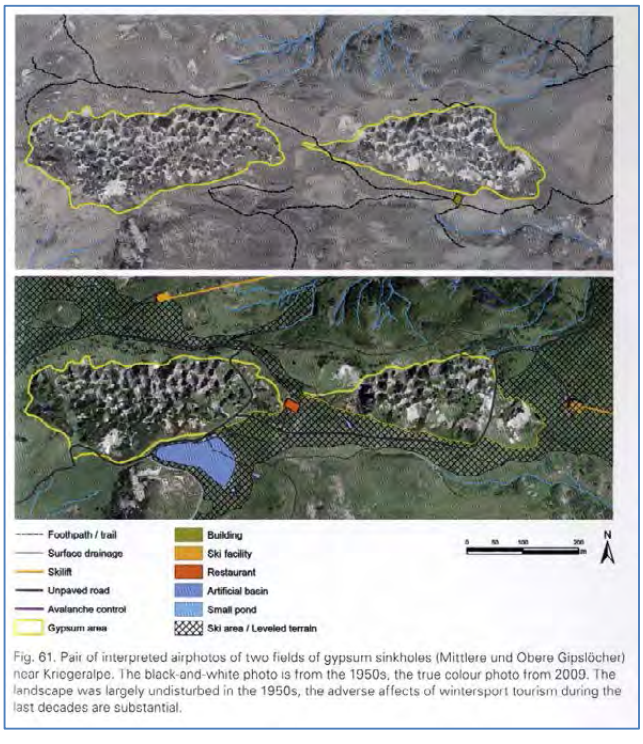


Fig. 61. Pair of interpreted airphotos of two fields of gypsum sinkholes (Mittlere und Obere Gipslöcher) near Kriegeralpe. The black-and-white photo is from the 1950s, the true colour photo from 2009. The landscape was largely undisturbed in the 1950s, the adverse affects of wintersport tourism during the last decades are substantial.

The course of river Bjurälven follows in part a thin limestone horizon. The water runs partly over and partly below ground due to the karst weathering of the limestone beneath, where a system of water filled caves and tunnels have developed. Due to undermining of the quaternary sediments on top, the landscape in the valley is very dynamic and ever-changing. Photo Rolf Engh.

Swedish Geoheritage Site 2014

Gunnel Ransed, email: Gunnel.Ransed@sgu.se

A couple of days ago we celebrated the winner of the title Swedish Geoheritage Site 2014, the Bjurälven karstic landscape, a site situated on the border between Norway and Sweden in the Scandinavian mountain range. The karstic landscape along the river Bjurälven is one of the finest in Scandinavia and has been developed within thin Silurian limestone horizons, folded during the Caledonian orogeny.

Swedish Geoheritage Site 2014 is an award given by the Geological Survey of Sweden (SGU) in order to highlight and promote attractive sites with an exciting geological story. In this manner we aim to attract interest to geology in general, to the geological heritage, and to good examples how to manage them. Some of the nominated sites are already well known to the public, while others are quite unknown. However their shared capacity is that they have something important to tell us about why our part of the world looks the way it does.

Ten sites were selected by the Survey, among many more proposed by an interested public consisting of geologists as well as non-geologists. The nominated sites were presented with a popular description and pictures on the SGU web site during the summer. The public was invited to cast their vote on their favorite, a voting procedure that ended at the Day of Geology in September with a major promotion event. The winner was then selected by a specially invited jury among the five candidates that got the most public votes. The jury consisted of high-level representatives from national authorities, universities, industry and other related organizations.
This was the second time the award Swedish Geoheritage Site was announced. The first time was in 2012, and it was co-ordinated with GeoArena, a conference arranged by the Survey in order to strengthen and create

The water discharge shows seasonal changes, making good opportunities during low water periods to walk along the river channel. Photo Eva Näsman.

networks for everyone concerned or working with geological issues. The concept for the Geoheritage Site-arrangement has been quite the same both times; ten candidates were selected to show both geological diversity and geographical distribution within Sweden. The criteria have been: The sites shall illustrate a part of the geological history, an event or process that can be put into relation t o a m ajor g eological p erspective. T he s ite should be inspiring to the imagination and to learn more about geology. Another criteria is that the site shall be continuously accessible to visit, and relatively accessible by means of transportation.

