



From the excursion in the surroundings of Edinburgh, early November 1999. A raised coastal cave with high geological and archaeological value now experiencing subduction due to old coal mining. Should coastal defence be build to protect the site, or should marine processes once again dominate?.
Photo: Sylvia Smith-Meyer



**Earth Science and
the Natural Heritage**

Interactions and Integrated Management

This conference organised by Scottish Natural Heritage was held at the Dynamic Earth centre in Edinburgh, 4-5 November 1999.

The need to protect the most important geological and geomorphological sites is widely recognised. However, Earth heritage conservation is about much

more than site protection, and the agenda in Scotland has moved forward. Rocks landforms and soils form an integral part of our natural heritage. They have formed our distinctive landscapes and scenery. Together they provide the basis for the diversity of our natural habitats and the species they support. The actions of physical processes on our mountains, rivers, coasts and soils produce habitat changes and affect ecological processes. These physical processes also impinge on human activities through flooding, coastal erosion and soil erosion, with attendant economic and social costs. The significance of these wider links is now particularly relevant in view of current interest in sustainable use of



The largest industrial limestone burner complex in Europe was also visited . The industrial heritage was well integrated with the geological heritage due to local awareness and efforts.

Photo: Sylvia Smith-Meyer

sised throughout the meeting. At one level, there was a need to improve the level of understanding of planners, decision makers and their advisors about landscape sensitivity and about the benefits of sustainable approaches through the use of appropriate demonstration projects. At another level, the value of raising public awareness through geotourism initiatives and the

natural resources, landscape interpretation, geotourism and integrated management. It was therefore timely to address not only the broader links of the Earth sciences to ecosystems and landscapes, but also the practical value of the Earth sciences in resource management, land management, local authority planning, environmental education and geotourism. This conference brought all these issues together under the common focus of sustainable management of our natural heritage.

provision of educational materials for schools was clearly demonstrated with examples from Scotland, Ireland and Canada.

The conference was followed by a field excursion to Fife, north of Edinburgh. The purpose was to demonstrate management issues discussed during the conference. These included management of coastal erosion, quarry restoration and geological interpretation which incorporated aspects of industrial and cultural heritage.

The conference opened with an inspiring keynote address by Aubrey Manning, in which he examined the interdependencies between biological and Earth systems at a global scale. Presentations on the geological inheritance of Scotland emphasised the important links with landscape, the scientific value of Scotland's geodiversity and the impact of climate change and geomorphological processes during the Quaternary. The links between Earth science, biodiversity and the natural heritage were then examined in relation to montane landscapes, freshwater environments and the coast. A series of presentations developed the theme of sustainable management in relation to minerals use, soils, management of rivers and coasts, climate change and energy. Issues raised were later discussed in more detail in parallel workshops. Among the key points to emerge were a need for more integrated management based on a better understanding of landscape sensitivity and working with, rather than against, natural processes. The importance of greater awareness was empha-

Copies of the abstracts will be available on the SNH web site at <http://www.snh.org.uk> The proceedings of the conference are being prepared for publication.

John Gordon



Demonstration of quicklime for use as mortar in restoration, by Scottish Lime. Photo: Sylvia Smith-Meyer



From the President:

Dear ProGEO Members and Friends

I have just arrived home from the ProGEO International Symposium in Spain. There I met many of you, many new faces as well as old friends. All participants were happy to attend a very well organised Symposium. We will publish much more information about it in the next ProGEO News issue, but nevertheless I would now like to thank very much our Spanish friends who invested a lot of time, efforts and funds in the meeting.

