ProGEO NEWS

No. 2 1997

Jägala waterfall, the highest waterfall in Estonia (8 m) is found east of Tallinn. It is a typical caprock fall with measured retreat of approx. 17 cm a year. It is formed when the river passes the raised (glacioisostatic uplift) baltic clint.

ProGEO '97 Estonia

The second general assembly of proGEO was arranged together with a scientific conference and excursions in Estonia in early June 1997. On the general assembly Prof. Dr. Todor Todorov from Bulgaria was elected as new president after Carl Erik Johansson from Sweden. A new executive committee was also elected. Detailed minutes from the general assembly will be published later. In this issue of ProGEO NEWS you will find the yearly reports from the president and executive secretary to the general assembly as well as Carl Erik Johansson's opening speech. Carl Erik has done an outstanding good job for ProGEO in his period as president and received many good words when leaving the post. You will also find some photographs from the excursions.

The scientific program consisted of 27 presentations, discussions and several posters, split in three main themes: geology and community: policy and legislation, databanks and site selection and criteria. The conference was opened by the chairman of the organising committee: Rein Raudsep, Minister of the Environment in Estonia: Villu Reiljan (picture) and the president of ProGEO Carl Erik Johansson. The meetings were held in the centre of Tallin and in the Lahema National Park. It was arranged inter-

Minister of the environment in Estonia, Villu Reiljan, opening ProGEO 97.

conference excursion in the city of Tallin as well as in the Lahemaa National Park.

After the meetings two different postconference excursions was arranged. One one-day excursion to the Pakri peninsula with beautiful landscapes north in Estonia and the other over two and a half days to Saaremaa Island in the south-western part of the country. Main issues on the last excursion were the famous paleobaltic reef belt and the Kaali meteoritic craters from Holocene. Both showed interesting features and gave together with a beautiful weather the best basis as possible for a top excursion.

The ProGEO '97 meetings and excursions were as a whole a very successful arrangement most of all because of a very good work done by the arrangement committee and its helpers and with good help by the weather that showed us Estonia from its best side all the week long.

Lars Erikstad

ProGEO '97 Opening message by Carl Erik Johansson

Dear ProGEO Friends, including you, Mr Minister Villu Reijan and Mr Guido Paalme, Estonian Ministry of the Environment,

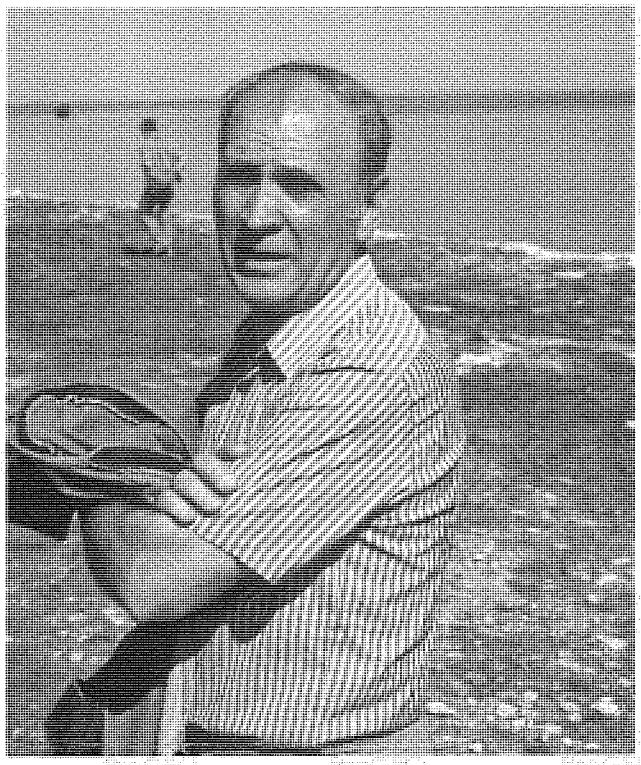
We are proud to meet you in *ProGEO '97*, the geoscientific nature protection conference and general Assembly of the European Association for the conservation of our Geological Heritage. It is a privilege for us to be here in Matkamaja, Tallinn, Estonia. It has been a pleasure for me to take part in the planning and preparations by the Estonian Ministry of Environment and Eeesti Geoloogiakeskus, the progressive Geological Survey of Estonia.

Rein Raudsep and his colleagues have performed a strong work and given a good impression how to solve all problems. Veli Suominen from the Geological Survey Finland has contributed constructively in the preparations.

ProGEO '97 is performed in cooperation between Estonia Finland, Norway and Sweden with funds for participation of colleauges from East Europe, documentation and evaluation of the results with regard to conveyance of know-how to arrange an important geoscientific conference. I am proud to state that the ProGEO '97 is funded by my previous employer, the Swedish Environmental Protection Agency. It is supported by the Geological Survey of Sweden and Nature conservation authorities in Norway and Finland.

In a recent publication of mine, a Tema Nord report from the Nordic Council Minister: *Nordisk naturvård - möjligheter och problem* (English: Nordic Nature Conservation - possibilities and problems) geoscientific nature conservation has a prominent position, as well as cooperation between the Nordic and Baltic states: Let me quote some central recommendations from the report (that is intended as a basis and an inspiration source for Nature conservation):

' - - - The work with area protection should in a long run aim to achieve a good representation of landscape types and nature types in the geographic regions. The Nordic countries have a special responsibility for certain



The new elected president of ProGEO:
Prof. Dr Todor Todorov

Change of adress

Gerard Pieter Gonggrijp
Natura Docet
Oldenzaalse straat 39
7591 GZ Denekamp
The Netherlands
tel. ++31.541.351325
fax ++31.541.353592
no E-mail

Lars Erikstad
New e.mail:
lars.erikstad@ninaosl.ninaniku.no

'Nordic' nature types, such as fissure valleys landscapes, archipelagos, land uplift coasts, wetlands, bare limestone land, unexploited rivers and watercourses, ice-margin formationss and esker systems, marine environments in the Baltic Sea, sand dune landscapes, and the Wadden Sea along the North Sea.'