Although only one of the sites gets the award, we consider all the selected candidate sites as winners since they all deserve attention for their fantastic geoheritage value and as exciting places to visit. Some of them are protected being part of a na tional park or a nature reserve. Others are only known to people that have specific interests in geology.

SGU wishes that the award contributes to the promotion of geology to a wider public and that the geological

The price ceremony was held in Uppsala. Happy receivers of the price are here the Municipal manager Anders Andersson and the nature guide Gunnel Fredriksson, who together with speleologist Rolf Engh and geologist Åse Wästberg were the nominators of the winning site. The price was handed over by Lena Söderberg , the Director General at the Geological Survey of Sweden.

perspective of the sites will be enhanced in the marketing of them as attractions. We also hope to contribute in promoting some of the sites t hat need conservation measures, but do not yet have it.

Finally, but perhaps most important, we want to encourage the local enthusiasts and others that are working with marketing our geoheritage in a sustainable way in their own area.

All the candidates from 2012 are presented in the ProGEO facebook, as Geosites of Sweden (June 2014). The Geoheritage Site price was in 2012 awarded to the millstone mine Minnesfjället in southern-central Sweden. This closed mine is one of the few places where it is possible to see the contact zone between the sub-Cambrian peneplane formed in Precambrian crystalline rocks and the oldest Cambrian sedimentary deposits from below. The site is well known for showing early life and palaeoenvironments. It also forms part of the mining history in Sweden. Photo: Jens Lundgren and Tor-Gunnar Beiron (inset).

Earth Heritage, the UK's geological and landscape conservation magazine, is available in downloadable electronic format at www.earthheritage.org.uk. The magazine showcases geodiversity conservation and promotional activities and is published twice a year, in late winter and late summer. Back issues are also available.

Deadline next issue of ProGEO NEWS: December 12th. 2014

Please do not forget to send contributions to ProGEO NEWS. Members are interested in things that happen all over the world, your experiences, geosites, everyday geotopes and landscapes, geoconservation and geotourism efforts! ProGEO news is published on the internet

www.progeo.se

Please send your contributions 500 – 2000 words with photographs, maps and figures clearly marked as a ProGEO NEWS contribution to:

lars.erikstad@nina.no

If longer texts are needed, please contact the editor

ProGEO: European Association for the Conservation of the Geological Heritage. ● **Address:** Box 670, SGU, SE-751 28 Uppsala, Sweden. ● **Treasurer:** Sven Lundqvist. ● **Bank:** SWEDBANK, SE-105 34 Stockholm, Sweden. Swiftcode: SWEDSESS. **IBAN**: SE91 8000 0838 1613 7672 5782. ● **Membership subscription:** personal: € 50 (including GEOHERITAGE subscription), 25/yr.(without journal subscription), institutional: €185/yr. ● **President:** José B. R. Brilha, Earth Sciences Department, University of Minho, Campus de Gualtar, 4710-057 Braga, PORTUGAL. ● **Executive Secretary:** Lars Erikstad, NINA, Gaustadaleen 21, NO-0349 Oslo, Norway. **ProGEO NEWS** - A ProGEO newsletter issued 4 times a year with information about ProGEO and its activities. Editor: Lars Erikstad, NINA, Gaustadaleen 21, NO-0349 Oslo, Norway, Phone: + 47 91 66 11 22, Fax: +47 73 80 14 01, e-mail: lars.erikstad@nina.no. Contributions preferred by mail (Unformatted Word- or ASCII-format).

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