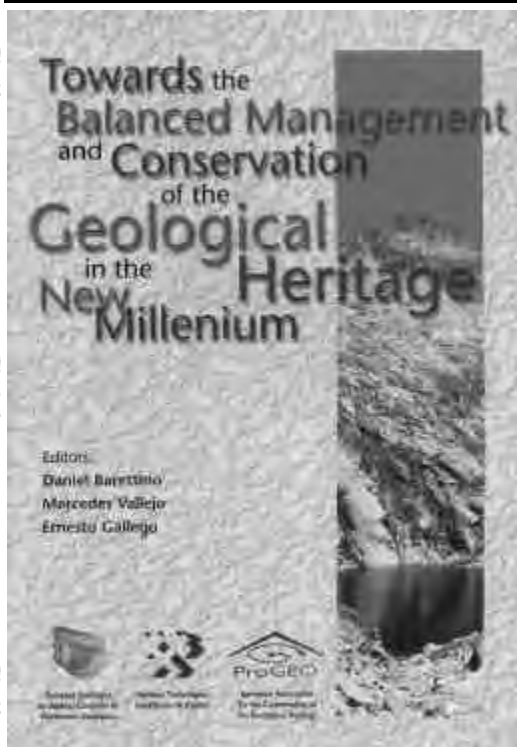
The 3rd International ProGEO Symposium brought together about 160 participants from practically all European countries plus New Zealand and Colombia. It demonstrated a wide interest in ProGEO activities. The participants from Spain and Portugal have really shown their interest and wish to work together with their Italian friends in the new South European ProGEO Working Group. The publications of the Symposium including both papers and field trip guide was also a great achievement. As a general conclusion I think that the symposium was successful and an important step in fulfilling the ProGEO aims as an organisation and perhaps extend it in wider international context.

Then some words for the forthcoming meetings. The first possibility to meet again will be the ProGEO Meeting in Prague - Czech Republic in the beginning of June 2000 (ProGEO'2000). Then we have the Special Session of the 31 International Geological Congress in Rio de Janeiro in August 2000. The third possibility will be the ProGEO Workshop in Izmir in the end of September 2000. I hope to meet many of you during these meetings full of new ideas and presenting results from your studies on the national, regional and international geoconservation activities. Please be aware of the development of the UNESCO Geopark Programme in which according to my thinking ProGEO could be able to play a very important role.

In general 1999 has been a successful year for ProGEO, a success I hope we will be able to develop further into the new millennium. I plan to continue the efforts for preparing and publishing of the book "Geoconservation in Europe" which can serve as a face for ProGEO all over the world. You will soon receive the instructions about the questions/problems which has to be included in the papers of this book.

Finally: Season's Greetings to all ProGEO Members and Friends and their families with wishes for good health, personal luck and prospective year 2000! Good luck in the new century to all of you!

Todor



III International Symposium ProGEO on the Conservation of the Geological Heritage.

Madrid November 23-25th., 1999

The symposium was successfully arranged and will be reported in detail in the next issue of ProGEO NEWS. Among the achievements of the good organisers was the publications of the papers from the symposium (picture) as well as an impressive excursion guide.

References:

Baretino, D., Vallejo, M. & Gallego, E. (Eds.) 1999. Towards the Balanced Management and Conservation of the Geological Heritage in the New Millennium. Sociedad Geológica de España. Madrid. 459 pp. ISBN: 84-930160-1-2.

Meléndez y, G. & Soria-Liop, C. (eds.) 1999. The geological and paleontological heritage of central and eastern Iberia (Iberian range, Spain). Publication del seminario de paleontología de Zaragoza. Vol. 4: 1-180.

Both publications are recommended!

Is it Always Possible to Preserve Geological Natural Heritage?

In many places it is hard, impossible or even irrational to protect the geological natural heritage. Such cases, which could not be protected due to many different factors, are very frequent, also in Slovenia. In the paper two of them from the field of palaeontology are presented.

At the end of 18th century, as in most countries in Europe it was a high mining activity in Slovenia. They were searching for different ores, above all energetics as oil, gas and coal. At that time a coal research shaft was sunk by Soteska near Moravce (Fig. 1). In Egerian-Eggenburgian (Upper Oligocene - Lower Miocene) beds coal was found, but the beds was too thin for exploitation and the shaft was abandoned. During sinking a rich micro and macrofauna was discovered. Among macrofauna recordings are the very interesting and relatively large and rich ornamented gastropod *Melongena semseyiana* (Erdős, 1900) (Fig. 2a-b). Specimens of gastropod *M. semseyiana* are very rare and could be found only in the Paratethys: in Hungary, Croatia and Slovenia (Fig. 3). The material which was dug out of the shaft was deposited into a nearby mine dam where

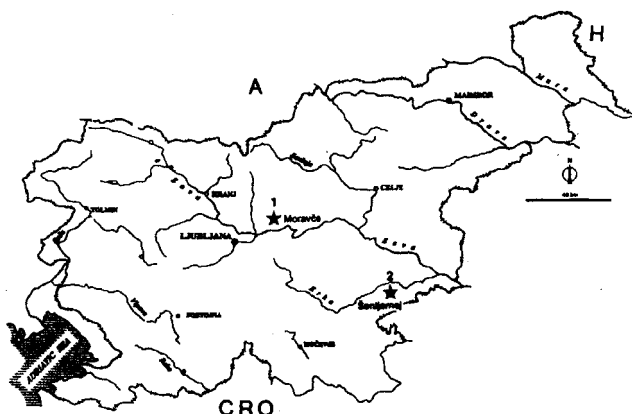


Figure 1. Locations of represented fossil gastropods.
1- Soteska near Moravce, location of *Melongena semseyiana*; 2 - locations of *Pereiraea gervaisi* in surrounding of Šentjernej in Lower Carniola.