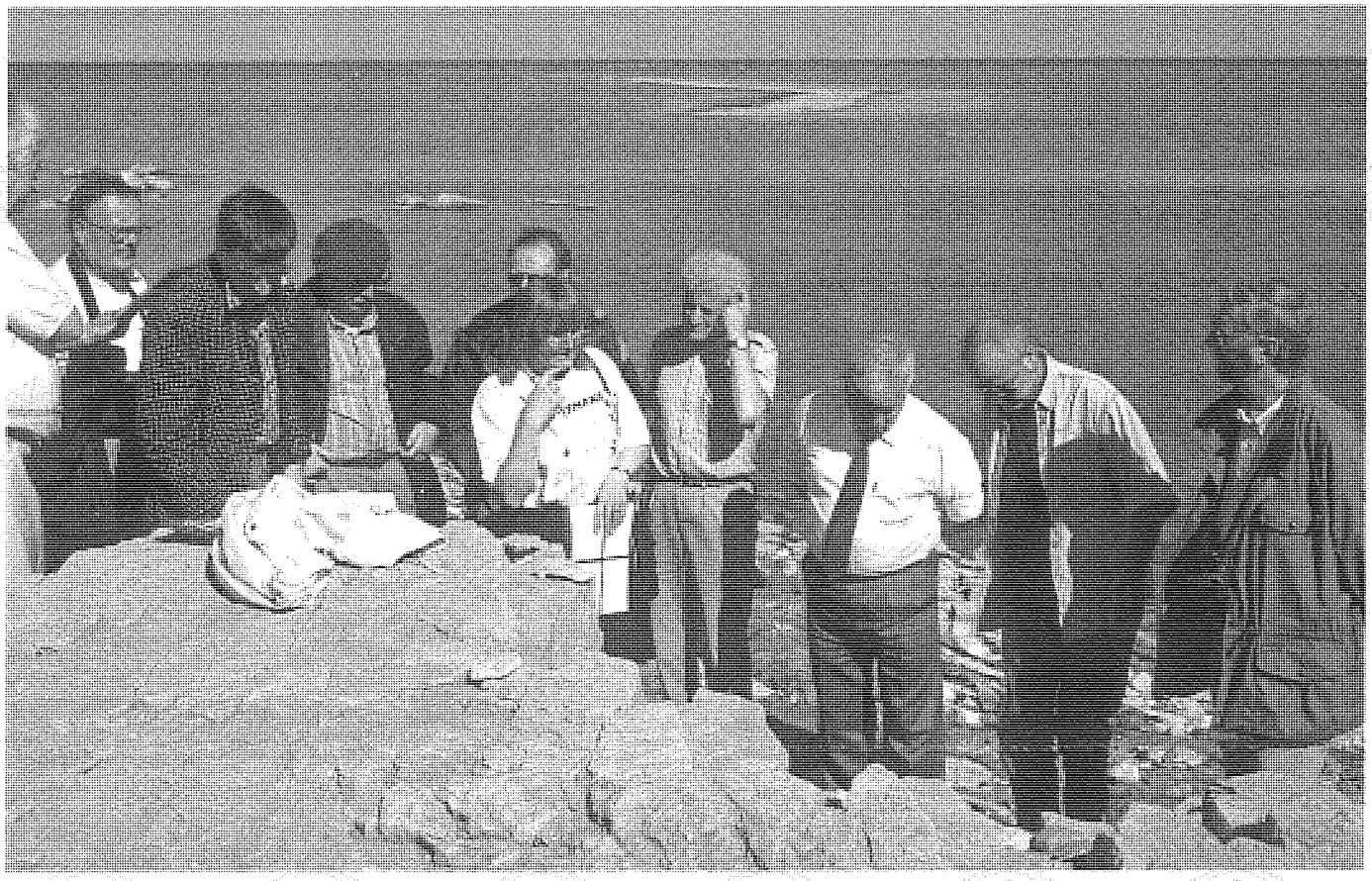
Cooperation with the Baltic countries is illustrated with a satellite image based map of the Estonian Ramsar site Matsalu bay and its drainage area. It should be reinforced within the framework of the Helsinki Convention. The division into nature-geographic regions of the Nordic countries should be developed and expanded to include the countries around the Baltic, with connections to the rest of Europe, considering 'responsibility areas'. Certain shore biotopes-geotopes should be given a stronger and more extensive protection than at present.

A new Nordic project, *Geodiversity in Nordic nature conservation*, has also strong connections with the North-European countries and ProGEO. It will use the previous divisions of nature-geographic regions and terrain forms in Norden, as well as the Geosites framework for North Europe developed by the ProGEO Regional working group No 2.

The Geosites framework includes geologic regions, landscapes and types of geological sites. It shows the essentials of geodiversity. As we all well know biodiversity has a prominent role in nature conservation. Geodiversity makes up the basis of biodiversity - a fact that is not always considered in nature conservation and politics, but it must be considered a true basis for constructive management of nature and natural resources.

ProGEO has a frontal position and plays an active role in elucidating the important interrelations between geosites, geodiversity and biodiversity, showing the real ground truth of landscape and nature. Thanks to cooperation within ProGEO and with the Baltic countries there are strengthened possibilities to perform the geoscientific recommendations of *Nordic Nature conservation - possibilies and problems.*

With these proud words I have the honour to present this book to you, Mr Minister.



Part of the excursion group to the Saaremaa island, Estonia, studying the stratigraphy on the Undva cliff.

Letter to ProGEO NEWS

Dear ProGEO-News readers!

We had no thoughts about what ProGEO'97 would be like when we arrived to Tallinn the first week in June and we came with very different backgrounds. Kristina as an observer from the Central Eastern Europe Cooperation Programme at the Swedish Environmental Protection Agency (SEPA) and Annika as the new contact person for SEPA towards ProGEO after Carl-Erik Johansson's retirement.

The most important thing we both learned during the week is how important it is to meet people from other countries and to exchange knowledge and ideas. We both got inspired and also got a lot of new impulses. Kristina has particularly learnt about how important information strategy is and a lot about how to arrange a conference of this size. For Annika the most important thing has been to get in touch with the ProGEO-network and to understand how the ProGEO work is performed in different countries.

Our participation in ProGEO'97 has been a part in SEPA's ambition to increase the cooperation between different countries.

It is interesting to get to learn so many new people from all over Europe and it's also interesting to get to learn a colleague who has been sitting only 88 steps from your own room!

Kristina Fredriksson & Annika Jansson

ProGEO general assembly notices

President's report

Since June 1995 when I had the honour of being elected President of ProGEO at its first General Assembly our association has grown with new members from all Europe. ProGEO has performed an increasing number of regional and national activities. Regional cooperation groups have started in SE Europe, N Europe and Central Europe with the main task to nominate Geosites. ProGEO also cooperates with IUGS and UNESCO in the joint project GEOSITES, lead by Bill Wimbledon, to define a global inventory of geoscientific sites, and perhaps World Heritage candidates.

