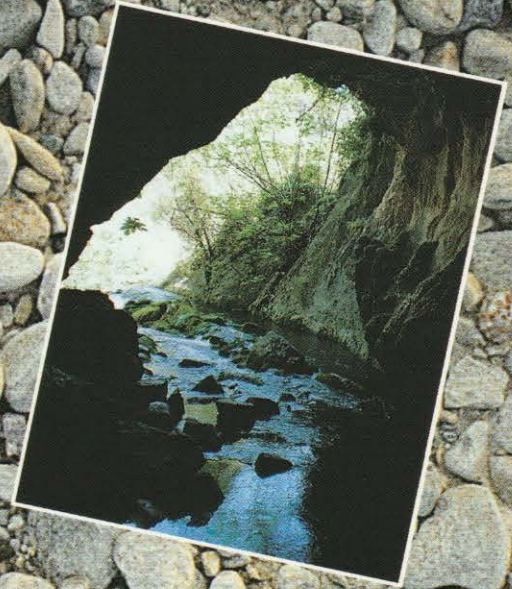


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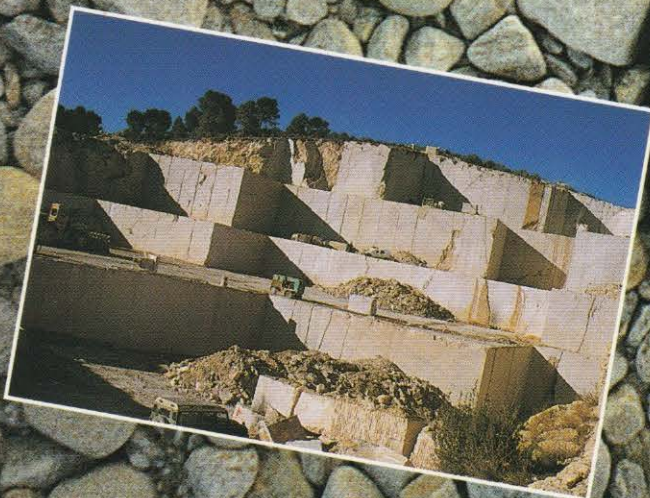
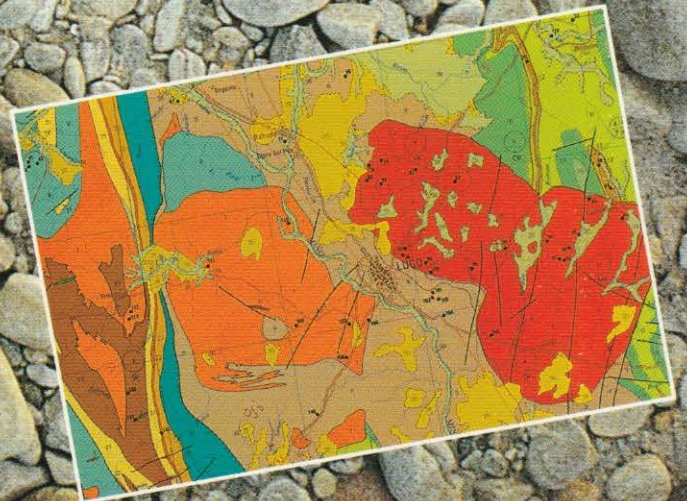
European Geologist

Journal of the European Federation of Geologists



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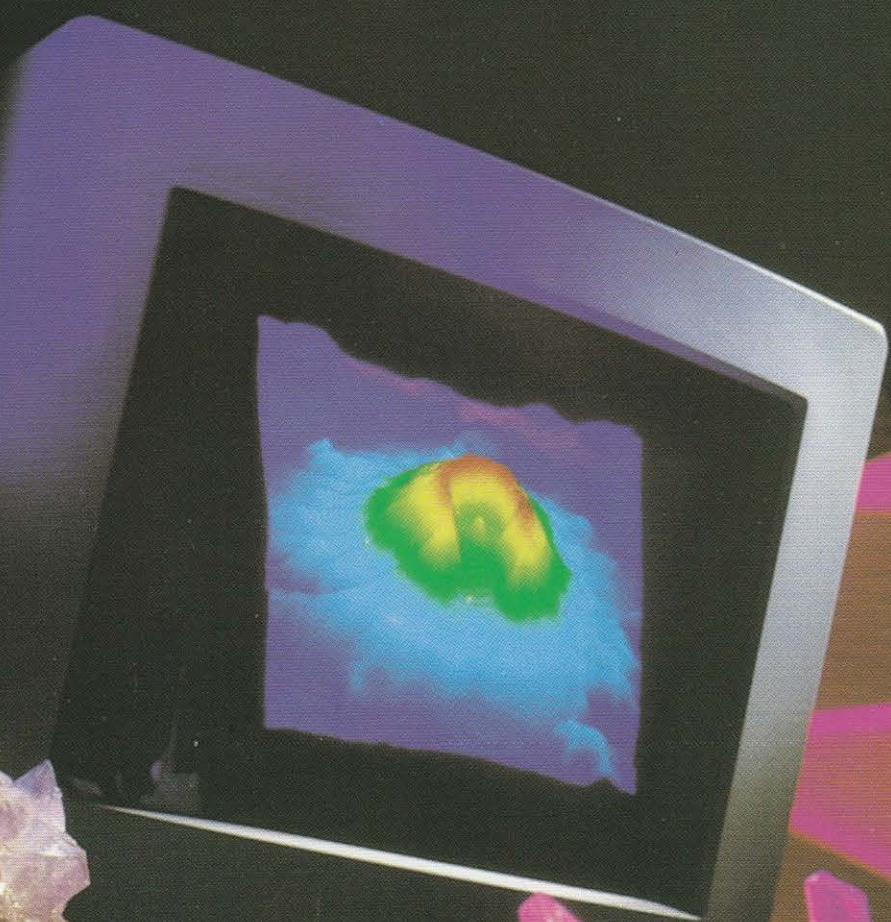


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This is the first issue of the European Geologist Magazine. It is one of the EFG efforts in marketing the Federation. The Magazine also pretends to introduce the conception of the European Geologist Title to the public.

There are many magazines for geologists serving to the purpose of giving information on what is going on. Most of those magazines are scientific and include geological news regarding conferences and professional matters as well as articles on social subjects of concern to geologists.

Most magazines today are published by associations from the academic and scientific world. Therefore I think there is a need for a magazine with an even influence from professionals from the industry and the administration.

I hope that the European Geologist Magazine will be the ideal forum for that mixture of debate, science and professional matters, where every geologist will feel at home, and that it will also be read by readers outside the sole geological sphere.

Last but not least, the European Geologist Magazine will be a very good way of bringing forward the statements and policies of the EFG, as the single voice for professional geologists in Europe.

Gunnar Hultquist

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EUROPEAN FEDERATION OF GEOLOGISTS (E.F.G.)

by Gunnar Hultquist
President of EFG

This is the first issue of the European Geologist Magazine. It is one of our activities in the marketing of the European Federation of Geologists (EFG). The idea of starting a Magazine about professional geology originates from our vice president Manuel Regueiro and he is the editor today.

Organization

The EFG is an umbrella group for geology and today the Federation is constituted by 13 national associations for professional geologists. The EFG currently represents some 65.000 geologists from 13 countries.

The EFG was officially born in Paris 1980 and has today its office in Paris (*Jean-Claude Vidal, adm. secr.*). The Federation is run by a Council consisting of two delegates from each country. From these delegates, for a three years term, the officers are elected consisting of a President (*Gunnar Hultquist, Sweden*), Vice President (*Manuel Regueiro y González-Barros, Spain*), Secretary-Treasurer (*Gareth Jones, Ireland*) and EU Representative (*Jean-Marc Debaty, Belgium*).

EFG Council Meetings are held twice yearly, the venue rotating between the member countries and the official languages are English, French and Spanish.

Aims

You can summarize the aims of the



EFG Presidents' meeting London. 1993.

Federation into two statements. The aims of EFG are:

to Affirm the Professional Identity of Geologists of Europe,

to Strive for the Federation to be a single voice for professional geologists of Europe.

To fulfill these aims, EFG has established the European Geologist (*Eur. Geol.*) title. The title was launched in London June 1993. This qualification today is the preferred one for professional geologists work in Europe and even an accepted qualification in the U.S.A.

To carry out the second aim the EFG has special committee to maintain contacts with officials and politicians within the EU. The Committee, CGEU, has its office in Brussels

at the Belgium Geological Survey. EFG also seek active cooperation with other professional organisations to promote European Geologists matters.

Activities of the Federation

During its 14 years of existence, the EFG has produced a number of reports and documents dealing with professional matters and with issues of resources in the European context, on the following subjects:

Energy Dossiers

The first activity of the Federation was the compilation of two dossiers containing an assessment of five ty-



EFG Board meeting, Paris, Sept. 1993.

pes of energy predominant in the European scenario: oil, coal, uranium, geothermal and hydroelectric energy.

Strategic Minerals

EFG made a careful study of the situation on strategic minerals in the Federation member countries and then wrote a letter to the E.C. Secretariat in Brussels suggesting that the Community should reduce its dependence on outside sources of these minerals. It also stressed that further geological investigations in Europe were an essential part of assessing the available resources and reserves of the strategic mineral potential.

Geological Mapping

Exchange of information between EFG delegates has revealed the inadequate number of basic geological maps for European countries. It has been suggested to the Commission that a network should be set up in Europe to draw together representation of all those involved in geological surveying, whether as academics, industrialists, or state-survey employees, to discuss and, where possible, to coordinate mutual advantage their technical knowledge, data dissemination, user demands, and present scales of operations.

Education and Employment

The concern of the EFG with regard to mutual recognition of geological qualifications in Europe was reflected in the Education Dossier which was prepared by EFG in 1985 and circulated to the member associations at that time.

An important concern of EFG is, through its membership, to consider the problems of unemployed geologists, and how new fields of employment can be established. The application of geology to environmental issues is a key area for the future, with emphasis on applied geology.

Environment and Geology

One of the aims for the Federation is to establish long-term policies concerning environmental matters. As a part of this EFG prepared a dossier about Groundwater pollution which was presented to the European Parliament in November 1992.

At our last Council Meeting in Athens Nov. 94 a dossier with the title «Geology and the Human Environment in Europe» was discussed. It is the intension of EFG to present this dossier to E.U. during the autumn this year in Brussels.

Code of Professional Conduct (Deontology)

One of the early activities of the Federation was the drafting of a code summarizing the principles, standards and rules that apply to individual geologists and their professional conduct. The code was ratified in 1984.

European Geologist Title

To maintain free movement of geologists in Europe with mutual acceptance of academic and professional qualifications the EFG Council 1992 signed the regulations for the European Geologist title.

To receive the title of European Geologist (Eur. Geol.) you must ful-



Council Meeting of the EFG, Athens, November, 1994

fil the general conditions of four years of higher education and three years of professional experience. In the end of 1994 there were round 50 holders of the title.

Activities of current importance

The Federation is currently trying to expand and have today many contacts with associations in the eastern parts of Europe. But due to economic circumstances at present they prefer to stay as observers.

The EFG has close contacts with the engineers and their European Federation, FEANI, and with the Geological Surveys in Europe through their organization, FOREGS.

The EFG Officers are regularly meeting representatives for other

professional organizations e.g. biologists (ECBA), chemists (ECCC) and environmentalists (EFEP).

The Federation also has an active co-operation with the professional geologists in the U.S.A. and their institute (AIPG).

Working Groups

Within the EFG Council the delegates are organized in three working groups to prepare dossiers for items of importance:

Environment and Geology

A draft dossier is presented, as mentioned above, and the working group is planning a further dossier on «Responsibilities in the less developed world». This group also co-

llaborate with *COGEOENVIRONNEMENT* and *PROGEO*.

Engineering Geology

This group is working on a dossier with several items e.g. Engineering Geology Practise. Environment and risk with case studies from member countries. This group is also working on a compilation of the legislation concerning engineering geology.