Figure 2. *Melongena semseyiana* (Erdős, 1900).
a - dorsal side, natural size; b - the same specimen from upper side, natural size. Photo: M. Grm

it is still possible to find specimens of *M. semseyiana*. Today the specimens can be found only in the secondary place. The primary location is left in the depth of the shaft which has been filled in. Access to the natural beds with *M. semseyiana* is completely impossible. That is why the preservation of the primary location as well as the preservation of the mine dam, is impossible and unreasonable. In recent years both locations are overgrown by bushes and the nature protects them by itself.

The second case is from Lower Carniola. The hills on the southern end of Krško valley consist of Mid-

dle Miocene (Badenian) and sandy marls rich in different fossils. Among them are the most prominent and easily distinguishable gastropod *Pereiraea gervaisi* (Vézian, 1856) (Fig. 4a-b). The only known locality of *P. gervaisi* in Slovenia is in the vicinity of Šentjernej (Fig. 1). In Europe the localities with *Pereiraea gervaisi* are sparse, but they are found both in the Mediterranean Tethys (Spain, Portugal, Algeria, Italy, France?) and in Paratethys (Hungary, Croatia, Austria?) (Fig. 3). The uniqueness of *P. gervaisi* is seen in the different ornamentation of the last whorl, which is a rarity among gastropods, as well as the fact that in the Mediterranean Tethys it is only found in the Lower Miocene and in the Paratethys it was not expanded earlier than the Middle Miocene.

The landscape of the *Pereiraea gervaisi* locality is consisted by numerous private vineyards. About 20 years ago, when winegrowers prepared terrain for new vineyards they ploughed soil very deep. After rain the vineyards surfaces was full of pereiraeas and other fossils. The majority of pereiraeas shells were collected by fossil collectors, house owners, winegrowers and palaeontologists. Today only the fragments of shells can be found.

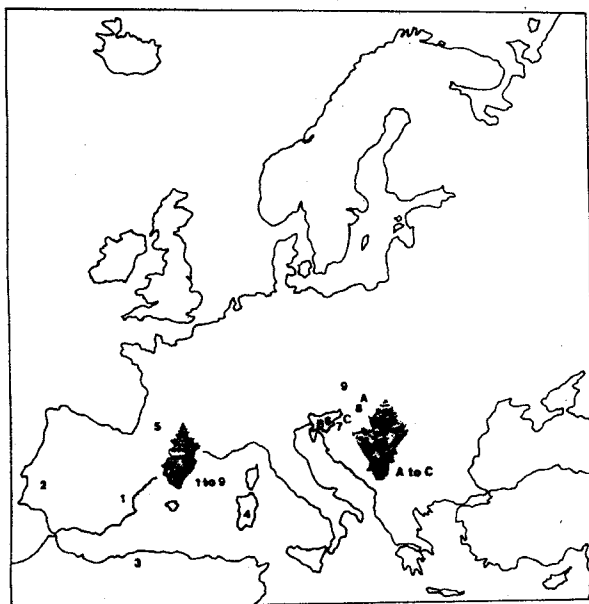


Figure 3. Geographical distribution of gastropods *Melongena semseyana* (A-C) and *Pereiraea gervaisi* (1-9) in Europe and North Africa. 1-Spain, 2-Portugal, 3-Algeria, 4-Italy, 5-France(?), 6-Slovenia, 7-Croatia, 8-Hungary, 9-Austria(?); A-Hungary, B-Slovenia, C-Croatia.