ProGEO's Executive committee had meetings in Copenhagen, Stockholm, Rome and Tallinn and a series of fax meetings. I had also working meetings and quite frequent contacts by phone, fax and e-mail with our Secretary, with Vice President Lars Erikstad, and Executive committee members Lars Karis and Veli Suominen. The contacts with Francesco Zarlenga and Rein Raudsep have also been frequent especially when planning and preparing ProGEO '96 in Rome and ProGEO '97 in Tallinn.

We have exchanged information with Mr. Lars-Erik Esping, Stockholm and IUCN, about World Heritage Sites. I have sent letters to Dr. Albanese in the Europe Task Force for the Pan-European Biological and Landscape Diversity Strategy of the Council of Europe as to its action plan where Geological Heritage is concerned, to Dr. Drucker, the European Centre for Nature Conservation, concerning cooperation between ECNC and ProGEO, and to Professor Jacobs, Gent, asking for assistance in the work of ProGEO.

After the excellent 2nd ProGEO Symposium in Rome I was kindly invited by Dr. Eder, UNESCO, to take part in a workshop on Geosites at the 30th International Geological Congress in Beijing, China. Here ProGEO was well represented.

Together with ProGEO editor Lars Erikstad I managed to get support from the Norwegian Directorate for Nature Management to secure the production of ProGEO News. It can also be found in Internet, kept up-to-date by Lars Karis in the homepage of the Geological Survey of Sweden. I have contributed with President's points etc. and illustrated reports, for instance from ProGEO '96 in Italy and the IGC in China.

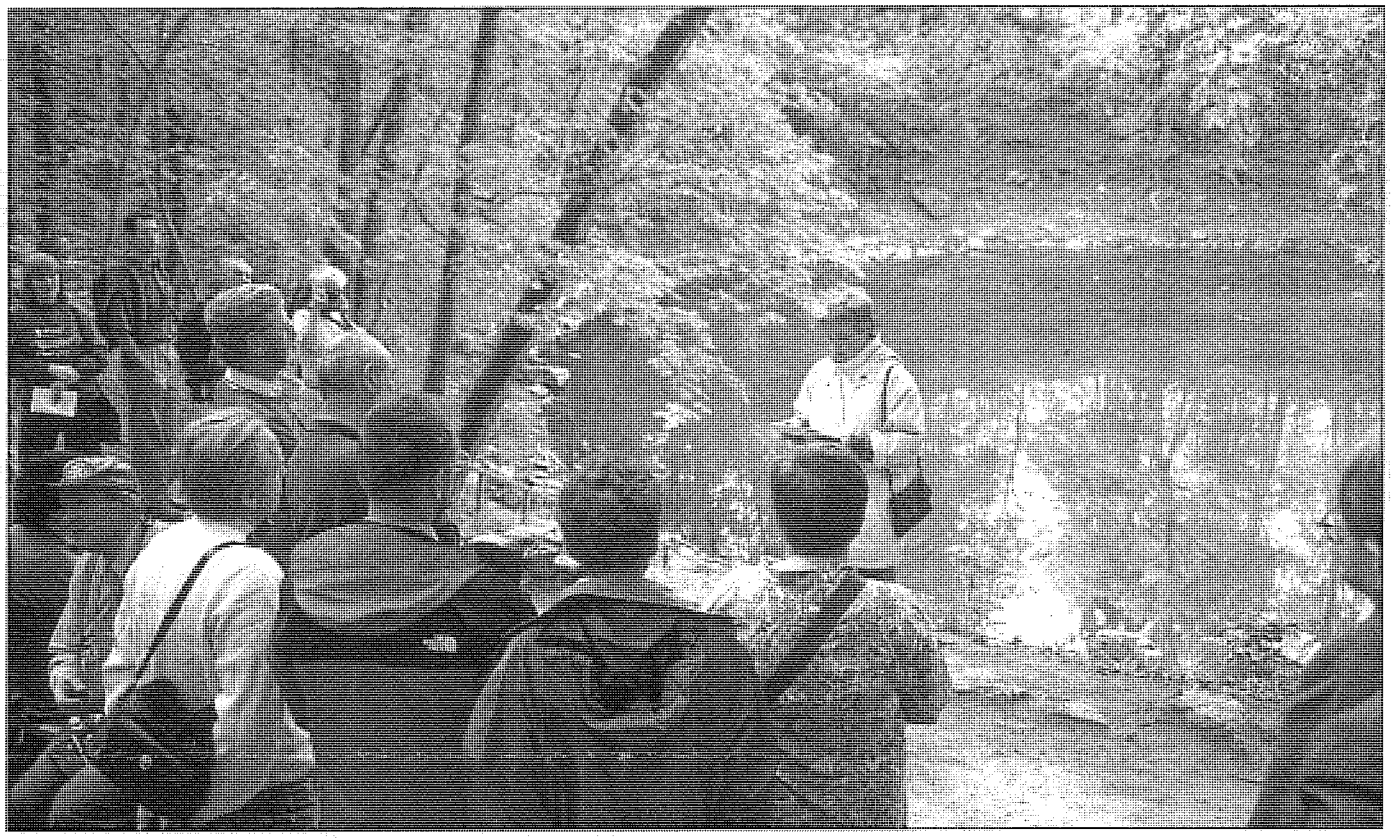
Again with Lars Erikstad I have initiated the competition Geosite of the year.

I have presented speeches and papers, representing ProGEO in a conference in University of Copenhagen in October 1995, in ProGEO '96 in Rome, and a conference on Quaternary Geology and Nature management arranged in the Geological Survey of Norway (NGU) in March 1997.

I has been a pleasure to contribute to the NW Europe Regional working with work on a Geosite Framework. The group has made a draft framework to be presented and discussed at ProGEO'97, and national draft Geosite candidate lists are being prepared. The results of the activities to select, document and inform on Geosite are impressive. They invite support in several regions, for instance, the joint project Geodiversity in Nordic Nature Conservation, funded by the Nordic Council of Ministers (and lead by me!).

Finally we have succeeded to get financial support of ProGEO '96 and '97 from the Swedish Environmental Protection Agency to to make it possible for various friends to attend the meetings, and to plan, perform, document and evaluate ProGEO '97 with special regard to the transmission of know-how. We hope for contributions from Finland and Norway, too. (We are familiar with cooperation between the Nordic and Baltic countries in ecological, as well as economic terms.) I have the pleasure to take part in the planning of ProGEO '97. We can look forward to successful meetings, symposia and excursions in Estonia. ProGEO proceeds with its progressive work to protect the prominent Geological Heritage of Europe. I want to thank all the active members of our organization for their valuable cooperation and important contributions. The previous account tells where I have been on your behalf, but when I say «I» you should read «we» - for ProGEO has done and achieved all these things.