Mineral Resources

This working group has started its work with a compilation of Mineral Legislation for the member countries. It is also working on a standard classification and terminology for presentation of different kinds of mineral reserves. ■



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AIMS AND ORGANIZATION

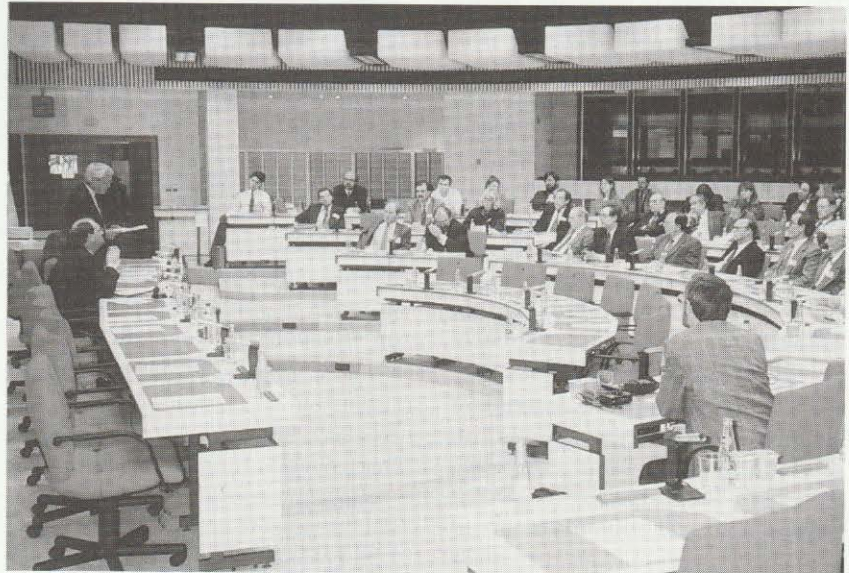
Why Do We need the EFG?

There are many areas of concern to geologists where a Europe-wide approach can bring benefits to individual geologists and their national organizations. For instance, geologists in many European countries have a growing interest in the question of professional registration, certification and accreditation; some look with envy at those engineers whose profession is regulated by laws, which mean that unqualified people cannot function as professionals. In some cases, geologists are even prevented from signing legally-acceptable reports, precisely because of the lack of regulations for geology. In the United States there are several organizations that address these concerns, and now in Europe there is the EFG, which acts as an umbrella group to link national professional institutions geology.

The Founding of the Federation

The idea of an organization of European geologists to co-ordinate professional representation, standards and policies was first raised in March 1977 by Gérald Clement, then President of the Union Française des Géologues (UFG).

The first meeting of a European Communities Geology Committee was held at Burlington House, London, in July 1978. The hosts to the meeting were the Institution of Geologists (IG), with its chairman Colin Bristow and John Shanklin, chairman of the IG External Relations Committee, playing a major role. Taking the Chair at the meeting was Gérald Clement, supported by Etienne Colas des Francs, the



Former EFG President Eur. Geol. Richard Fox addresses members of the European Parliament during an EFG presentation.

succeeding UFG President; also present were Santiago Leguey and José Verdejo, President and Vice-President of the Asociación de Geólogos Españoles (AGE, Spain); Enrico Barbier representing the Ordine Nazionale dei Geology Italiani (ONGI) of Italy; Peter Brück from the Republic of Ireland, and five other members of IG.

Initial Aims and Proposals

The participants of the initial meeting in 1978 agreed upon the following aims:

- Representation of the profession to the European Community (EC).
- Promotion of the free movement of geologists throughout Europe, both within and outside the Community, by mutual recognition of qualifications and harmonization of educational standards.
- Regulation of degrees, diplomas and titles of geologists.

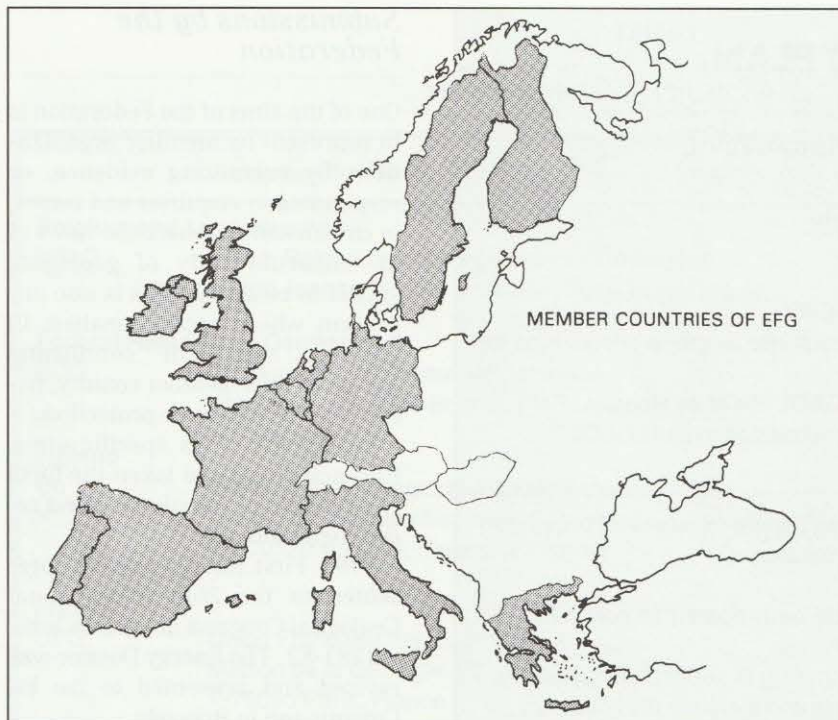
- Establishment of a common code of professional conduct.

- Long-term promotion of common policies concerning, for example, energy and mineral resources, groundwater, and the environment.

The participants unanimously agreed to keep professional matters separate from educational and scientific matters. They also agreed to contact persons and groups in those countries where no professional association then existed, in anticipation of their eventual formation. It was also agreed that the Committee should concern itself with matters for all Europe and not just the countries of the European Community.

Formation and Membership

At a second meeting in March 1979, held in Paris at the Maison de la Géologie, four more national organizations were represented: the



Associazione Nazionale fra i Geologi Italiani (ANGI), the Associação Portuguesa de Geólogos (APG, Portugal) and the Union Belgo-Luxembourgeoise des Géologues (UBLG, Belgium and Luxembourg). The title «European Federation of Geologists» was approved, and the constitution was finalized at the next meeting in Madrid in November. The EFG Secretariat was first housed in the IG office in Burlington House, London, but in 1980 was transferred to the UFG office in Paris. The Federation was formally inaugurated during the 26th International Geological Congress in Paris in that year.

By the end of 1989, the Federation had grown considerably by the addition of the Bundesverband Deutscher Geologen (BDG, Federal Republic of Germany) in 1985, the Irish Association for Economic Geologists (IAEG) in 1988, and the Geologiliito-Geologförbundet i Finland r.y (GL, the Finnish Union of Geologists) together with the Geology Section of the Sveriges Naturvetareförbund (SN, the Swedish Association of Scientists) in 1989. In 1990 the reunification of the Institution of Geologists with the Geological Society (GS) in the United

Kingdom has meant that professional geology is now represented by the latter organization.

Contacts have also been made with Austria, Denmark, Hungary, Norway and Switzerland, with encouraging indications that these countries are serious in their desire to join the EFG. Only the lack of existing professional bodies prevents the representation of those countries on the Federation Council.

Table 1 lists all the organizations that now make up the Federation.

In Table 2, it can be seen that they group together about 65,000 geologists in thirteen countries.

Organization of the Federation

The Federation is run by a Council consisting of two delegates from each country. From these delegates, the officers are elected consisting of a President, Vice-President, Secretary-Treasurer and EC Representative. Meetings are held twice yearly, and the official languages are English, French and Spanish.

Financial arrangements are simple, with a levy on each member institution and flexible arrangements for those countries that have only recently created a professional organization. The annual dues are used to operate the office in Paris and the General Secretariat, and to provide services to all members. However, the considerable support from various companies employing the representatives is also gratefully acknowledged.

Membership of the Federation: Rules for Admission

1. Any national organization, whose principal aims are the advancement of the profession of geology and the interests of geologists, may apply for membership.



Council Meeting at Lisbon. November. 1993.

STRATEGIC PLAN

ACTIVITY PROGRAMME

Aim: To affirm the Professional identity

Activities:

1.
 - a) Actively increase membership of EFG.
 - b) Seek bilateral agreements with countries or group of countries for crossrecognition of qualifications.
 - c) Persuade members to use EUR GEOL title at all times.
 - d) Maintain standards rigorously for admission to EUR GEOL.
 - e) Achieve a Geologists' Directive
2.
 - a) Prepare dossiers and EFG position papers on issues of public concern and publicize in appropriate media.
3.
 - a) Identify areas where EFG should be prepared to comment and agree the policy.
 - b) Identify individuals and provide training or support as necessary.
 - c) Prepare relevant Policy Statements and maintain their currency.
4.
 - a) Develop active programmes commercial activity.
 - b) Develop sales of Mailing Lists and Directories.
 - c) Arrangement of seminars with other professional bodies.
 - d) Funding from industry.

Aim: To be a single voice for geologists

1.
 - a) Seek ways of permanently linking into EU political and media networks.
 - b) Be prepared to act rapidly to media requests.
 - c) Set up a Data Bank to provide relevant statistical information.
2.
 - a) Identify European organizations with common aims and develop liaison arrangements and linked policy approaches.
 - b) Investigate possibility of joint meetings or conferences.
3.
 - a) Maintain and expand links with international geologist organizations outside Europe.

2. Each member organization may be represented by up to two delegates who will be elected by the members of the appropriate national organization or organizations. Each delegate must be a member of the relevant organization.

3. In the case of those countries which do not have a national organization with aims meeting the above criterion, any national association generally representing geologists may apply to the EFG for permission to take one or two delegate-observer positions for that

country. Such authorization will be granted for a period sufficient to allow that association to meet criterion 1 but, until the principal aims set by EFG are achieved, it may not be considered as a full member. However, any appropriate association in that country may participate as an observer (or associate member).

4. The EFG may accept provisionally, suspend or definitely exclude a national association from membership by a two-thirds majority of delegates at a plenary meeting.

Submissions by the Federation

One of the aims of the Federation is to represent its member organizations by submitting evidence, or responding to enquiries and issues, in circumstances where the views of an impartial body of geologists should be heard. This is also important where professionalism in geology, either in continental Europe or in a member country, needs representation or protection.

In support of its specific aims, EFG activities have taken the form of a number of submissions and recommendations:

1980 First Energy Dossier, presented to the 26th International Geological Congress in Paris in June.

1981-82 The Energy Dossier was revised and presented to the EC Commission in Brussels.

1983-94 Submission of a Second Energy Dossier to the Vice-President of the EC Energy, Research and Technology Committee. EFG expressed its concern regarding the limited number of research projects on alternative energy sources such as geothermal energy and gasification of coal, together with a recommendation of a better understanding of existing energy sources in Europe.

1985 Submission to the Vice-Presidents of the EC Committees (Energy and Agriculture) of a report pointing out that the Community is highly dependent on other countries for its supply of strategic minerals, particularly those that are present in very limited quantities or are entirely absent in the Community so that it has total dependence on imports.