Figure 4. *Pereiraea gervaisi* (Vézian, 1856) from locality near Šentjernej in Lower Carniola.

a - ventral side, natural size; b - the same specimens from upper side, natural size. Photo: M. Grm

The area near Šentjernej was protected by community act in 1992 and every collection of pereiraeas shells is forbidden. The problem is that the mentioned act was published in the community official gazette only and the majority of people is not even acquainted with it. At the same time some information tables should be set up in localities which would point up locals and visitors to this Slovenian palaeontological sight. A lot would be missed since the information desk is a project of the Regional Survey for Natural Heritage as late as in year 2000.



Despite the protection act and warning boards the protection and preservation of the natural geologic heritage in Lower Carniola will not be effective, because of the unconsciousness of the citizens, the private land ownership and fieldwork in the vineyards. Hoeing, which can not be forbidden, results in continuously destroying of shells of rare fossil species. Like in the first case, the nature itself will provide the best preservation. The majority of known locations of *P. gervaisi* are now entirely cultivated and build up, which makes deliberate fossils destruction impossible. If someone wishes to obtain samples for research purposes, it is always possible to dig up adequate probes.

Vasja Mikuž & Aleksander Horvat



Training course

Selling Geology to the Public: 1-2 March 2000

What's the difference between geology and geomorphology? For most of the public, it's all 'geology' - if it isn't just a pile of old rocks! That's where this course starts. It aims to encourage techniques that can bring the earth sciences alive, and to explore their potential as a major public attraction.

Who For

This course will be valuable for anyone interested in sharing their enthusiasm for earth science with visitors; for tourism development staff who would like to use geology's dramatic stories to attract visitors and for private sector operators who need to explain their work.

By the end of the course, you will

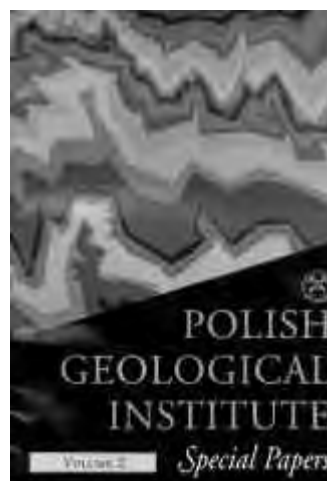
- understand how good interpretative planning can help to make earth sciences interesting and exciting
- know how to write accessible, lively text for leaflets and panels
- have discussed case studies of leading geotourism projects
- have had an opportunity to develop a project from your own work

Course Leader: James Carter. **Venue:** Dynamic Earth, Edinburgh. **Cost:** £60 (including lunch & refreshments, but excluding evening meal and overnight accommodation). Contact **Scottish Natural Heritage** if interested, address: see page 11.

Robert Threadgould



New publications



Proceedings of the central Europe working group workshop ProGeo '97

Polish Geological Institute Special Papers, 2. 1999. Scientific Editor: Zofia Alexandrowics.

ISSN 1507-9791
14 papers, 102 pages – in english.



Geologica Balcanica 28. 3-4 1998.

Special Issue "Geological Heritage of Europe". Special editors: Ivan Zagorchev and Radoslav Nakov.

ISSN 0324-0894
28 papers, 182 pages – in english.



Geositi testimoni del tempo. Fondamenti per la conservazione del patrimonio geologico.

Editor: Giancarlo Poli. Regione Emilia-Romagna
ISBN: 88-8342-009-8

7 chapters, 258 pages.



GEO-trip
'99

Yugoslavia: Fruska gora mt.

This year GEO-trip, the third from the beginning, in Yugoslavia has been organized by the Institute of Nature Protection of Serbia. Around 50 participants had visited Fruska gora mt. where geological and geomorphological characteristics make natural ambience of rare beauties. For this reason, a larger part of the Fruska gora mt. was, in 1960, proclaimed a National park with a special status regulated by the law.



Presentation of the geological values, which belong to geo-heritage, has included several stop points. Most of them are known for the discovery of fossilized organisms conserved and found in the outcrops. Itinerary lead:

- Near the monastery of Grgeteg, on the southern slope of the Fruska gora mt., in the brook called Luka, there is a well-known fossil locality of the period of upper Pontian (fig.1) often mentioned in literature. After Stevanovic P. (1977) in sandy clay are founded *Paradacna radiata*, *Monodacna simplex* and *Congerina budmani*, and above in yellow sands *Prosodacna vodopici*, *Limnocardium ocethophorum*, *L.petersi*, *Maladacna steindachneri* ... This locality is under the protection of the State, as a geological monument;