Carl Erik Johansson



Part of the excursion group is given information about the biggest of the famous Holocene Kaali meteorite craters on Saaremaa island, Estonia. Datings indicate an age of 7600 years. According to archaeologists, they are much younger and it is quite possible that the meteor impact is reflected in the mythology and folklore of the Nordic countries (Kalevala, Edda).

Secretary's report 1995-1997

ProGEO is an association filled with peole who share a common belief that geoconservation is an essential support to research, to training and education, and certainly that our geolgical heritage needs protection. Our association is full of wonderful people who give their time for others and for the association. There are many to thank for their efforts on behalf of ProGEO in the last two years, between Sigtuna and now, as we approach the Tallinn meeting. Not least amongst these are the organising committees of the Sigtuna, the Roma and Tallinn meetings, led by Drs Lars Karis, Francesco Zarlenga and Rein Raudsep and their parent organisations. Those who have worked to make ProGEO grow in the countries, those who have worked to arrange and run meetings of country committees and regional working groups, and those who have contributed to these, all should be thanked. As should the new Election committee and of course the Executive commiittee and our tireless president.

At Sigtuna it was agreed to form an election committee. This was done and a set of simple election guidleines were produced and agreed. Not so simple, but maybe not too complicated. They leave little room for error in our elections. In the period February to March '97 the election procedures using the guidance notes has been running. The election committee (of all our presidents past and present) will henceforth decide any disputes on elections. Geosites was announced at Sigtuna, taking ProGEO towards international collaboration, and work with UNESCO and IUGS. The association was glad to put its efforts for a European inventory under the IUGS banner. UNESCO's Head of Earth Science Division and IUGS's new secretary general both graced part of our Rome meeting. We have achieved corresponding membership of the COGEOENVIRONMENTcommission of IUGS. We work now with the commission towards collaborative projects and meetings.

We look forward to the valuable proceedings from Sigtuna: despite gargantuan effort in writing and editing, the final printing has been affected by budgetry considerations, but there is light at the end of the tunnel. Another re-

sult of the Sigtuna discussions was agreement to make regional working groups more of a focus in ProGEO. It has become obvious that this is the way to get work done. Most countries are now involved in the appropriate working group for their region. There is far to go. In fact, further to go in some parts of western Europe than elsewhere. Central, south east and northern working groups are making sustantial advances. An awakening of contacts with Spain promises to bring Iberia into the picture. At Rome, Italian colleagues discussed with us the possibilities for a mediterranean/southern group.

Work on Geosites proceeds in the working groups: a second meeting was held in Sofia last autumn of Working Group 1 (WG-1) under the auspices of the Bulgarian Academy of Sciences. Geologica Balcanica has just appeared with the proceedings of its first meeting, and this discusses Balkan methods and site selctions. The central WG (- 2) has been busy and a conference has been organised for this coming autumn in Krakow, under the auspices of the Polish Academy. This promises to be most productive. The northern group (- 3)has had meetings at four cities around the Baltic, and is now labouring under an ever increasing pile of geosite suggestions! This says nothing of the numerous national meetings for which many colleagues are to be congratulated.

A major success of 1996 was the Geotrip contribution of ProGEO, allied to the European Year of the Environment and masterminded by Gerard Gonggrijp. Many people in many countries participated in lectures, tours, excavations of classic sites, fossil hunts and seminars.

Rome in May 1996 gave a splendid forum to exchange ideas and work together. We all learnt much and saw much to wonder at. It was our largest gathering to date, with around 250 people attending, a chance to make many new friends. One purpose of the meeting was to help our Italian colleagues by highlighting their views and their aspirations for geoconservation in Italy, to make a link particularly with SIGEA, and meet other bodies. Another aim was to bring colleagues more into the ProGEO family, to recruit them and involve them. This worked well, and a large percentage of our new members in recent times have come as a result of the Rome symposium. One aspect of this is seen in the increasingly Italian flavour of our newsletter! The proceedings of the Rome symposium are edited, thanks to a hard working editorial committee led by Francesco Zarlenga, and now wait publication. The declaration of the Rome meeting allied Italian colleagues to the aims already accepted by ProGEO.

ProGEO launched its new colour leaflet at the Rome conference. The English version of the Digne declaration on it has led to some puzzlement, but the rest has been popular, and well received. A reprint is anticipated in the coming year, and illustrations are being sought for a revised version. Dr Lars Karis made available a splendid colour poster, which could be overprinted for use at meetings or for advertising. Through the kindness of Prof. Hans Peter Schönlaub a leaflet was also printed (by the Austrian Geological Survey) to contain the short strategy based on discussions at a very special workshop held at Sigtuna. We should thank Lars Karis and the Geological Survey of Sweden (SGU) also for bringing us into a new age, with our own internet homepage!

Rome introduced us to some fantastic sites: for the meeting and the discussions continued after the symposium, and some of us visited the volcanic sites of Tor Marancia, set in its ancient Roman landscape near the old Appian Way. Later the association played a small part in the campagn to save the site from development, by writing to the Environment minister, the President of the Region of Lazio, and the Mayor of Rome.

To round off the summer of 1976, several members of ProGEO, including our current President and our next President, attended the International Geological Congress in Beijing. Our numbers and the excellent presentations of members led to there being frequent mentions of ProGEO in discussions of geoconservation and World heritage - another proof of the unique place our association has.

Our open democratic structure and the spread of our publicity and publications is bringing new members. We have lost some old ones, yes, but almost 50 new people have applied to join since the Roma International Syposium - new members from Ukraine, Russia, Bulgaria, Greece, Italy, Kazakstan, Norway, Spain, Yugoslavia, Croatia, Switzerland, Finland, France, Ireland, Portugal, Germany and Britain. Effort is going into building up links, and gaining members, especially in those countries where membership has stagnated since the early days of ProGEO. We have excellent colleagues in Poland, and I am sad to announce the death, after a tragic accident, of Dr Rubinowski the elected representative for that country.

At Sigtuna we gratefully accepted an invitation from Spanish colleagues to hold our annual meeting for 1997 in Spain. However, difficulties in Spain in summer 1996 led to a postponement of planning for this meeting. In recent times the new chairman of the Spanish Heritage Commission has reopened discussions on arrangements, and future developments are awaited.