1985 Submission to the Vice-President of the EC Commission (Research and Science) for a project on Geological Mapping, proposing that a new European network of harmonized geological maps should be set up and defined by representatives of member organizations and other interested bodies such as geological survey departments and mining companies. The representatives, which could include academics, industrialists, consultants and state-survey employees, would co-

Table 1

MEMBER ORGANIZATIONS OF THE EFG










Member Countries and Organizations		Date of Inauguration	Logo
Belgium and Luxembourg			
UBLG	Union Belgo-Luxembourgeoise des Géologues, 13 rue Jenner, B-1040 Bruxelles, Belgium (Belgique)	1980	
Federal Republic of Germany			
BDG	Bundesverband Deutscher Geologen, Ahrstrasse 45, 5300 Bonn 2, FRG (Allemagne)	1984	
Finland			
GL	Geologiliitto-Geologförbundet i Finland r.y., Akavatalo, Rautatieläisenkatu 6, SF-00520 Helsinki, Finland (Finlande)	1954	
France			
UFG	Union Française des Géologues, Maison de la Géologie, 77 rue Claude-Bernard, F-75005 Paris, France	1965	
Greece			
AGG	Association of Greek Geologists Didotou 26, 10680 Athens (Greece)	1965	AGG
Ireland			
IAEG	Irish Association for Economic Geologists, c/o Geological Survey of Ireland, Beggars Bush, Dublin, Republic of Ireland (Irlande)	1973	
Italy			
ANGI	Associazione Nazionale fra i Geologi Italiani, via C. Battista no 4, I-20122 Milano, Italy (Italie)	1948	ANGI
ONGI	Ordine Nazionale dei Geologi, 22 via della Conciliazione, I-00193 Roma, Italy (Italie)	1966	ONGI
Netherland			
KNGN	Royal Geological and Mining Society of the Netherlands Posthus 157, 2000 AD HAORLEAN (Netherland)		KNGN
Portugal			
APG	Associação Portuguesa de Geólogos, Apartado 2109, P-1103 Lisboa cedex, Portugal	1976	
Spain			
AGE	Asociación de Geólogos Españoles, Reina Victoria, 8-4.º B, 28003 Madrid (Spain)	1965	AGE
ICOG	Ilustre Colegio Oficial de Geólogos Reina Victoria, 8-4.º B, 28003 Madrid (Spain)	1979	
Sweden			
SN	Sveriges Naturvetareförbund (Geology Section), Box 760, S-13124 Nacka, Sweden (Suède)	1971	
United Kingdom			
GS	Geological Society, Burlington House, Piccadilly, London W1V 0JU, UK (Angleterre)	1807	

Table 2
EMPLOYMENT STATISTICS FOR GEOLOGISTS IN EFG COUNTRIES

Member Countries	Population (millions)	Number of Practising Geologists		Annual Movement of Geologists		Unemployed Geologists
		Members of Professional Associations	Total Number ('Estimated)	Number of Graduates from Higher Education	Number of Possible Geological Vacancies	
Belgium and Luxembourg	10.3	234	1,100	40	34	1,000
Federal Republic of Germany	80	2,300	25,000	900	100	1,000
Finland	5	468	580	45	10	47
France	56.4	750	6,000	400	250	85
Greece	10.1	1,646	3,600	250	100	1,700
Ireland	4.5	250	300	80	25	10
Italy	57.7	7,000	10,000	700	350	1,500
The Netherlands	15.2	1,200	2,000	60	8	100
Portugal	10.4	830	1,400	80	24	3
Spain	39	1,750	5,000	500	200	600
Sweden	9	592	800	1,200	30	67
United Kingdom	57.4	5,000	9,000	40	34	1,000
Totals for Member Countries	355	22,020	64,680	4,315	1,307	5,505

ordinate their work, taking into account technological innovation (computer databases and mapping techniques) and user demands (in regard to map scales, themes, etc.).

1986 The Code of Professional Conduct (Deontology) was published and widely circulated. Copies of the English texts is attached as Annex A.

1986-89 Preparation of a statement on the granting of a title of «European Geologist» which was widely circulated to Members of the European Parliament. This proposal endorsed the situation whereby the holder of a valid degree in Geology granted in one of the EC Member States will enable that person to receive the title «European Geologist» provided that he or she fulfils the general condition of four years of education and three years of professional experience.

1989 Presentation at the 28th International Geological Congress held at Washington DC (USA) of a paper on the «Activities of the Federation» and establishment of re-

lations with the American Institute of Professional Geologist (AIPG).

1990 Presentation lecture of the President of the EFG at the Conference of the Irish Association of Economic Geologists on the «Professional Geology in Europe». The conference was formally opened by Mr. Robert Mallory, Ministry of Energy.

Address to the delegates of the Annual Meeting of the American Institute of Professional Geologists on the «Professional Geology in Europe and the Common Market». Long Beach, California (USA).

1991 Presentation of «The Geological Sciences and their Applications at the European Union» at the International Trade Fair and Congress for Geo-Sciences (Geotechnica) in Cologne (Germany) and at the Annual Meeting of the German Association of Geologists.

1992 Lecture at the Spanish National Geological Congress (Salamanca, Spain) on «Employment opportunities for geologists in the European Common Market in rela-

tion with the new geological areas, future investments and research».

Annual meeting of the American Institute of Professional Geologists at Lake Tahoe, Nevada (USA). Presentation of the President and Vice President of the EFG on «Professional Geology in Europe».

First Annual Conference on the Profession of Geologists at Pesaro, Italy. Presentation by the President of the EFG on «Geology in Europe».

Presentation of the report «Geology and Environment: Underground water pollution» to the Committee on Environment, Public Health and Consumers Protection of the European Parliament at Brussels.

1993 Conference of the President of the EFG at the Association of Biologists of the European Communities in London on «The European Geologists».

Presentation of the President of the EFG at the FEANI Council at Lausanne (Switzerland) on «Relations between european geologists and engineers». ■

Annex A

CODE OF PROFESSIONAL CONDUCT OF THE EUROPEAN FEDERATION OF GEOLOGISTS

Preamble

Geology is a science that deals with the composition, structure, resources, history and evolution of the Earth and the application of the science. The practice of geology is a profession for those who possess the necessary qualifications and/or professional experience recognised by their appropriate national body or under the law, and whose living comes essentially from such work.

General Principles

1. All geologists following this code must pay regard in their professional conduct to the standards and to the spirit of the following clauses, so as not to harm the dignity of the profession.
2. The privilege of exercising the profession of geology demands the highest standards of integrity, morality, professional conscience and moral responsibility.
3. The geologist is responsible for the impression he gives of his profession in the opinion of those around him and of the public at large.
4. The geologist is obliged to maintain professional secrecy, and to protect third parties.

Relations with other Geologist

5. The rules of loyalty and honesty should control the actions of the geologist towards his colleagues, his employers and to third parties with whom he is in contact. In particular he is required not to divulge information liable to discredit another colleague.
6. The geologist must not put his name to anything that is untrue, nor make agreements that prejudice his client's position.

Relations with Clients

7. The geologist must always inform his client of the true limitations of practical results that might be obtained from a given professional assistance, especially if it implies increased costs for the client.

8. The geologist must avoid any sort of negligence in the practice of his profession, especially when this gives rise to risks or of material or moral damage for his client or for the environment.

9. The geologist must not alter, or deny the existence of, facts or accepted technical or scientific truths which could thereby favour a client or mislead the public.

10. a) The geologist must not promise or broadcast specific professional advice that cannot be supported by a genuine, objective possibility, nor seek to publicise professional qualification that he does not actually hold with the aim of keeping his client from going to other professional colleagues.

- b) The geologist must refer, or advise reference, to the help of other specialists whenever the interests of his employer or his client are thereby better served. He must, in his conclusions, distinguish between his own work and that of his colleagues.

- c) If, after having given his advice, a geologist becomes aware that it will not be entirely followed, he should regardless of his own position inform the relevant person of the foreseen risks.

11. The geologist should not take on the functions of an expert in fields of interest other than his own to one of his regular clients or one for whom he has already given advice.

Applications of this Code

12. The present code of conduct applies to all geologists belonging to one of the professional associations that are members of the European Federation of Geologists.

13. It must be observed in all countries where geologists practice, as defined in clause 12 above.

14. If a recognised code of conduct exists locally the geologist should observe it, provided its scope or standards are not inferior to those of the present code.

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EFG CALENDAR

June

- 9 EFG/FOREGS Boards joint Meeting Dublin
Board and working Group Meetings, Dublin Press statement
Geological Survey of Ireland, 150th anniversary Reception
- 10-11 Council Meeting, Dublin (notice as statutes 5.5)

August

- Paris office distributes Dublin minutes JCV
- 31 Last day for receipt by Paris Office of applications for EurGeol, for consideration for approval at the December Council Meeting EFG

September

- 2 Last day for receipt by Paris office of papers from delegates for consideration by the board in Brussels EFG
- 5 To delegates: list of EurGeol candidates to be considered by the Registration Committee, for recommendation to the December Council meeting JCV
To Board: Agenda for Board Meeting JCV, GH
- 9 Board Meeting, Brussels including budget preparation -but may move to coincide with Europarlament dossier presentation
- 15 Last day for receipt by Editor of European Geologist Magazine of papers for the December issue M.R.

October

- 1-5 AIPG Denver
- 20 Last day for typed agenda items to reach Paris office EFG

November

- 5 Council Agenda, Budget & papers to delegates JCV
- 17 Official letter of recommendation from Registration Committee to Paris office of recommendation for award of EurGeol Titles RC

December

- 1 Board and Working Groups Meetings, Paris
- 2-3 Council Meeting, Paris

1996

- March Board Meeting, Paris
- June Council Meeting, Netherlands
- September Board Meeting, Brussels

This Diary constitutes notice of Council Meetings in accord with the Statutes point 5.5

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 13 rue Jenner
 B-1040 BRUXELLES (BELGIUM)
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 B-1495 VILLERS LA VILLE (BELGIUM)
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 rue de l'industrie, 52
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Members of the EFG Council at the Geological Survey of Belgium, during the Council meeting held in Brussels in Nov. 1992.

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 Labo géologie Struct. et App., Bât. 504
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 Gareth Ll. JONES
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Richard Fox (Past president of the EFG) addresses the Council during a reception (G. Clement & R. Zia also past presidents of the Federation near him). Lisboa. Nov. 1993.



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*EFG members during
 the Council meeting at
 the National
 Geological Congress
 held in Salamanca
 (Spain) in June 1992.*

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prof: GPEP
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*Council meeting.
Helsinki. June 1993.*

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*EFG Council meeting
at Helsinki. June
1993.*



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THE FIRST NINE EUROPEAN GEOLOGISTS

The title of European Geologist and a Registration Committee to oversee applications for it were organised by the EFG a few years ago. Franz Goerlich was its first Chairman and with the late Luciano Broili and with José Carvalho and John Shanklin as committee members vetted the applications and made their recommendations to Council. Eventually after advertising the title, encouraging delegates to set up National Vetting Committees and to sell the European ideal, we received applications which were vetted, recommended and finally elected by the Council in Lisbon in November 1993.

It was entirely appropriate that the first European Geologist to be elected was Eva Paproth. She is a past German delegate to the EFG, past Chairman of the BDG, and distinguished in her field as a Carboniferous stratigrapher. The other eight EurGeols are all members of the IAEG due to the coincidence of the establishment of professional geology on both a national and an European basis in Ireland. These 9 EurGeols are featured below as we experiment with the evolution of the Directory of European Geologists.



*Presentation of Eur.Geol. Certificate n.º 1 to Eva Paproth (BDG).
London. June 1994.*

*Eur.
Geol.*

1. PAPROTH, Eva
Chairman BDG
Schwanenburgstrasse 14, D-47804 Krefeld, Germany
tel + 49 21 51 71 07 14; fax + 49 2151 71 07 74
Freiburg, PhD h. c. mult. Göttingen, PhD TCD 1993
1953-1990 Devonian and Carboniferous stratigraphy and paleogeography in the Geologisches Landesamt Nordrhein-Westfalen, Krefeld.
1989-1993 Chairman Berufsverband Deutscher Geologen, Geophysiker und Mineralogen.
CAT: Dev Carb Strat, Paleogeog Europe.

*awarded
country*

15.12.1993
Germany



2. ASHTON, John H.
Assistant Chief Mine Geologist

15.12.1993
Ireland

Outokumpo Zinc Tara Mines Ltd., Navan, Co. Meath, Ireland
tel + 353.46.21927; fax + 353.46.23473
1975 BSc ARSM, 1978 PhD UCW Aberystwyth, PMIAEG 1992
PhD, geology / geochemistry of Pb, Zn & Au veins. 1978-1980 Mogul of Ireland, Silvermines. 1980-1994 Tara Mines Ltd. responsible for the underground geological operation, computerisation and reserves. Also involved with economic geology research. 1986 President of IAEG.

CAT: Mining Geol, Econ Geol Res

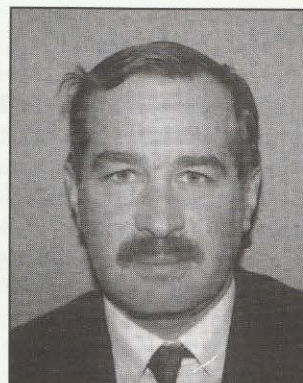


3. COLTHURST, John R. J.
Consultant Geologist

15.12.1993
Ireland

Black Hall, Clane, Co. Kildare, Ireland
tel + 353.45.68868; fax + 353.45.68934
BA Mod 1st TCD 1972, PhD TCD 1977, PMIAEG 1993
Worked for Dresser Minerals and Billiton before becoming a consultant in 1984. Specialises in mineral exploration programmes for base metals, gold and industrial minerals for Irish and multinational companies.

CAT: Min Expl Prog, Ind Min



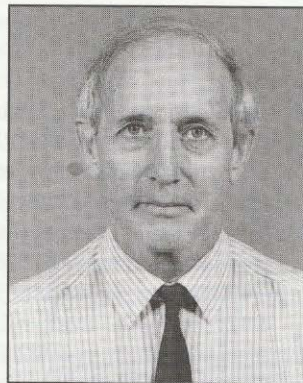
4. DEMPSTER, Alan N.
Senior Geological Consultant, CSA Ltd.