- Geomorphological site-pick Iriski venac where is placed transmitter, was bombed on several occasions, causing damages to the area same as biotopes;

- Stonemine "Filijala" Beocin where sediments of the Pannonian etages are very important in terms of economy because they contain large deposits of cement marls. The age of the Pannonian layers is proved by the discovery of numerous mollusks and Ostracoda (*Congerina banatica*, *Paradacna lentzi*, *P.syrmiense*, *Gyraulus praeponticus* ...);

- The shallow water sediments of the Mastrich revealed by erosion in the upper course of Cherevicki potok and its source branches, are one of the richest treasuries of the upper Cretaceous fossils in Europe. In a rich paleontological collection, gathered and described 90 years ago by J.Peth (1906), there are 127 species of periwinkles and shells alone, many of which were determined to be new species. This list of sea periwinkles and shells has been supplemented by other researchers till now, amounting to 164 species of sea fauna (paleo biodiversity!)

- The uniqueness of the Fruska Gora lies also in its natural growing together with the largest European river - Danube, the Tisa delta and the lower course of the Sava. A great ecological wealth of the Fruska Gora lies in a broad network of subterranean water courses and above-ground spring and brooks.

- The Fruska Gora is also unique in world

Figure 1 The well-known fossil locality of the period of upper Pontian near the monastery of Grgeteg, on the southern slope of the Fruska gora mt.



Figure 2 Specimens on display from the fossil site.

terms because of its 38 Orthodox monastery complexes, of which 17 are still active. It has been ascertained that the Fruska Gora monasteries were built in the second half of the 15th and the very beginning of the 16th centuries.

Although all this beauties,

- There is an increasing number of unregulated dump sites in the Fruska Gora. At the same time, attempts have been made at an opening of new dump sites for the huge volume of communal waste of Novi Sad and the townships from the edges of the Fruska Gora.
- The agricultural activity in the Fruska Gora has been completely disrupted and the result are increasingly large areas under maize and dwindling vineyards and orchards. Vineyards and orchards used to account for 20 percent of the land on the east side; this percent is down to 6 now.
- The exploitation of stone and ores, particularly marl for the cement factory, has impaired the ecosystem of the Fruska Gora. Besides, the cement production at Beochin does not fit into the principles of preserving the geodiversity and biodiversity of the National Park.

References:

Proceeding of The natural, spiritual and cultural values of the Fruska Gora meeting; Plavi zmaj, Novi Sad, 1996.

Dusan Mijovic



International Earth Sciences Colloquium on the Aegean region – Izmir 25 –29 September 2000.

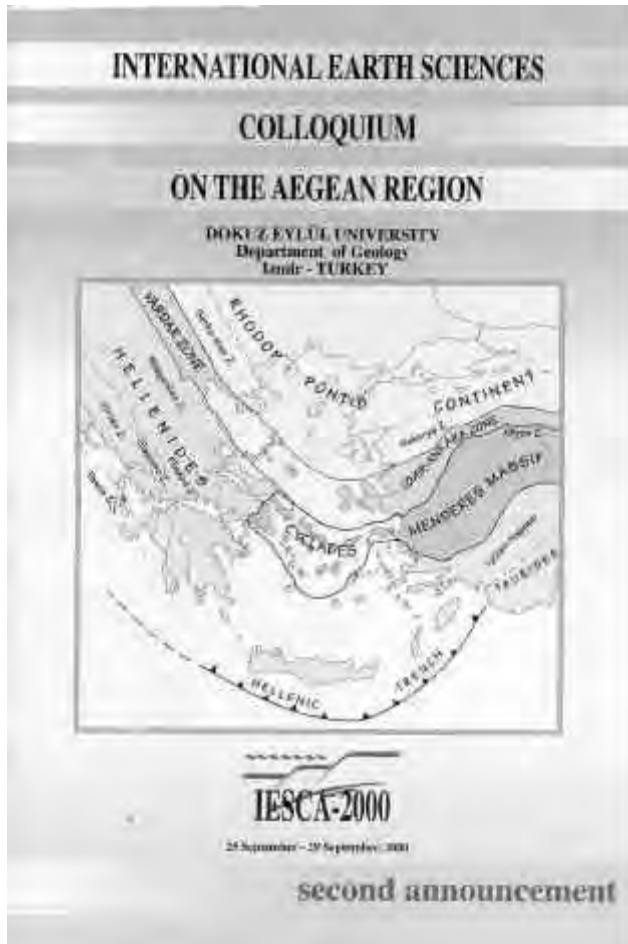
The organising committee of IESCA-2000 is lead by honorary president Fethi Idiman from Fokuz Eylül University.