An enormous amount of work has gone into the writing, editing and re-writing of the Manual on geoconservation. Thanks have to go to contributors and to Gerard Gonggrijp for his unfailing leadership of the project.

Finally, but far from least, the Newsletter: it goes from strength to strength. It is increasingly the obvious outlet for the news and opinions of our membership. Thanks to Lars Erikstad for all his work, and to Norwegian colleagues for the vital logistic support that makes it possible.

Sincere thanks to all for support and efforts during the last two years, especially to our president. This two year period has been our best yet. We have gone beyond the point where a few work for the many: now many take independent action for the greater good of ProGEO. This is a very brief account which cannot do justice to the work of many friends. In the words of an old Roman - Brevis esse laboro, obscurus fio.

W.A.P. Wimbledon

ProGEO **Geological Nature Conservation Cooperation in Sweden**

For more than 300 years Sweden has attempted to conserve its cultural heritage such as ancient monuments and historical buildings by laws and decrees. The protection of Sweden's natural heritage started with a Nature Protection Act in the early 20th century. Most of the first 9 national parks set aside almost 90 years ago have outstanding geological characteristics, and so have the areas protected now.

The following table shows the main protection forms of area protection in the nature conservation act from 1964. Nature reserves and nature conservation areas are the most recent forms of area protection. Natural monuments are small sites. A great many of the protected areas and sites show features of high geoscientific interest, especially the nature reserves.

Protection form	Number	Total area km²	Land area km²
National parks	25	6.423	5.847
Nature reserves	1.685	27.496	22.228
Nature conservation areas	120	2.050	1.320
Natural monuments	1.435	-	-

The protection of Sweden's cultural and natural heritage is now performed within the 'Natural resources act' (1987), a frame law for management of natural resources. It is applied with he planning and building act and a number of special acts, such as the Nature conservation act.

From exploration and exploitation ...

From the 17th century and earlier the material and cultural developments in Sweden were steered by demands to exploit natural resources. For instance, the copper mine of Falun and the silver mine of Sala contributed strongly to make Sweden a leading country of mining copper and silver ores in N Europe. Carl Linnaei's famous expeditions in the 18th Century aimed at exploring landscapes and natural resources - biological as well as geological - to make wise use of them. He reported many geological and geomorphological observations, for instance on bedrock quarrying, littoral forms and processes. Neptun's fields in Northern Öland, caves and giant stacks in Southern Gotland are famous examples (Carl Linnaei Öand and Gotland expedition 1741).

The Geological Survey of Sweden (SGU) from 1858, is the central administrative authority in questions concerning the geological character of Sweden. SGU investigates, documents, describes and informs of Sweden's bedrock, Quaternary deposits and ground water.

In the first half of the 20th Century **The Royal Academy of Science** had a prominent role to point out areas and sites worthy of nature protection.

The Swedish Environmental Protection Agency (SEPA) from 1967 is the central authority for the supervision of environmental protection including nature conservation in Sweden.
SEPA works under the **Ministry of Environment** that was established ten years ago, SGU under the **Ministry of Industry and Trade.**

For the national parks SGU makes maps of bedrock and Quaternary deposits. Hitherto four geological national park maps with brief descriptions are published: Abisko, Muddus and Pieljekajse in North Sweden, and Store Mosse, the largest peatland complex in South Sweden(ca 75 km²).

The county administrations - regional State organizations - perform nature conservation planning and handle matters concerning the use of natural resources in each county, and the communes have responsibility for the physical planning, environmental protection and nature conservation within their borders.

... to consideration, cooperation, and conservation
Until about 1990 there was a traditional polarization between protection versus exploitation of nature and natural resources, but since then there is a strengthened policy and tendency to consider natural and cultural values when making use of natural resources in all sectors and land uses, from forestry and agriculture to bedrock and gravel extraction, road building and urbanization. The respective sector and land user is responsible for nature and environmental protection measures whenever using natural resources and making measures that influence environment, landscape and nature. Consideration and care are more and more important. Consultation between exploiting and protecting actors improves gradually and extendingly.

Cooperation between central and regional authorities takes place at all administrative levels, for instance, in General directors' meetings, working groups and projects.

The 'Natural resources act' stipulates the protection of areas that are important for nature conservation and cultural relic conservation as well as areas with important bedrock and mineral resources. Those of national interest are to be protected against exploitation or other measures that may obviously damage the natural or cultural environment or obstruct a wise use of the mineral or bedrock resource SEPA was the theme host for *The Environment* (1992) and SGU for *Geology* (1994) in *the National Atlas of Sweden*.. In *The Environment* there is a map account of areas of national interest for nature conservation, and in *Geology* those of importance for geological nature conservation are shown with regard to geological and geomorphological types. There are a great many such ones, from proterozoic bedrock to recent shores and dunes.

At the moment there is a revision of the areas and sites of national interest. It is based on increased knowledge of nature and landscapes in Sweden from surveys, inventories and planning. Cooperation in the geoscientific fields is established between SEPA and SMHI (The Swedish Meteorogical and Hydrological Institute) as to lakes and watercourses, and between Naturvårdsverket, SGU and the county administrations concerning areas and sites of special geoscientific importance.

GEOTOP
The revision of areas and sites of national interest for nature conservation is connected with the cooperation programme GEOTOP which a.o. aims at compiling basic and special information on the geological environment with special regard to human demands and its importance for our plant and animal world. The programme is also intended to show a correlation between utilization and conservation of geological resources.

The main goals of GEOTOP are to promote conservation and give information of geological environments that are

well representative for a region, or show especially interesting characters and reveal the landscape development very well. Information of the sites is to be accessible in a data bank to service interested officials, companies and private persons. The cooperation with ProGEO is to be strengthened, and Sweden intends to promote the development of a programme to protect geoscientifical valuable and sensitive environments in the Baltic region.

By GEOTOP we want to establish a national net of geological nature reserves, natural monuments and nature conservation areas with relevant information, a data basis with documentation and special information, education material, and contributions to international cooperation within the geoscientifical conservation sphere, with service and information. New national parks are set aside according to a national park plan (Naturvårdsverket 1989).

GEOTOP contributes to candidate lists and documentation of Geosites in North Europe ProGEO working group. Geoscientific institutions and associations will be consulted in the national, as well as the international cooperation.