15.12.1993
Ireland

«Fir Trees», Murray Place, CRIEFF, PH7 3DF, Scotland, UK
tel/fax + 44.764.652183
BSc, PMIAEG 1993

Forty years experience in all aspects of mineral exploration, evaluation and development, chiefly in Africa. 1963-1984, seven mineral projects in Africa and Asia for United Nations. Since 1987, responsible for CSA's international projects.

CAT: Min Expl, Eval Dev Africa, Asia



5. GRENNAN, Eamonn F.
Consultant Geologist

15.12.1993
Ireland

Natural Resource Consultants, 5 Melrose, Nenagh, Co. Tipperary, Ireland
tel/fax + 353.67.31758; fax + 353.67.33748
BSc 1966, Dip Adm Sc, MIMM, Grad Dip Env Prot, PMIAEG 1992
Worked for International Mogul, New Jersey Zinc and Dresser Minerals.
1983-1994 consultant in North and South America, Australia, Europe on exploration for and evaluation of base metal, gold and industrial minerals and on environmental impact assessment. 1975 President of IAEG.

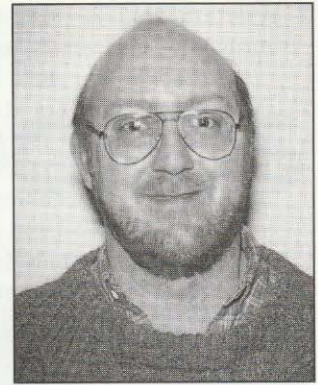
CAT: Min Expl Man, Env Imp Assess



6. HITZMAN, Murray W. 15.12.1993
U.S. Congressional Fellow Ireland

3017 Dumbarton Ave. NW #2, Washington, DC 20007-3306, USA
BA Dartm'th 1976, MS Washington 1978, PhD Stanford 1983, PMIAEG 1993
1976-82 with Anaconda in western US and Alaska, 1982 with Chevron in Canada, Brazil, Papua New Guinea, Spain Germany, Italy; 1984-93 in Ireland with discovery of Lisheen Zn-Pb-Ag deposit in 1990. 1993-94 Congressional Fellow of Geological Society of America, with Sen Lieberman on environmental, science and technology issues.

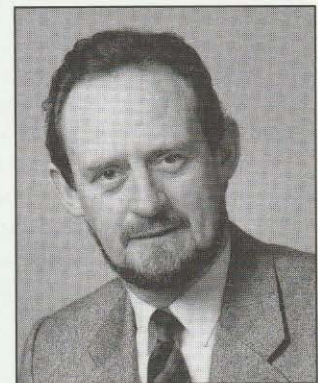
CAT: Min Expl, Env Sci Tech Policy



7. MELDRUM, Andy H. 15.12.1993
Managing Director Ireland

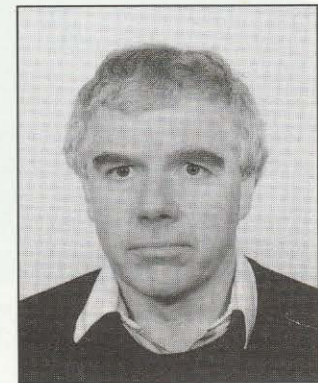
Gleniff Exploration and Mining (Irl.) Ltd., 217 Clontarf Road Dublin 3.
BA Mod TCD 1965, MIMM, C Eng 1972, PMIAEG 1992.
tel + 353.1.833 3323; fax + 353.1.833 4126
1965-90 Northgate Exploration Ltd., all aspects of mineral exploration & development in W Europe, N & S America & Australia. 1990-94 Gleniff Exploration & Mining, mineral property assessment & development, exploration programme management & feasibility study assessment in Europe, Australia & S. America. 1979 President IAEG.

CAT: Min Expl Dev, Ind, Min Assess, Min Proj Fin



8. PYNE, John F. 15.12.1993
Senior Geologist Ireland

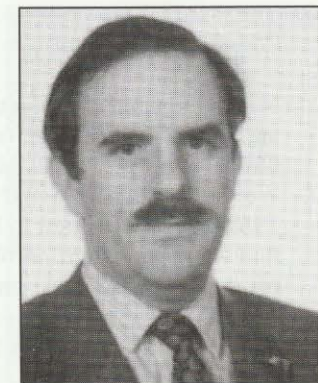
Exploration Mining Division, Dept. Transport, Energy & Communications, Beggars Bush, Haddington Rd., Dublin 4, Ireland.
tel + 353.1.671 5233, fax + 353.1.660 9627
BSc UCD 1969, MSc TCD 1972, PMIAEG 1992
1966-71 field assistant, geologist, base metal explor. co.s Ireland. 1971-75 Assistant Geologist, 1975-92 Geologist, Geological Survey Ireland (GSI).
1992 Senior Geologist, Exploration & Mining Div. (EMD), Dept of Energy.
1977-92 tech. eval. mineral exploration activity & promotion min. explor. in Ireland in GSI, in 1992 this transferred to EMD. 1983 President IAEG.
CAT: Eval Promo Min Expl Ireland



9. SCHAFFALITZKY de MUCKADELL, Christian 15.12.1993
Managing Director Ireland

Crowe Schaffalitzky & Associates Ltd., Parkview House, Beech Hill, Clonskeagh, Dublin 4, Ireland.
tel + 353.1.269 4110; fax + 353.1.269.4424
BA Mod TCD 1976, MMI, PMIAEG 1992
1976-83 Elf Aquitaine minerals division, mainly in Ireland. 1983 founded CSA, international geological consultancy group. Involved in exploration management, technical audits and corporate advice on mineral investments. 1984 President IAEG.

CAT: Expl Man, Tech Aud, Corp Advice Invest



GEOLOGICAL SURVEY OF IRELAND CELEBRATES 150 YEARS OF SERVICE

by Peadar McArdle

Director of the Geological Survey of Ireland

The Geological Survey of Ireland (GSI) is not the oldest geological survey in Europe, but it does have a long history of service to its customers. The 1840s were turbulent years throughout Europe, not least in Ireland where the Great Famine ravaged the population and left a legacy that is still discernible.

It was against this broader backdrop that the GSI was established in 1845.

The organisation was set the tasks of understanding Ireland's geology and, additionally, of determining the extent of its mineral resources. In response, GSI during the next fifty years published a set of bedrock maps which fully covered the island of Ireland. The maps were on the scale of one inch to one mile (1:63,360) and were underpinned by detailed mapping on the scale of 1:10,560. Ireland may have been the first European country to have completed national coverage on so detailed a scale.

After this remarkable achievement, GSI entered a relatively dormant period, starting from 1890, and marked by reduced staff numbers. Nevertheless it achieved quite a range of accomplishments, including several economic studies of coal, gypsum and sulphides during the 1940s and succeeding years. This work stimulated commercial mineral exploration and its success in turn was responsible for the revitalisation and expansion of GSI in the 1960s and 1970s.

During this period GSI took on the varied functions of a modern geological survey - groundwater, Quaternary as well as bedrock mapping, geochemistry and geophysics, offshore geology, and the full range of mineral resources. In this way the organisation enhanced its relevance to the society it serves.

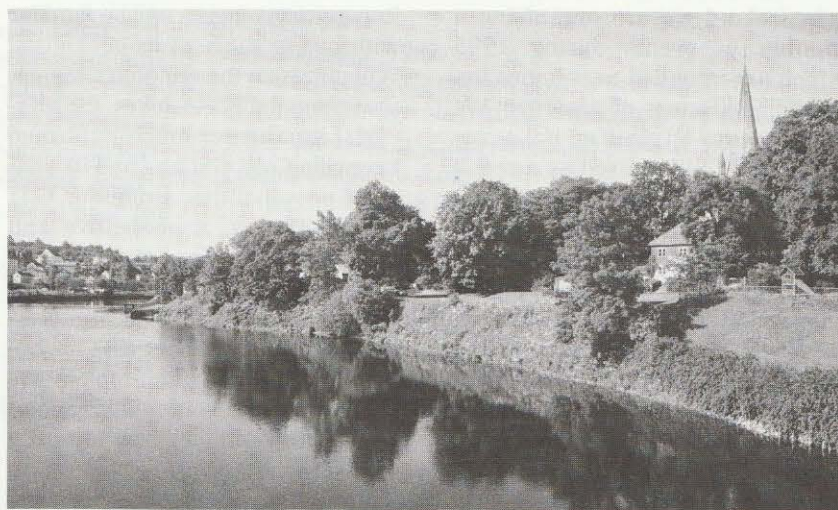
Following an organisational review in 1991, GSI has since implemented a set of five themes in Bedrock, Quaternary, Groundwater, Minerals and Marine. A Five Year Rolling Programme, with specific targets set for each theme, has been established and is reported upon each year in our Annual Report.

Recent years have also seen the extensive introduction of computer techniques into most GSI activities. In particular a digitised map production system with GIS capability has been implemented. Considerable ef-

forts have been devoted to ensure the success of computerisation by staff who, following training, have adapted admirably to the new techniques.

The combination of set targets and digitisation has created a challenging environment in recent years for all GSI staff. Yet it is a pleasure to report how enthusiastically staff have embraced the challenges and gained the confidence to succeed. GSI will, as a result, be able to meet the targets set out in our Annual Report.

However we must rely on our customers to judge whether or not GSI is successful. We have a wide range of customers and are always interested to receive feedback on our products and services. We wish to satisfy customers not only in terms of technical quality but also in the timely helpful manner in which we respond to requests. Regular customer surveys help to keep us





aware of these issues and how well we are responding. In addition, the GSI Consultative Committee, established in April 1993, has proved to be a very effective forum in which to receive comprehensive feedback and advice on all aspects of our operation. This committee is representative of the various customer groups we serve.

When we attempted to define a marketing strategy for GSI we received a swift and painful education: not only was GSI unknown to the Irish public, but so too was geology itself. It seems quite possible that this may be as much a European as an Irish issue. If so, this must be a matter of grave and common concern to us all. Funding and support for geology will at least partly be dependent upon whether the public are convinced of its worth and value to everyday life.

In Ireland we are organising a number of events during 1995 which are intended to enhance the public awareness of geology. We will of course be gratified if the perception of GSI is raised as a result but this is not the primary objective. We are producing a six-part series on geology and landscape in Ireland which will focus on the origin, development and use of our environment. Entitled «A history written in stone», it will be screened on national television in early summer. With Dr. Padhraig S. Kennan, University College Dublin, as presenter we can be assured that it will

be enjoyed by a wide audience. We are hopeful that audiences outside Ireland will also view it.

A notable geologist with GSI during the nineteenth century was George V. du Noyer, a man equally renowned for his artistic skills. His work included not only geological topics but also botanical, historical, archaeological and folklore themes as well. He accumulated a large body of work during his lifetime but, following his untimely death, his work became widely dissipated and has remained so for more than a century. Now, for the first time, a comprehensive exhibition of his work is being planned for 1995 and it will be hosted by the prestigious National Gallery of Ireland. GSI is delighted with this opportunity to reach a wider audience.

The story of the GSI has been neither dry nor dull and many European geologists will be familiar with one or more of its geologists. Whether it be the eminent Oldham, the influential Beete-Jukes, the mercurial Kinahan or much-published Grenville-Cole, GSI has had its share of personalities. Professor G.L. Herries-Davies, a perceptive and entertaining writer on the history of science, has agreed to write a comprehensive history of our organisation. We are confident that his book, «North from the Hook», will prove to have a very wide readership and recommend that you get a copy for your library.

Many of our 1995 events have be-

come possible only through the generosity of our sponsors and it is a pleasure to acknowledge this. The value of sponsors extends beyond the provision of finance - it allows GSI reach into a variety of organisations, to create synergy and indeed develop an outward-looking organisation. It also ensures that staff are not distracted from the targets which customers expect them to meet.

During 1995 we will be hosting or participating in a number of meetings which are important for our customers. At least one will be held in each specialist theme. In October a conference will be organised on the role of geology in environmental management. This reflects the growing importance of the environment in the work of GSI. The environmental and extractive sectors are now equally important to GSI, which is in a unique position to help both as a result.

GSI will be host to the Annual Directors meeting of the Forum of European Geological Surveys (FOREGS). Representing thirty nations across Europe, FOREGS is an important venue for exchanging information and experience. The Boards of FOREGS and EFG will meet in Dublin for the first time in June when it is hoped that the two bodies may explore ways of jointly boosting the status of geology.

GSI must remain relevant to Irish society and its aims must be in harmony with the broader ones of society. For example, we aim to sustain and increase employment in the minerals industry through the provision of products and services aimed at promoting the industry. More generally, we hope that our products and services give our customers a competitive advantage, irrespective of which sector they operate in.