The IESCA-2000 will be held in the Cultural and Convention Centre of Administration Building of Dokuz Eylül University in Izmir, Turkey.

English will be the official language of the IESCA-2000. There will be no simultaneous translation available.

The principal objectives of the Symposium are:

- To present current researchers focusing primarily on the geology of western Turkey and the surrounding regions;
- To encourage discussions on these topics among active researchers;
- To provide an overview of geological research currently being undertaken in western Turkey and its environs.



Facsimile of the second announcement of IESCA 2000. Several interesting excursions are planned. If interested contact: Ismet Özgenc, Organising Secretary, IESCA-2000, Dept. of Geological Engineering, Dokuz Eylül University, 35100, Bornova/Izmir, Turkey. Tel: +90 (232) 388 29 19, Fax: +90 (232) 3887865. E-mail: iesc2000@izmir.eng.deu.edu.tr



Teachers training

International seminar in the framework of the GRECEL project. 16-22 of October 1999, Greece.

Introduction

An International seminar for the instruction of teachers on matters of geological heritage and geoconservation took place between 16-22 of October 1999, in Nafplio, Greece.

It was organized by the Institute of Geology and Mineral Explorations of Greece (IGME), UNESCO, Re-

serve Geologique de Haute Provence through the GRECEL project, which is supported by the European Committee and especially by the European program COMENIUS actions 3.1 and 3.2.

The history of the seminar in Greece

May 1995 - First contact and involvement in ProGEO, its aims and ideals. As a consequence, later in the same year a group of geologists is formed in IGME for the promotion of geoconservation and geological heritage issues. Other Greek colleagues are also involved in geological heritage activities and become members of ProGEO.

Rationale for education in geological heritage conservation

It is yet known that there is no education without geoconservation, but most important we think is that there is no geoconservation without education. We need environmentally appreciative students to protect the natural and geological heritage in their country, their town, in their doorstep. Consequently, to succeed this purpose, we need trained teachers on this matter.

GRECEL project

Realizing this need and in the framework of the European Commission educational aimed Comenius programme, a group of experts was formed in order to create methods, tools and other education material for training -through seminars- high school teachers on Geological Heritage and Geoconservation. And the GRECEL project has been born in 1997, with partners, colleagues of ProGEO from U. K., France, The Netherlands, Slovenia and UNESCO.

Aims of GRECEL

1. First attempt of the group was to find out what about geoconservation and geological heritage



Figure 1 From the seminar



Figure 2. Seminar participants in a outdoor session.

in schools curricula in our countries. This indicative inventory led to the conclusion, already known but not in its real dimension, that Geological Heritage and Geoconservation concepts are almost totally absent of the schools curricula and environmental education programs, although the teachers' motivation is of a high level but training and concrete education material for the local environment is missing. The situation is even more disappointing as the lessons of geology are under continuous persecution of schools curricula.

2. A first manual it was prepared afterwards with case studies from the partners' countries accompanied by appropriate educational activities.
3. Seminars proposals and preparation.

Seminar in Nafplion, Greece.

The seminar in Nafplion, took place as a first contact of environmentally sensible teachers with geological heritage ideals through this educational material. Here we shared views and opinions with the teachers about the best possible way to put into practice through education and curricula our ideas for geological heritage conservation and sustainability.

We consider this seminar as an historic one as it is the first of this issues in Greece. Furthermore it is the first time a sign is placed in Greece, at Arvanitia beach in Nafplio, in a geotope-witness of sea level changes during the geological history of Greece. The placing was made in cooperation with teachers and the environment-group students of the 2nd high school of the city of Nafplio. The local authorities were represented by Mr. G. Koliopoulos, Vice Mayor

of Nafplio, who is particularly interested in environmental and educational issues, being a teacher himself.

Next Seminars

The next seminar of this kind will take place in Nafplio again, in May 2000, while the third one will take place in Loutraki, a town nearby. In the meantime a 2days seminar for geoscientists will take place in Rio de Janeiro during the 31st International Geological Congress in cooperation with Unesco. The idea also of rolling seminars in the southeastern Europe, is discussed with colleagues of ProGEO1 WG. All these activities aim to re-define education practices, as chapter 36 of Agenda 21 of Rio requires. UNESCO is the task manager of this chapter.