Carl Erik Johansson, Curt Fredén,
Rune Frisén & Lars Karis

ProGEO

Prospects of geological heritage in Albania

This is a brief information of activities conserning geological heritage in Albania within the framework of ProGEO.

Albania due to geological position and mountainous alpine relief, is a very rich on geological sites. Since the ancient times Albanian people inherits good traditions for protection of natural monuments. In Ilyrian region, for long there are known hydrocarbons, bitumen, copper ores, coals, iron, chest etc. To this fact testifies many writings of erudite persons, travelers and ancient philosophers, which have passed through Albania.

The first geological data are provided during XIV-XIX centuries by foreign geographers and geologists, but authentic geological observations started at the beginning of XXth century.

During the last decades, especially during the 60's, 70's and the 80's, there are accomplished detailed geological mapping, prospections and explorations of mineral resources. As result there are discovered many outcrops, sections and sites of very important value with scientific, didactic and touristic aspects.

Even if there were done many scientific geological studies and achievements, the problem of geoconservation and geological heritage was unknown up to the last years. During the last decades there are established many laws for protection and conservation of woodlands, hunting lands and parks in towns and their country.

The systematic attempts for evaluation of geological heritage in Albania began in the framework of ProGEO and some Projects for Research and Development in Albania. For the first time in the First Subregional Meeting «Conservation of the Geological Heritage» in south-east Europe» in Sofia were presented: The list of Geological Sites of Albania, the list of caves, the list of mineral and hot springs, (published in the special issues of GEOLOGIA BALCANICA Vol. 26) and the list of geological sites suggested to be included to the World Heritage List.

During the resent years there are organized several national meetings and other activities on the Environmental Geology in Albania:

First National Conference: Geology, Environment and Civil Society (21-22 November 1995), organized by Albanian Association of Engineering Geology and Geoenvironment. There were presented some contributions on geological sites in Albania.

National Symposium on Speleology: Search and Protection of caverns in Albania (June 30, 1995), organized by Geographical Center of Academy of Sciences of Albania.

Workshop: Geological Search and Management of the Coastal Line of Adriatic and Ionian Seas (20-21 March, 1995) organized by Committee of Protection of Environment of Republic of Albania, British Geological Survey and UK Environmental Known How Fund.

Geotrips: Geological Sites of Albania (31 July-10 August 1995 and 9-18 August 1996) organized by Prof. Dr. A. Serjani and Sponsored by Soros Foundation.

Geological Mapping: Geological Study and Environmental Mapping (in scales 1: 50 000) of Koplik-Shkodra-Lezh-Laci Regions (1200 km( ) compiled by Department of Environmental Geology of Geological Research Institute in Tirana, Albania in collaboration with Geological Survey of Hungary.

A new Project is proposed this year by the Geological Research Institute: Geological Heritage in Albania (1997-1999). This Project is based on the framework of ProGEO and of the Project Proposal: «Geological Heritage of Balkan Peninsula» of the working Group-1 of ProGEO.

We intend to study scientific, didactic and turistic values of geological sites of Albania. At the same time we try to do the comparison of Albanian Geological Sites with such analogous sites in other countries. During this year an inventory of geological sites of Albania will be compiled together with classification according to different types, importance and special features. We also intend to coordinate the national criteria for protection of geological sites and give a proposal to the General Direction of Geology, Ministry of Mineral and Energy Resources and to the National Committee of Preservation and Protection of Environment of Albania for legislation changes. During the coming years the selection of geosites for the list of the Balkan Geological Heritage and for the European Geosite Inventory will be realized.

In Albania, there are discovered many geological sites such as:

Unique geological sites:

Largest Bulqiza Chromite deposit, Selenica Asphalt Deposit, full Alpine type petrological section of ophiolite magmatic rocks etc.

Geological sites of outstanding view

Komani carbonate rocks of Cretaceous - Paleocene age with a lot of folds of different sized and colours, Zverneci Sedimentological site in seaside of Adriatic sea with a lot of sedimentary figures of molasse formations etc.:

Pattern geological sites

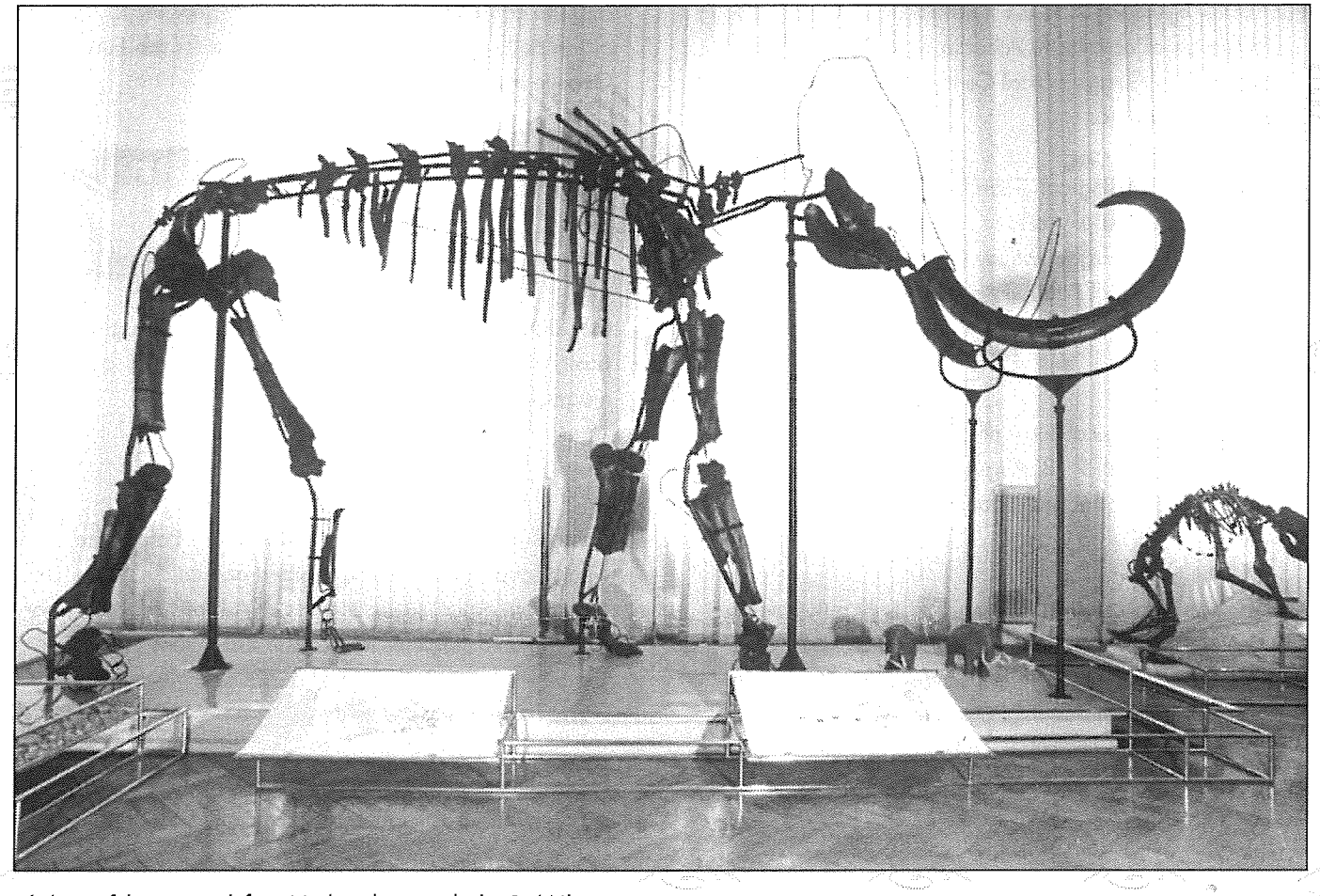
Strategigraphical sections of carbonate-chest Mesozoic rocks in Ionian zone, Paleosoic rocks in Korabi zone, full petrological sections of volcano-sedimentary series and ophiolite tectonite-cumulate magmatic rocks in Mirdita zone etc.:

Some first sites

Kcira paleontological site where for the first time on beginning of this century were found and defined many samples of Ammonites of Jurassic age.

There are also a lot of landscapes of geological-geomorphonical character which represents beautiful natural places and touristic spots such as: Thethi, Boga, Lura, Q.Shtama, Voskopoja, Cajupi, Llogaraja in northern and southeastern mountainous regions, Velipoja, Currila, Divjaka, Himara, Ksamili islands at the Adriatic and Ionian cost, Drilon next to the Ohrid lake etc.

Afat Serjani & Nevila Jozja

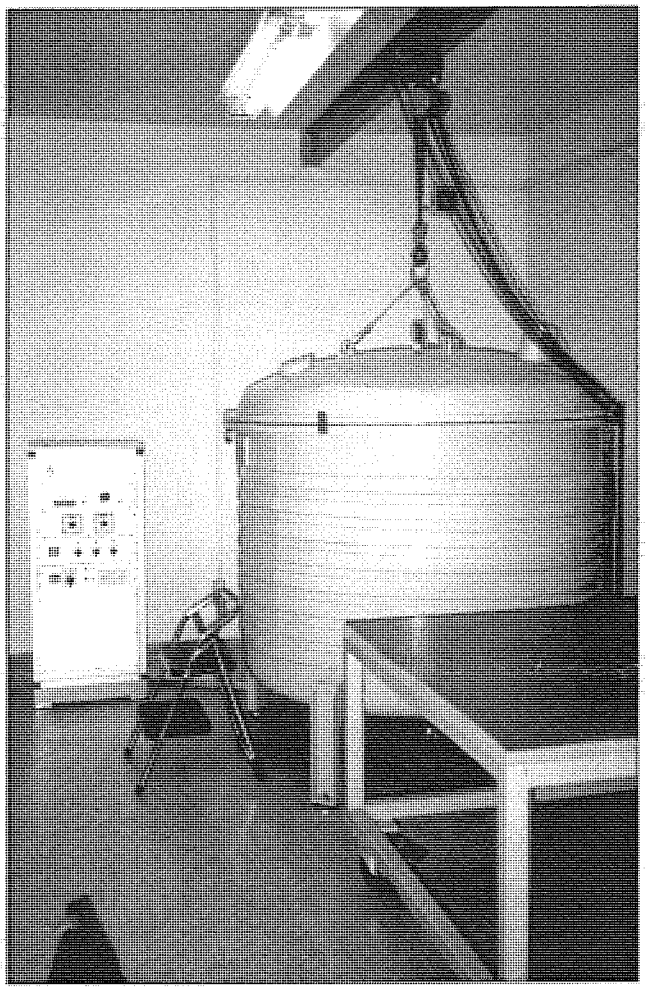


Skeleton of the mammoth from Nevlje, photography by Ciril Mlinar

The mammoth from Nevlje - Slovenia

Towards the end of Pleistocene, the today's territory of Slovenia used to be inhabited by numerous Pleistocene animal species, mammoth being one of them. The evidence of its presence was brought by the findings of individual teeth and bones collected from the sediments of the rivers Sava and Drava as well as from some Paleolithic sites. A fairly complete skeleton of mammoth was found in the village of Nevlje near Kamnik. The locality, situated at a distance of 30 km, northward from the capital town of Ljubljana, lies at the foothills of the mountain chains of Kamniske Alpe, covered by glaciers in the Pleistocene epoch.

In 1938, while building a bridge over the Nevljica brook, workers came upon bone remains of enormous size and informed the Museum of Ljubljana about their finding. The Museum department of Natural History, under the direction of dr. Fran Kos immediately started excavating the fossil remains. A thorough collection of nearly all the bones of mammoth with the exception of its skull was effectuated on the surface of 182 m² and took a bit more than three weeks. The bones were lying beneath the layers of sand and gravel at a depth of approximately 2,5 m in a striped sandy-clay sediment, on a surface of about 110 m². Mammoth lived and died here right before the culmination of the Würm glacial, some 20.000 years BC. The age was determined later, on the basis of other fauna and flora remains from the same mammoth layer. The researches were carried out by dr. Ana Budnar - Lipoglavsek.



Vacuum impregnation chamber, photogrtaphy by Katarina Krivic

Apart from the bones of mammoth attentive researchers found also a 3 cm long stone lame of black silex. This finding marks the first discovery ever of a Paleolithic site in the open air on the territory of the then state. According to the present expert opinion this implement belongs to the Tardigravettian culture.

All the subsequent activities, such as preparation and conservation, expert treatment of the finding as well as the emplacement of the mammoth skeleton on a metal structure, were led by Dr. A. Budnar - Lipoglavsek and Dr. F. Kos. The bones were consolidated by paraffin, by having them soak in a dissolved paraffin. A detailed study of fossil remains established that the bones belonged to the species Mammonteus primigenius (Blumenbach), today Mammonteus primigenius. The skeleton was assembled and exposed to visitors as soon as 1941. It is 574 cm long, 61 cm high and it belonged to an about 40 years old male. The tusk measures 270 cm in all, with a diameter of 16 cm in its thickest portion.