GSI as an organisation cannot stand still but must evolve to meet the changing needs of society. Its staff are alive to these needs and committed to meeting them. Despite our 150 years of service, I am pleased to report that we are not showing our age! ■

KARST PROBLEMS

RECENT COLLAPSES AND HYDROLOGICAL PROBLEMS CAUSED BY KARST IN IRELAND

by Euro. Geol. Gareth Ll. Jones

Introduction

Isolated collapses of the ground surface and/or buildings induced by karst structures occur occasionally throughout the country. A number of these cases have been reported in the spelaeological press and others are known to hydrogeologists and other geologists. These are reported here, together with a number of flooding cases caused by karst phenomena.

It is estimated that there is probably about one case per annum of karst initiated collapse occurring throughout the country.

Examples of Karst induced surface collapse

CORK

Cork 1993

1. A leaking water main, washed topsoil into cavities and caused subsidence and damage to seven houses. Extensive pressure grouting was required.

2. The development of four subsidence shakeholes during a road construction project was found to be related to a 300m long cavernous area. A polyester geogrid with a breaking load of 100kn/m was placed near the bottom of the road sub-base.

Ref: Beese, A.P. 1995. *Proc. XI ECSMFE. Copenhagen.*

KERRY

Tralee November 1993

Subsidence of the ground beneath the railway line caused derailment of two carriages and minor injuries to passengers.

HISTORY: Previous collapse in 1943.

PROBLEM: No geotechnical examination of the ground.

Ref: Media, & *pers comm* J. Hilliard, Listowel.

LIMERICK

It is held that there was a lack of detailed site investigations previous to the building of a large industrial plant. At the start of construction it was then discovered that the site was karstified and it was necessary to move the construction at great expense.

Ref: «Common knowledge».

Lisnagree March 1992

At Maddens's Quarry, Anagher, the ground fell away whilst they were preparing for a blast. The site was a Neolithic tomb in a section of partly roofed cave passage.

The site was excavated archaeologically before quarrying went ahead.

Ref: Jones, 1992, *Descent* 106, p17.

LONGFORD

Lanesborough 1987

A hole recently opened up in a field at Carrarow, near Lanesborough. Investigations by cavers revealed a 3.5m pitch to a 2.4m long passage. It was named Pollnagollum, Co. Longford.

Ref: Jones 1987, *Descent*, 76, p10.

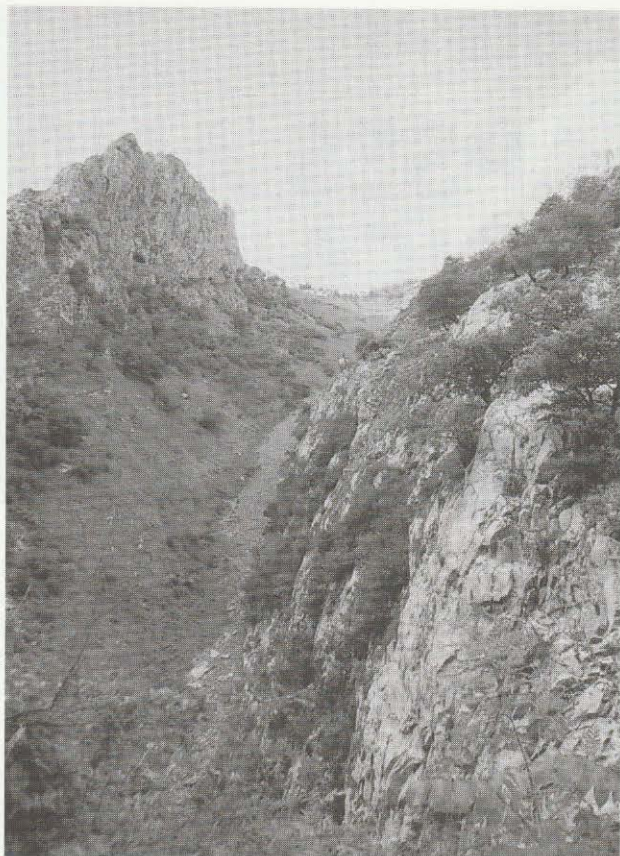
SLIGO

Tobercurry 1990

A hole opened in a field near Tobercurry in southern Sligo, after a tractor had driven over the area, to the shock of the driver. It is some 6-7m deep passing through boulder clay and rock into a chamber.

POTENTIAL: Engulfment of the tractor and injury to the driver.

Ref: Jones, 1990, *Descent*, 93, p16.



TIPPERARY
Cahir 1961-2

The local meat plant constructed an effluent treatment ditch system in unlined boulder clay. They carried out a trial and filled it with clean water, the next morning the water had all gone and there was a hole in the ditch floor. They filled the hole and reinforced the base of the treatment plant.

HISTORY: Situated in a dry valley with old sink holes.

POTENTIAL: If this had occurred during operation effluent would have entered the groundwater causing pollution.

Ref: Cullen, K. 1993, *pers. comm.*

WATERFORD
Dungarvan ~1987

A service station on the by-pass erected a canopy, with no storm water drainage arranged. After a storm water washed the overburden into the bedrock, this caused slippage of the foundation and subsidence of the shop attached to the service-station. The foundation of a gas tank were partly removed (see Plate I). The front wall of the adjacent house was also affected (see Plate II).

REMEDY: Pressure grouting of a large area, installation of a drainage system.

HISTORY: There had been previous karst events in the area.

POTENTIAL: This could have affected the fuel tanks and caused major pollution and explosion hazard.

Ref: Cullen, K. 1993, *pers. comm.*

WEXFORD
Rosslare 1979

Part of the new Wexford road passed through a low area (? enclosed depression), and the local drainage from the road was all directed into the centre of this area. Subsidence occurred at the low point without warning. The road surface collapsed over an area of one square metre (see Plate III).

REMEDY: Back filled with hard core and redirected drainage.

HISTORY: Previous karst events.

POTENTIAL: Major road accident.

Ref: Cullen, K. 1993, *pers. comm.*

Examples of Karst hydrological problems

GALWAY
Gortarea 1991 and 1995

The Gort lowlands is an extensive area of lowland karst with many lakes and limestone pavements. The natural variation of the groundwater causes these lakes to grow seasonally. In years of abnormally heavy rainfall, the lakes grew to block roads and swamp dwellings built during years of low rainfall in vulnerable areas.

REMEDY: Prevent building in areas likely to be affected.

Ref: Daly, D. 1992. GSI report 2.2.7.

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LEITRIM

Manorhamilton ~1989

The outlet to Monakill Lake (Grid Ref G 930388), a turlough (seasonal lake), became blocked and the lake increased in area, swamping a septic tank, threatening a house. Finally it cut the main Manorhamilton to Blacktion road.

REMEDY: Only then were the Council forced to cut a relief drainage channel.

POTENTIAL: Pollution, disruption of infrastructure.
Ref: Dowds, S. 1993, *pers. comm.*

MAYO

Ballindine ~ September 1992

A turlough east of Ballindine (M 394 691) emptied after a week of heavy rain. Two kilometres south-east a spring (M 412 675) burst into flood. There has been drainage work carried out at the spring, and this may have weakened a plug allowing drainage of the system. The flood nearly submerged a mechanical digger at the spring.

Ref: Smith, D. C. 1993, *pers. comm.*

Cong ~ nineteenth century

A canal was constructed between Lough Mask and Lough Corrib over a distance of some 6km through the isthmus of land between the two lakes. When the water was let into the canal it disappeared through numerous

holes in the limestone. When these were filled in, it shortly found other holes to sink in.

NO REMEDY: But modern work seeks to line the canal.

Ref: Coleman, J. C. 1965, *Caves of Ireland*.

Westport ~1990

1.5km outside the town there was a small river sink. A local farmer increased drainage into the stream and the sinkhole was unable to cope with flow. A lake formed until it suddenly disappeared as a plug gave way.

The underground flood pulse resurged in Westport town in a local solicitor's back yard and office, flowing out through the front windows. It also raised the concrete floor of the adjacent post office. The waters flowed down the main street and threatened to engulf other premises until the bounding wall of the canal was broken to allow the water to flow away.

REMEDY: Drainage channel was dug to by-pass the sink.

Ref: Cullen, K. 1993, *pers. comm.*

SLIGO

Lough Nasool

In 1964 this lake of some 80,000 m² area, disappeared overnight, presumably as the plug in the outlet swallow hole suddenly gave way.

Ref: Coleman, J. C. *Claves of Ireland*, 1965.

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- are now available at IR£12.50 each.

Sheet 25 South Cork and Sheet 10 Connemara will be published shortly. National coverage will be completed in 1997.

"Written in Stone" an introduction to the Geology of Ireland by Dr. Pádraig Kennan, University College, Dublin, to complement a TV documentary series is also available.

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MINERALS POLICY IN IRELAND

by Iain Legg

During 1994, the Minister for Energy announced that he was establishing a Review Group to examine the National Minerals Policy. The IAEG was invited to make a submission, and the following is a summary of the paper submitted.

Exploration, Mining and the Economy

Ireland has a minerals industry which includes metals traded on the international market, and industrial minerals which are mainly traded on the domestic market. There is little encouragement given to this industry despite its significant value to the country both in terms of job creation and contribution to the National Economy. (2625 people employed in mines and 6525 people in indirectly related jobs).

Fiscal Framework

Exploration invariably results in the discovery of some lower grade deposits, that hard economics will not permit to be developed. Assistance in the form of government grants could make the difference between such deposits being developed or lying fallow, and grants should be made available to the minerals industry in line with those available to other industries.

Financial incentives should be made available to encourage exploration. Tax incentives, for example, have been shown to be successful in the past.

Legislative and Administrative Framework

Ireland has a number of features that are conducive to a vigorous exploration and mining industry and these can be capitalised on by the Geological Survey by the rapid completion and publication of quality geological maps; the publication of quality geophysical maps incorporating geophysical data through new surveying initiatives; rapid access to a user friendly Open File system; and access to a drill core library.

The Department of Transport, Energy and Communications must be pro-mining, and should play a major role in promoting Ireland as an exploration and mining centre by encouraging new inward investment from abroad, and promoting and supporting the industry at home. Promotion by the Department should include advice and assistance to the industry as well as a positive educational role aimed at the general public.

In order for exploration to be carried out speedily and efficiently, it is essential to have a good frame-





work of prospecting licences that are administered impartially in a clear and understandable way by the Government, by a stable set of regulations. The current system has, by and large, worked reasonably well and has given Ireland an edge over many European countries, as an exploration centre. The new regulations now proposed contain some positive features, but also raise concern in certain areas. Some of these are:

1) the proposal that prospecting licences be re-advertised periodically prior to renewal, perhaps coinciding with a critical time during the project development, provides objectors with the opportunity to delay or possibly prevent the

granting of a licence when renewal is sought, and is totally unacceptable. There should be an automatic right that in the event of successful exploration, the discovered deposits can be covered by a mining lease.

2) the limitation of prospecting licences to particular groups of minerals is potentially an extremely serious problem which could lead to conflict. Prospecting licences should be for all minerals excluding petroleum. Splitting minerals up and allocating different licences to different parties over the same ground is a guarantee for future legal disputes, which is not in the interests of the country or the exploration companies.

3) overall there is an increase in

both administrative fees and expenditure commitments. This discriminates against companies with limited available funding, such as some of the smaller Irish companies.

4) where a licence holder has outlined a sub-economic resource, which only improved metal prices could make viable, there is a case for the holder being granted a «retention lease» for a reasonable rental, but no further exploration expenditure.

5) regarding Ministerial discretion, it is preferable to make the regulations as clear and unambiguous as possible, and thus remove much of the need for ministerial discretion.

6) in terms of confidentiality of information, some companies would seek to retain technical information in perpetuity. However, there is a view within other companies that it would be reasonable to release this information when it is six years old.

7) the new regulations on Joint Venture Agreements suggest restricting such agreements until after six years. In the interests of continuous exploration, it is suggested that two years should be sufficient.

It is essential that the Department of Transport, Energy and Communications address the problems of mineral rights (these should reside exclusively with the State); access to land; and farmers concerns relating to liability.