PROGEO support for the sustainability of the education activities

The ProGEO human network support is indispensable for the following reasons:

1. To inform geoconservation interested teachers for the seminars and the way to participate. But the most important is that:
2. Trained teachers coming back to their countries try to prepare geological heritage projects in their schools, for the local environment; this has already happened after the first seminar. In this effort, it is more than obvious, they need the knowledge, the experience of geoconservation specialists in their countries, they need the advice of all of



you. Try to support them for the future of geological heritage education.

The local Nafplion newspapers of Nafplion have covered the event with a lot of nice details and photos the event (seminar), the sign placement, the site description and it is expressed the interest for the seminar of next May. As a follow up, also, the following are taking place:

1. a proposal of the local authorities to the ministry of
2. environment for the financial support of a promotion and management
3. of the site project
4. a proposal of the high school involved in the seminar, to the
5. general secretary of youth for the support of an adoption and
6. protection of the site project.

Irene Theodossiou-Drandaki



Addresses

The editor know that our address database has quite a number of errors. We hope to improve the database during the first part of next year.

The editor will therefore ask for help. Please send any corrections and changes of address to the editor.

We ask also for information about people who should receive the newsletter, but do not, and people who receive the newsletter, but are not interested in doing so.

With this requests it is only left for the editor to thank you all for the old millennium and wish you all a good new one!

Addresses

Irene Theodossiou-Drandaki
Institute of Geology and Mineral Exploration
70 Mesoghion st.
115 27 ATHENS
Hellas
e-mail: ren@igme.gr

Dusan Mijovic
Institute of Nature Protection of Serbia
106, III bulevar str.
11070 Belgrade
Yugoslavia
E-mail: NAVY@EUnet.yu

John Gordon
Scottish Natural Heritage

12 Hope Terrace
EDINBURGH
EH9 2AS
Tel: +44 131 446 2249
JOHN:GORDON@snh.gov.uk

Robert Threadgould
Scottish Natural Heritage
12 Hope Terrace
EDINBURGH, EH9 2AS
Tel: +44 131 446 2249
ROB.THREADGOULD@snh.gov.uk

Ismet Özgenc
Organising Secretary, IESCA-2000
Dept. of Geological Engineering
Dokuz Eylül University
35100, Bornova/Izmir, Turkey.
Tel: +90 (232) 388 29 19
Fax: +90 (232) 3887865
iesc2000@izmir.eng.deu.edu.tr

Vasja Mikuz & Aleksander Horvat
University of Ljubljana
Department of Geology
1000 Ljubljana, Aškerceva 2
Slovenia

Dr. T. Todorov
Geological Institute and
Bulgarian Academy of Sciences,
George Borchov St. 24
Sofia 1113
Bulgaria.

Lars Erikstad
NINA
Box 736 Sentrum
N-0105 Oslo
Norway
Phone: + 47 23 35 51 08
Fax: +47 23 35 51 01
lars.erikstad@ninaosl.ninaniku.no

Deadline for contributions to next issue of ProGEO NEWS: 15.2.2000

ProGEO: European Association for the Conservation of the Geological Heritage. **Bank-account:** Deutsche Bank Hamburg - bank code number: 200 700 00, account number: 63 14 918. **Membership subscription:** personal: 50 DM/yr., institutional: 300DM/yr. **President:** Dr. T. Todorov, Geological Institute og Bulgarian Academy of Sciences, George Borchov St. 24, Sofia 1113, Bulgaria. **Executive Secretary:** W.A.P. Wimbledon, Postgraduate Research Institute for Sedimentology University of Reading, Whiteknights, READING RG6 6AB, United Kingdom.
ProGEO NEWS - A ProGEO newsletter issued 4 times a year with information about ProGEO and its activities. **Editor:** Lars Erikstad, NINA, Box 736 Sentrum, N-0105 Oslo, Norway, Phone: + 47 23 35 51 08, Fax: +47 23 35 51 01, e-mail: lars.erikstad@ninaosl.ninaniku.no. Contributions preferred on diskette (Word- or ASCII-format) or by e-mail if possible.



NEWS

A PRIORITAIRE
PAR AVION



NINA • NIKU
STIFTELSEN FOR NATURFORSKNING
OG KULTURMINNEFORSKNING