The above mentioned skeleton figures among the more or less plenary skeletons of European mammoth remains. Today its grandiose appearance excites curiosity of the visitors of the Natural History Museum of Slovenia in Ljubljana and presents an important item of the natural heritage of Slovenia.

Now, several decades later, some changes have appeared on the bones of the mammoth, warning us that an urgent reconservation of the entire bony structure is needed. Having studied the most recent foreign literature concerning the subject, we came to a conclusion that a vacuum impregnation by adequate waxes would be the most convenient one. Therefore we contacted the vacuum technology expert, dr. Joze Gasperic from the Institute Jozef Stefan in Ljubljana, who, having consulted several experts from different conservatory workshops all over the world, elaborated the technology of the procedure. The dimensions of mammoth tusk and mammoth largest bones set the size for the vacuum chamber that was made at the end of the last year. In this chamber, we intend to reimpregnate the mammoth skeleton in wax under lowered pressure. We do hope to be successful.

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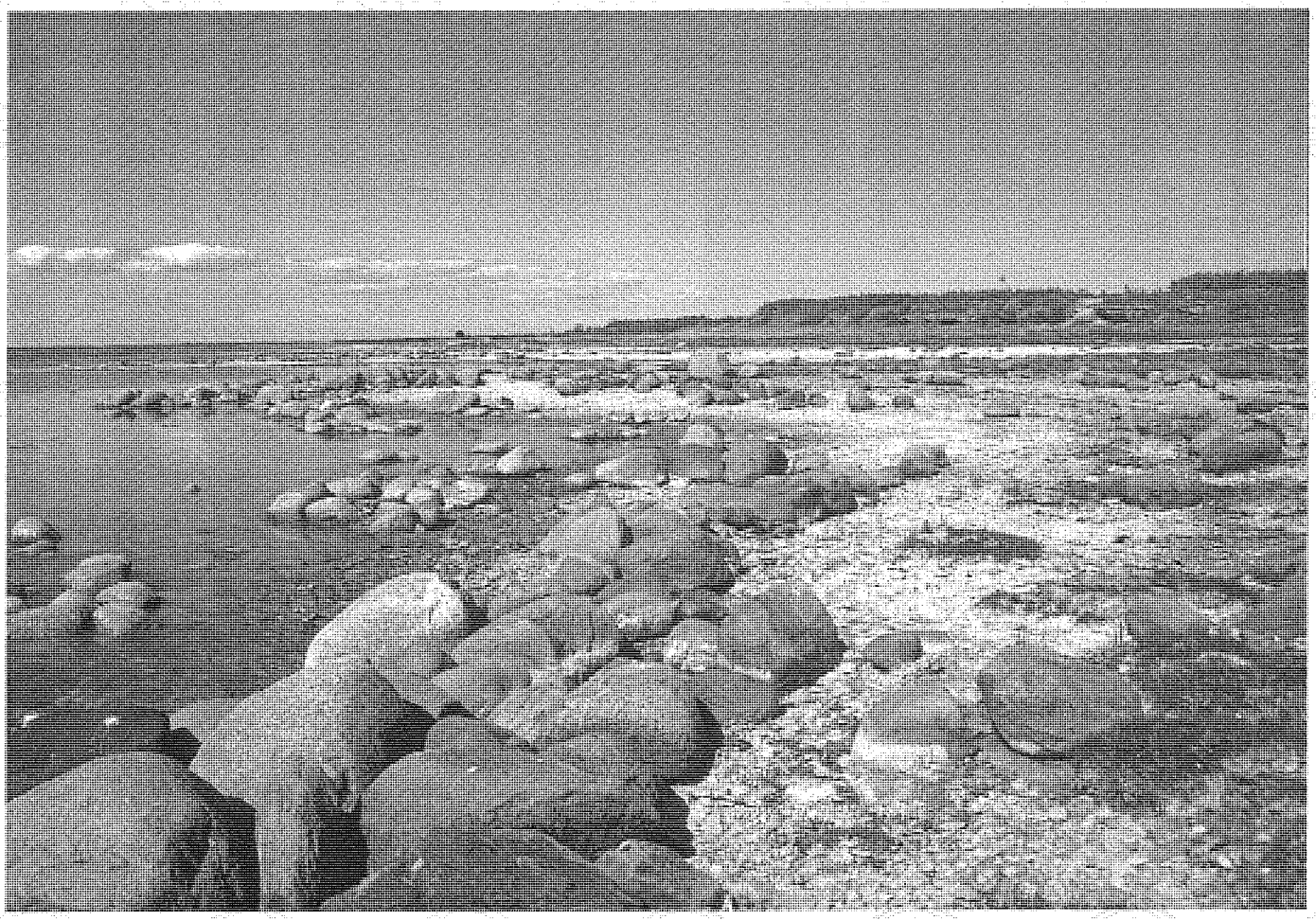
Katarina Krivic



The western shores of the Sõrve Peninsula, Saaremaa island, Estonia. Flat Silurian beds with ripplemarks overlain by crystaline glacial erratics from the north.

Adresses

Kristina Fredriksson
Annika Jansson
Carl Erik Johansson
Rune Frisén

Swedish Environmental
Protection Agency

Blekholmsterassen 36
S-10 648 Stockholm

Sweden

Curt Fredén
Lars Karis

Geological Survey of Sweden

Box 670
S-75128 UPPSALA

Sweden

Afat Serjani
Nevila Jozja

Institute of Geological Research

Blloku «Vasil Shanto»
Tirana

Albania

Katarina Krivic

Natural History Museum of
Slovenia

Presernova 20
1000 Ljubljana

Slovenija

Deadline for contributions to next issue of ProGEO NEWS: **15.09. 1997**

Pro Geo: 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:** 30 DM/yr.
President: Dr T. Todorov, Geological Institute of Bulgarian Academy of Sciences, George Borchov St. 24, Sofia 1113. Bulgaria. Executive secretary: W.A.P. Wimbledon, Countryside Council for Wales, Unit 4, Castleton Court, Fortran Road, St Mellons, Cardiff CF 3 0LT, UK.
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 22 94 03 00, Fax: +47 22 94 03 01, e-mail: lars.erikstad@ninaosl.ninaniku.no. Contributions prefered on diskette (ASCII-format) or by e-mail if possible

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