Mining and the Environment

When a deposit is discovered and is believed to be economically viable, it is in the interest of the country to ensure a rapid development of that resource. This «fast-tracking» is not aimed at overriding environmental issues and concerns, but equally these concerns should not be inflated out of proportion and consequently jeopardise the investment of the company and the creation of jobs and wealth for both the local and national economies. Importantly, unnecessary duplication by the Department of work carried out by the Environment Protection Agency should be avoided. ■

«REGISTRATION» OF GEOLOGISTS

by W. V. Knight*, J. H. Williams** & R. A. Fox***

* CPG EurGeol, **CPG, *** EurGeol

What it is and is not

Registration» generally implies that the registrant has certain identified minimum qualifications that have been approved by some third party. (See below) In the United States, it commonly implies that the approving party is governmental. Certain terms should be understood when discussing «registration».

«Registration»

«Registration» derives from the list of those qualified under «title» or «practice» acts or programs (see below). The term is applied widely to any type of regulation of professional practice. This results in considerable confusion.

Academic qualification

Most of the world relies on academic degrees, on the assumption that a degree implies a commensurate level of professional and technical competence.

Recognition by Professional Peers («Peer Review»)

In many jurisdictions of the world, professional organizations examine and endorse qualifications. Though it may not be necessary to be so qualified to practice, the use of such titles as «Board Certified...», «Chartered...», etc., generally is restricted. Over time, the titles have acquired professional standing. Professional organizations in the United States have tried to imitate

this practice. Success has been limited and, with some notable exceptions, has generally been confined to the medical professions. Certification by the American Institute of Professional Geologists (AIPG) has been recognized by statute in Alaska and Indiana. Along with the specialty certification of the American Association of Petroleum Geologists (AAPG) and the Society of Independent Professional Earth Scientists (SIPES), it has been recognized in a number of State and local courts and agency regulations.

This has been formalized by government statute or charter in some jurisdictions, e.g., the European Union (see below). In others, endorsements may be recognized, but not the specific or exclusive right to exercise the responsibility.

Definition of a Profession and its Practitioners («Definition» Acts)

A few of the United States define a profession and its practitioners by statute, or common law. Definitions usually are rather broad and may stipulate that only such a person be employed for certain assignments.

Certification by the State («Title» Acts)

In some States, the State, itself, is the entity that qualifies the practitioners, usually through a board. It grants a title, e.g., «Certified...», etc., and restricts its use. Only the *title* is restricted, not the practice. Although such an act does not prevent an untitled person from practicing, some agencies may require

that reports presented to them be prepared or approved by a person who does hold the title.

Licensing by the State («Practice» Acts)

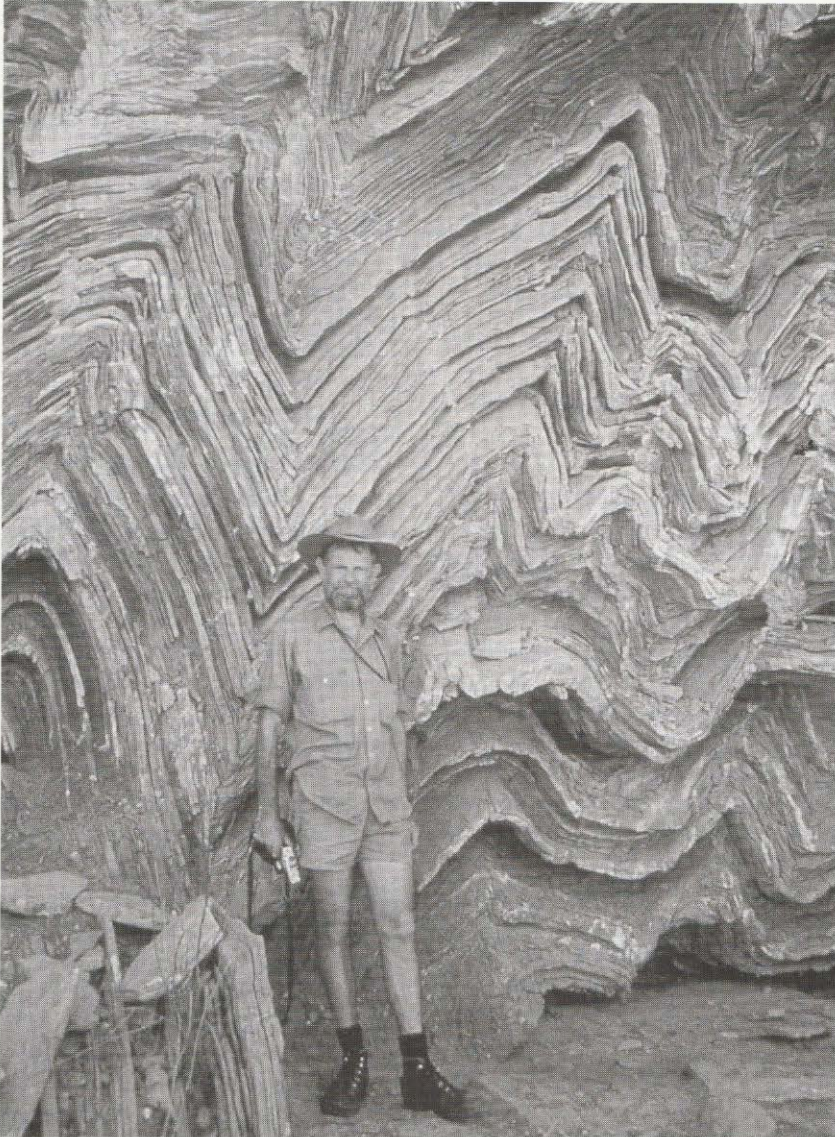
Several States have statutes similar to «title» acts, but which restrict *practice* to those qualified by the state.

Specialty Certification and Licensing

A few States regulate specialties as an «add-on» to general professional regulation. This may be by «definition», «title», or «practice».

Comity and Reciprocity

Free movement of professionals within the United States and, indeed, throughout much of the world, has been hampered by restrictive customs and laws. These decline to recognize or accept persons who do not have specified qualifications, though their qualifications may be roughly equivalent or superior. Thus, in the United States, several of the States have «registration» laws that require a professional to be licensed in that state in order to practice there (with exemptions commonly ranging up to ninety days). In this case, the license is the required qualification. At this writing, most States of the United States that license geologists do not recognize the licenses of most others, or do so in a very limited sense. Work is going forward to correct this situation, but is hampered by State laws which prevent granting sovereignty to



Photograph published with authorization of «The Professional Geologist» a publication of the AIPG.

another State. The recognition is generally limited to accepting the license of one State as sufficient evidence of suitability for licensure by the second State. Usually, one must still acquire and maintain a license in the second State. This nearly always involves the payment of an initial fee, and the regular (e.g., biennial) payment of a renewal fee.

Both comity and reciprocity are frequently, and mistakenly, referred to as «reciprocity». «Comity» is a courtesy, not a right, granted out of good will, by which persons recognized by one entity *have access* to recognition by another on a *case by*

case basis. «Reciprocity» is mutuality. It denotes the relation between entities when each gives *all* of the qualified citizens or members of the other certain privileges *on condition* that its own enjoy similar privileges at the hands of the other.

«Limited» reciprocity exists when one jurisdiction recognizes another's «registration» as sufficient evidence of qualification to issue its own «registration». For example, suppose that California issues a license to practice geology. Suppose further that, under a «reciprocity» agreement, that license is recognized as adequate evidence of professional and technical competence by

some other State in support of an application for licensure is that other State. The California licensee would still be required to obtain a license in that other State in order to practice there, even may allow a temporary exemption for short periods of time, but practice over extended periods of time would require in-state licensure.

«Full» (unlimited) reciprocity exists when one jurisdiction recognizes another's «registration» *in place of* its own. For example, suppose that New York issues an automobile operator's license to one of its citizens. Suppose further that, under «reciprocity» provisions, that license is recognized by some other State as valid within its boundaries. The operator would be required to obtain a license from the second State *only* upon becoming its citizen or legal resident.

Under «limited» reciprocity, a geologist who practices in several States likely would be required to obtain a license in each of them, even though they have «reciprocity». Under «full» reciprocity, only one State's license would be required. Many geologists have believed, incorrectly, that by being «registered» in one State, they can practice legally in any State on that single «registration». This would be the *only* if there were «full» reciprocity.

Where it is

United States

Twenty-three States have statutes related to the professional practice of geology.

Three of these have «definition» acts. Certification by certifying members of the American Geological Institute, e.g., AIPG, AAPG, and SIPES, generally meets these definitions.

Four have «title» acts. Alaska and Indiana recognize AIPG's certification in their statutes, whereas Virginia and Wyoming require written examinations. (Wyoming's act refers to its titled persons as «licen-

sees», even though it is not a practice act.)

Sixteen have «practice» acts. Of these, all but Delaware and Tennessee currently require written examinations.

Four States allow specialty certification. It has been implemented in only California and Oregon, not in Arkansas and Georgia.

Some «registering» States exempt certain specified geological activities, usually related to petroleum and other mineral exploration and extraction.

Although the remaining twenty-seven States have no geology-specific statutes, a hodge-podge of legislation and regulations governs specific activities in which geologists often engage. Most relate to environmental work. There are movements in several of these States to enact some sort of statutory regulation of professional geologists. To date, legislatures and/or professional geologists in some other States have resisted, or found no need for, professional regulation of geologists.

Other Countries

Most countries outside of the United States rely on academic qualifications and/or *peer review*. In sharp contrast to the trend in the United States, the European Parliament has issued a mandate that regulation of *all* professions (including health care) is to be *only* by professional organizations designated by the governments and *not* by government agencies. Professional geological organizations in a number of other countries, both in Europe and elsewhere, are investigating the feasibility and advisability of establishing some kind of program of self regulation by professional organizations, as in the European Union. Such programs are already in place in some of the Latin countries.

In many countries, and in some of the United States, geologists are regulated in concert with other professions, such as engineers and land surveyors. Thus, in Alberta,

Canada, for example, geologists, engineers and geophysicists are regulated by the Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA) under authority granted by the Province of Alberta. Similar practices are followed in several other jurisdictions, particularly in Latin America and southern Europe.

«Reciprocity»

Interstate

Regulating States, working through the National Association of State Boards of Geology (ASBOG), are striving to establish interstate comity, if not full reciprocity. Though expanding, «reciprocity» remains a «sometime» and «someplace» thing. Most States' statutes provide for some form of comity or reciprocity, as described above. However, presently, the only thing in the United States approaching «full» (unlimited) reciprocity, established by statute, is that implied between Alaska and Indiana through their statutory recognition of AIPG certification. Other States practice more «limited» reciprocity.

International

The European Federation of Geologists (EFG) has established the title of «European Geologist», which it grants to persons qualified by education and training and recommended by its member national professional societies, e.g., «Chartered Geologist» (United Kingdom) and «Professional Member» (Republic of Ireland). The European Union has recognized the «title» as a mark of quality throughout Europe, although it has no legal standing within the Union. This is also true of most other professions, including engineering.

American geologists have access to this title in either of two ways. They can (1) apply directly to one of the societies of the European Federation of Geologists and seek its qualification and recommendation;

or (2) if certified by AIPG, seek to affiliate with an EFG member society through comity, then seek professional status and recognition through those organizations and EFG.

Summary

The granting of recognition, whether by government licensure or not, usually is based upon combinations of several qualifications. Normally, one first must document or demonstrate a specified minimum level of academic attainment. Second, one must document a specified minimum level of experience. Third, one may be required to show a reasonable record of adherence to a designated standard of ethics. Finally, one may be required to achieve a prescribed minimum score on a written (or, sometimes, oral) examination. The manner in which these qualifications are satisfied or documented varies among regulating authorities. In the United States, progress is being made in developing a standard examination. But, «reciprocity» agreements are proving more difficult to achieve. Two of the principal obstacles have been State sovereignty and the precedents set by other professions, notably engineering. While their programs of self-regulation have had limited statutory acceptance, the professional and technical societies in the United States have contributed much to the development of regulating statutes. The societies, together, have prepared various models which have been used as the bases for legislation in various States.

Information sources

More detailed information is available from AIPG, or from the National Association of State Boards of Geology (ASBOG). The authors are constantly seeking information on practices in all jurisdictions. Therefore, contributions of information from our readers will be most welcome. It should be sent to AIPG.

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Kentucky	Kansas
Maine	Oklahoma
Missouri	
North Carolina	
Oregon	
Pennsylvania	
South Carolina	
Tennessee	
Wisconsin	

NOTE:

The forgoing was adapted and expanded from an article prepared by the authors for publication in the February, 1995, issue of *Geotimes*, the magazine of the American Geological Institute.

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«EUROPEAN GEOLOGIST»

BIOGRAPHY OF AN EUROPEAN GEOLOGIST: LUCIANO BROILI

Luciano Broili, ex President of the Italian Institution of Geologists (Ordine Nazionale dei Geologi) a man of high educational and professional ethics, has passed away.

At the height of his scientific and working career he chose to further the knowledge and the role of Geologists.

His professional activities covered research, consultation and planning in all sectors of applied geology, with particular interest to soils and rock bodies, for the execution of works both in Italy and abroad, these included roads, motor-ways, tunnels, bridges and dams.

His highly specialized work referred mainly to the dynamics of the instability of natural and artificial slopes and in particular to phenomena of landslides under differing ground and motion conditions.

During the '60's he became a professional Geologist, in Salzburg, at the school of rock mechanics, under the guidance of the famous Prof. Leopold Muller. His formation differed greatly from the then Italian standard, still rather naturalistic or directed towards the oil industries. In fact, only when faced with the Vajont Dam land slide did the importance of this profession become apparent.

In 1971 the National Research Council appointed Luciano Broili to give a series of lectures on rock mechanics, and in 1974 he published a book on a more advanced 2nd course, also held by him. Luciano Broili's experience in this field proved fundamental after the earth-

quake in 1976 when Friuli had to start rebuilding.

At that time faced with the many land-slides and upheavals that the seismic phenomena provoked, Luciano Broili intervened, for the Genova Administration, in the 'immediate after' phase, when he directed a working group to define the risk areas and later in a scientific phase to identify the habitable areas. During this latter phase, Luciano Broili outlined a methodology aimed to define the habitable areas following a criteria which became a working standard in seismic areas, and divulged a method of calculation for rock slides according to his field experience. (Monte San Martino - Lecco - 1972).



Luciano Broili.

Intensive work during these years does not impede him from participating, at conferences and study congresses, nor from promoting and organizing, in 1981/82/83, specialized courses held at C.I.S.M.

(Centro Internazionale di Scienze Meccaniche) in Udine, to further the knowledge of the technical characteristics and the mechanical behaviour of the rock masses, giving refresher courses on Geological zoning under seismic hazard conditions at Formex in Potenza, after the earthquake which struck Southern Italy in 1980; and holding courses, as speaker, for the 1st course on Rock Mechanics and Engineering organized by the Politecnico of Torino in 1986.

In 1993 the Geology Dept. of the Trieste University entrusted him with the post of lecturer on Rock Mechanics. It was a 'return to the origins' as, at the beginning of his career, he occupied the post of Assistant Lecturer at the Institute of Soil and Rock Mechanics at the Karlsruhe University (Germany).

In divulging the theme of applied Geology to both insiders and outsiders, Luciano Broili gave special attention to the managerial aspects of the territory when confronted to its security and resources, always emphasizing that the geological contribution must always tend to prevent the effect of natural phenomena. At present this a very important aspect because of the increasing anthropic pressure on the hydrological and geomorphological environment.

He always kept these aspects in mind, especially during his term as President of the National Institution of Geologists (1983-1991) and President of the Friuli Venezia Giulia Institute of Geologists from 1992 until his death. ■

THE HISTORY OF THE EUROPEAN FEDERATION OF GEOLOGISTS

by Gareth Ll. Jones *EurGeol 11* & Richard Fox *EurGeol 14*

Preliminary meetings

Representatives of the British, French, Italian and Spanish national associations of geologists met in London in July 1978 in order to establish the European Federation of Geologists and to outline the Statutes. The final text was drafted during the meetings that took place in Paris in March 1979 and in Madrid in November 1979, when Belgian and Irish geologists were observers.

The E.F.G. was officially born in Paris in July 1980 during the 26th. International Congress of Geology; and was composed of the Professional Associations of Spain (A.G.E., I.C.O.G.), Italy (A.N.G.I., O.N.G.), Portugal (A.P.G.), United Kingdom (I.G., now G.S.), France (U.F.G.), Belgium and Luxembourg (U.B.L.G.). In July of the same year the Statutes were presented to the European Economic Community in Brussels.

The geologists of the Federal Republic of Germany (B.D.G.) became members of the E.F.G. in 1985, Ireland (I.A.E.G.) in 1986, Finland (F.U.G.) and Sweden (S.N.) in 1989, Greece (A.G.G.) and the Netherlands (K.N.G.M.G.) in 1993.

Objectives

Objectives were agreed which include the representation of the geological profession in Europe. The Committee of Geologists of the European Community (C.G.E.C.) is the authorised organisation to re-

present the E.F.G. to the E.U. and its various bodies.

Also to safeguard and promote the present and future interests of the geological profession in Europe, including the guarantee of the free movement of geologists in Europe, with the mutual recognition of their academic and professional qualifications by the adoption of the European Geologists Bill. To promote the harmonisation of education and training. To define and protect the title of geologist and related professional titles. To promote the code of professional ethics of the E.F.G. To provide advice and assistance to constituent member National Associations.

Further to promote an European geological policy with regard to the responsible use of the Earth's natural resources and in particular, energy resources, mineral and construction material resources, water resources and environmental pollution. Geological problems in land development, as well as environmental protection are further areas for policy development.

Organisation

Each member country is represented by a maximum of two delegates, appointed or elected by their respective National Associations. EFG meetings take place every six months, the venue rotating between the member countries. The official languages are English, French and Spanish.

Activities

Activities carried out have included the presentation of Dossiers to the European Community (see below). Professional Associations also send copies of these documents to the appropriate authorities of their respective countries. The «Aims Booklet» was produced for circulation to Euro MPs, national MPs, other professional bodies, etc. Also the Geological Data Bank, a Code of Deontology for all member countries, and the title European Geologist have all been established.



Accession of member countries and representative bodies			
The European Federation of Geologists was formed 8-11 July 1980			
1980	Belgium/Luxembourg	UBLG	
	France	UFG	
	Italy	ANGI / ONG	
	Portugal	APG	
	Spain	AGE / ICOG	
	United Kingdom	IG / GS	
1985	Germany	BDG	
1988	Ireland	IAEG	
1989	Finland	FUG / GL	
	Sweden	SN	
1993	Greece	AGG	
	Netherlands	KNGMG	
Observer countries			
Applicant:	1984-1985	Germany	
	1985-1986	Ireland	
	1989-1989	Finland	
	1989-1989	Sweden	
	1991-1993	Greece	
	1991-1993	Netherlands	
	1991-1993	Czechoslovakia	
	1993-1995	Czech Republic	
	1993-1995	Slovakia	
	1994-1995	Poland	
Fraternal:	1990-1995	USA	
Previous EFG Board Members			
	President	Vice-President	Secretary-Treasurer
1980-1981	John Shanklin	Renzo Zia	Gerald Clement
1982-1982	John Shanklin	Renzo Zia	Gerald Clement
1980-1983	John Shanklin	Renzo Zia	Gerald Clement
1983-1984	Renzo Zia	José Carvalho	Daniel Brumagne
1984-1985	Renzo Zia	José Carvalho	Daniel Brumagne
1985-1986	Renzo Zia	José Carvalho	Daniel Brumagne
1986-1987	Gerald Clement	Richard Fox	Antolin Aldonza Moreno
1987-1988	Gerald Clement	Richard Fox	Antolin Aldonza Moreno
1988-1989	Gerald Clement	Richard Fox	-
1989-1990	Gerald Clement	Richard Fox	-
1990-1991	Richard Fox	J E Carlos Garcia Royo	Vittorio Iliceto
1991-1992	Richard Fox	Gunnar Hultquist	Vittorio Iliceto
1992-1993	Richard Fox	Gunnar Hultquist	José Tomas Oliveira
1993-1994	Gunnar Hultquist	Manuel Regueiro	Gareth Ll. Jones
1994-1995	Gunnar Hultquist	Manuel Regueiro	Gareth Ll. Jones
Council Meetings			
July 1980	Paris, France	January 1981	Rome, Italy
January 1982	Lisbon, Portugal	July 1982	London, UK
January 1983	Brussels, Belgium	June 1983	Paris, France
February 1984	Palermo, Italy	July 1984	Madrid, Spain
February 1985	Lisbon, Portugal	July 1985	London, UK
June 1986	Paris, France	November 1986	Aachen, Germany
June 1987	Brussels, Belgium	November 1987	Rome, Italy
May 1988	Soria, Spain	November 1988	Lisbon, Portugal

June 1989	Dublin, Ireland	November 1989	London, UK
June 1990	Paris, France	October 1990	Rome, Italy
May 1991	Stockholm, Sweden	October 1991	Greifswald, Germany
June 1992	Salamanca, Spain	November 1992	Brussels, Belgium
June 1993	Helsinki, Finland	November 1993	Cascais, Portugal
June 1994	London, UK	November 1994	Athens, Greece
June 1995	Dublin, Ireland		

Other meetings

Moscow	August 1984	Presentation of Code of Professional Conduct of the 27th International Congress of Geology
Paris	January 1989	Presidents' Meeting
Brussels	November 1992	Presentation of Groundwater Dossier to European Parliament
London	January 1993	Presidents Meeting
London	January 1994	European Professional Groups
London	February 1995	European Professional Groups

European Representative

1986-1989	André Chabot
1990	Eva Paproth
1991-1992	Klaus Krumseik
1993-1995	Jean-Marc Debaty

Chair Registration Committee

1992-1994	Franz Goerlich,
1995	Eric Groessens

Assistant Secretary

1988-1991	Louis Le Tourneau
1991-1995	Jean Claude Vidal

Editor(s) Eurogeopages

1989	Christine Butenuth, Francois-Dominique de Larouziere
1991	Francois-Dominique de Larouziere
1993-5	Gareth Ll. Jones

Editor The European Geologist

1995	Manuel Regueiro
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Chairs Working Groups

Groundwater & Environment	1991-1992	Richard Fox
Geology & Environment	1992-1995	Gilbert Kelling
Geotechnical / Engineering Geology	1992-1995	Louis Suarez
Mineral Resources	1992-1993	Gareth Ll. Jones,
	1993-1995	Christer Åkerman

Dossiers presented to the European Parliament

1984	<i>Energy in Europe</i>
April 1987	<i>Education - Summary of Qualifications Leading to the Title of Geologist in EFG Member Countries</i>
November 1992	<i>The Environment and Geology - Groundwater Pollution</i>



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EUROPEAN JOTTINGS

by Richard Fox
European Geologist

1. General:

The European Community became the European Union with the signing of the Treaty of European Union (Maastricht) at the end of 1993.

With the signing of the Maastricht Treaty the populations of the 12 Nations of the European Community technically became citizens of the European Union.

However, the 'winds of change' indicate that where Nation States formally imposed duties and co-ordinated economic life, these matters are increasingly being imposed by the European Market.

Economic trends on an international basis may have diminished the abilities of National States to respond to the demands of their citizens and supranational frameworks have challenged the Sovereignty of National States over social rights.

It has been argued that the European Union and its citizenship exists as mere plans and foundation stones for a future building, the shape of which is unclear and the completion date of which lies two generations into the 21st Century.

Furthermore, the enlargement of the E.U. to include the Baltic States, Poland, Hungary, Slovakia and the Czech Republic will match those of the traditional Christian World, and it could be argued that this will at last create a meaningful sense of belonging.

It is this 'belonging' that is important within the European Federation of Geologists, and as a Pan-European Group it will achieve greater recognition by the Authorities both internationally and nationally and it can be seen as a single voice for the geological profession.



Registration Committee. New Chairman Eric Groessens presents the Vanderbrock medal of the Belgian Geological Service to retiring chairman Franz Goerlich. London February 1995.

2. Enlargement of the E.U.

Now that Austria, Sweden and Finland have officially joined the EU, and only Norway did not agree to join, the income from all the States will increase by some 8.6 % raising the budget from 82 billion Ecu in 1995 to 94 billion Ecu in 1999.

The Union will benefit from the geographic position of the new Members. Austria lies at the heart of Europe with trade links to Eastern Europe, the Nordic countries have strong trading links with the Baltic States, while Finland has a long experience of trading with the Commonwealth of Independent States (CIS). The new members also bring with them a strong tradition of openness in Government, social equality and high environmental, health, and safety standards.

The European Parliament membership has increased by 59 to 626 (Sweden 22, Austria 21, Finland 16). Each Country has also appointed

one Commissioner increasing the total to 20. If Norway had voted to join, this would have added a further 15 EuroMPs and 1 additional Commissioner.

Looking to Central and Eastern Europe, association agreements known as «Europe Agreements» have been concluded with Poland, Hungary, Czech and Slovak Republics, Bulgaria and Rumania.

The EU is politically set to expand its membership to include the countries of Central and Eastern Europe, and although problems have been identified with a potential membership of 20 or more members in the EU, the consensus is that the EU will benefit from the dynamism and capacity for decision-making which will be preserved by including the additional members and ensuring institutional reform. The 'opt outs' negotiated in the Maastricht Treaty illustrate a possible way forward to solve differing economic and political considerations, provided that



Past President, R. Fox addresses the National Geological Congress at Salamanca (Spain). June 1992.

the single market is preserved. This option will be increasingly vital as moves towards a common defence security arrangement for all the members will have to take into account the traditions of neutrality of existing and potential members.

3. New European Commissioners

The President of the Commission for 1995, Jacques Santer, recently announced the division of portfolios of the 20 nominated members of the Commission as they begin their 5 year term of office on the 7th January 1995.

The principal portfolios of interest to the EFG are as follows:-

President Jacques Santer (Luxembourg) – Common foreign and security policy (with Mr. Van den Broek), monetary matters (with Mr. de Si'iquey), Institutional questions and inter-governmental conference (with Mr. Oreja).

Manuel Marin (Spain) – External relations with the Mediterranean.

Martin Bangemann (Germany) – Industrial Affairs, information – technologies, and telecommunications.

Sir Leon Brittan (U.K.) – External relations with North America etc.

Karel Van Miert (Belgium) – Competition.

Hans van den Broek (Netherlands) – External Relations with

Central and Eastern Europe and former Soviet-Union, Turkey, Cyprus, Malta and other European Countries.

Joao de Deus Pinheiro (Portugal) – External relations with Countries of Africa etc.

Padraig Flynn (Ireland) – Employment and Social Affairs.

Marcelino Oreja (Spain) – Relations with the European Parliament;



R. Fox EFG past president presenting the Groundwater Dossier at the European Parliament in Brussels.

relations with the Member States on openness, communications and information.

Edith Cresson (France) – Science, research and development, Joint Research Centre, humane resources, education, training and youth.

Ritt Bjerregaard (Denmark) – Environment, nuclear safety.

Monika Wulf-Mathies (Germany) – Regional policies etc.

Neil Kinnock (UK) – Transport.

Mario Monti (Italy) – Internal Market etc.

Emma Bonino (Italy-France) – Economic and financial affairs etc.

Yves-Thibault de Silguy (France) – Economic and financial affairs etc.

Christos Papoutsis (Greece) – Energy etc.

Anita Gradin (Sweden) – Immigration and home affairs etc.

Franz Fischler (Austria) – Agriculture etc.

Erkk Liikanen (Finland) – Budget etc.

4. Movement of Europeans

Recent statistics from Eurostat indicate that 95.7 % of citizens in the European Economic Area (EEA) live in their own Country. Nearly 10.4 million people (2.8 % of the total population of 370 million) are non-EEA citizens. Just over 5.6 million (1.5 %) are EEA citizens resident in another EEA country.

5. New Research Programmes

EU Research Ministers recently agreed (October 1994) on 8 research programmes with fundings of more than 6 billion Ecu. The new programmes form part of the Fourth Framework Programme for Research, Technology and Development for 1994-1998. The largest programme covers information technology (1.9 billion Ecu), but others of interest to EFG are «co-operation with third countries and international organisations (540 million Ecu) marine sciences and technologies (228 Ecu) and standards measurements and testing (173 million Ecu)». ■

GEO CALENDAR

1995

Jun. 3. *Ecology Field Trip, Bureau of Land Management, Bakersfield to Carpenteria, California.* Dr. Wilkerson, Ph.: (805) 391-6081 or write to MOTHER LODGE c/o Gregg Wilkerson, 7005 Hooper Ave., Bakersfield, CA 93308.

Jun. 3-6. *Carbonate-hosted lead-zinc deposits, int'l. mtg., St. Louis, by Society of Economic Geologists.* (Martin Goldhaber, U.S. Geological Survey, MS 973, Box 25046, Federal Center, Denver, 80225-0046. Fax: 303/236-3200. E-mail: mgold@helios.cr.usgs.gov).

Jun. 3-6. *International Field Conference on Carbonate-hosted Lead-Zinc Deposits.* St. Louis, Missouri. Contact: Martin Goldhaber, U.S.G.S., P.O. Box 25046, MS 973, Federal Center, Denver, CO 80225, Fax: (303) 236-3200.

Jun. 4-7. *35th U.S. Symposium on Rock Mechanics, Lake Tahoe, NV.* Contact: Jaak Daemen, U.S. Rock Mechanics Symposium, Dept. of Mining Engineering/173, Mackay School of Mines, University of Nevada, Reno 89557, Ph.: (702) 784-4309.

Jun. 4-8. *A/E/C Systems '95, Georgia World Congress Center, Atlanta, Georgia.* Contact: 203-666-1326; fax 203-666-4782.

Jun. 4-8. *The Clay Minerals Society 32nd Annual Meeting: Baltimore, USA* (Patricia Jo Eberl, the Clay Minerals Society, PO Box 4416, Boulder, CO 80306, USA).

Jun. 4-10. *Congress and Exposition on Managing the Effects of Mans Activities on Groundwater: Solutions '95,* 10769-99 Street, Edmonton, Alberta, Canada K1A 0E8. Tel: 0101 403 429 1472. Fax: 0101 403 424 5306).

Jun. 4-10. *Canadian National Chapter of the International Association of Hydrogeologists-Solutions,* Edmonton, Alberta, Canada. Contact: Allan Kerr-Chair, 10769-99 Street, Edmonton, Alberta, Canada T5H 4H6, Ph.: (403) 429-1472.

Jun. 5-7. *3rd International Applied Statistics in Industry Conference Continuing Continuous Improvement, «Call for papers.» Analytical Consulting Group, Inc., Dallas, Texas.* Contact: Susan Angell, 316-777-4425; fax 316-744-9829.

Jun. 5-8. *16th International Computer and Management Show for the Design and Construction industry, A/E/C Systems '95,* Atlanta, Georgia. Contact: Sharon Price, 203-665-0153, 800-451-1196; fax 203-666-4782.

Jun. 6-8. *Aachen, Allemagne. 4th int. continuous surface mining symp. In n.° 52.* R. D. Stoll, Dpt of Mining III, Aachen Univ. of Technology, Lochnerstr. 4-20, D-52056 Aachen, Allemagne. Fax 49/241 888 82 50.

Jun. 7-8. *8th Annual Geographic Information Systems Conference, «Call for presentations.»*

Department of Geography and Environmental Planning, College of Continuing Studies, Center for Suburban and Regional Studies - Towson State University, Towson, Maryland. Contact: College of Continuing Studies, 410-830-4737.

Jun. 7-9. *African Mining '95, conference, Windhoek, Namibia.* Details: Conference Officer, Institution of Mining and Metallurgy, 44 Portland Place, London W1N 4br, U.K. Tel: +44 1771 580 3802; Fax: +44 171 436 5388.

Jun. 10-13. *20th Annual Conference and Exposition of the National Association of Environmental Professionals (NAEP), Environmental Challenges: The Next 20 Years,* Washington, D.C. Contact: NAEP, 5165 MacArthur Blvd. NW, Washington, D.C. 20016, Ph.: (202) 966-1500.

Jun. 11-15. *Geomatics 1995 - 7th International Conference on Geomatics, «Call for papers.» Canadian Institute of Geomatics and the Inter-Agency Committee on Geomatics,* Ottawa, Canada. Contact: R. Ryerson 613-996-2817; fax 613-947-7059.

Jun. 11-16. *American Nuclear Society Annual Meeting: Atlantic City, USA (ANS, 555 N Kensington Avenue, La Grange Park, IL 60525, USA. Tel: 0101 312 352 6611).*

Jun. 12. *Paris, France. Assemblée générale de la Soc. Géologique de France et conférence. Société Géologique de France, 77, rue Claude-Bernard, 75005 Paris, France. Tel. 33/1 43 31 77 35.*

Jun. 12-14. *Mine Mechanisation and Automation, 3rd international symposium, Golden, Colorado.* Details: Office of Special Programs and Continuing Education, Colorado School of Mines, Golden, Colorado 80401, U.S.A. Tel: +1 303 273 3321; Fax: +1 303 273 3314.

Jun. 12-16. *Seventh International Symposium on the Ordovician System: Las Vegas, USA (Margaret Rees, Department of Geosciences, University of Nevada, Las Vegas, NV 89154-4010, USA. Tel: 0101 702 739 3262. Fax: 0101 702 597 4064).*

Jun. 13-15. *Radar Remote Sensing: A Tool for Real-Time Land Cover Monitoring and GIS Integration. The Canadian Remote Sensing Society, Saskatoon, Saskatchewan, Canada.* Contact: Jeff Whiting, 306-933-5423; fax 306-933-7817; email whij@src-4330.src.sk.ca.

Jun. 13-15. *Integrating Remote Sensing and GIS for Natural Resource Management, National Biological Survey and U.S. Geological Survey, Lafayette, Louisiana.* Contact: Pat O'Neil, 318-266-8500; fax 318-266-8513.

Jun. 13-16. *GIS/LIS '95-Central Europe. Budapest, Hungary. Information: The International Secretariat: PO Box 5738: Bethesda, MD: USA (tel 1-301-469-3355; fax 1-301-469-3360).*

Jun. 15-23. *Campanion Carbonate-hosted Field Conferences in Ireland and Australia.* Contact: J. R. Vearncombe, Dept. of Geology, Univ. of Western Australia, Nedlands, Western Australia 6009, Ph.: (61) 9-380-2637.

Jun. 18-22. *Rapid excavation and tunneling, mtg., San Francisco.* (Society for Mining, Metallurgy, and Exploration, Box 625002, Littleton, Colo. 80162-5002. Phone: 303/973-9550. Fax: 303/979-3461).

Jun. 18-22. *Rapid Excavation and Tunnelling: San Francisco, USA (SME, Box 625002, Littleton, CO 80162-5002, USA. Tel. 0101 303 973 9550. Fax: 0101 303 979 3461).*

Jun. 18-23. *Singapore. Southeast Asia conference on Geomorphology: intern. Ass. of Geomorphology.* Avijit Gupta, Dpt of Geography, Nat. university of Singapore, Singapore 0511. Fax 65/777 3091.

Jun. 18-25. *Sofia zeolite meeting, Sofia Bulgaria.* (Georgi N. Kirov, Chair of Mineralogy, Faculty of Geology and Geography, University «Sv. Kl. Ohridski», 15 Tzar Osvooboditel Blvd., 1504 Sofia, Bulgaria. Fax: 3592-44-64-87 [April '94].

Jun. 23-25. *Graptolite Working Group, by International Palaeontological Association, int'l. conf., Long Beach, Calif.* (Stan Finney, Dept. of Geological Sciences, California State Univ., Long Beach, 90840. Phone: 310/985-8637. Fax: 310/985-2315. E-mail: scfinney@beach.csulb.edu).

Jun. 25-27. *Heavy oil, int'l. mtg., Calgary.* (Society of Petroleum Engineers, Meetings and Exhibitions Dept., Box 833836, Richardson, Texas 75083-3836. Phone: 214/952-9393. Fax: 214/952-9435).

Jun. 25-28. *AWRA 1995 Annual Summer Symposium - Water Resources and Environmental Hazards: Emphasis on Hydrologic and Cultural Insight in the Pacific Rim, Honolulu, Oahu, HI.* Contact: A. Ivan Johnson, A. Ivan Johnson, Inc., 7474 Upham Ct., Arvada, CO 80003, Ph.: (303) 425-5610.

Jun. 25-30. *Elementary science leadership institute, Short course, Washington, by National Science Resources Center.* (Director of Outreach, NSRC/Smithsonian Institution, Suite 880, 600 Maryland Ave. S.W., Washington, D.C. 20024. Phone: 202/287-2063. Fax: 202/287-2070. E-mail: jlee@nas.edu).

FUTURE EFG COUNCIL MEETINGS

1995

Jun. 9-11. Dublin (Ireland)

Dec. 1-3. Paris (France)

1996

Jun. Netherlands

Jun. 26-29. Paris, France. *36^e symposium de la SAID (sté pour l'avancement de l'interprétation des diagraphies) et SPWLA.* M. le Vice-Président, Technology SPWLA, 8866 Gulf Freeway, suite 320, Houston, Texas, 77017 USA. Tel. 1/713 947 8727. Fax 1/713 947 7181.

Jun. 26-30. *Acidic deposition: science and policy, int'l. mtg.,* Gothenburg, Sweden. (Peringe Grennfelt. Swedich Environmental Research Institute, S-402 58 Gothenburg. Phone: + 46(0)31 46 00. Fax: +46(0)31 48 21 80).

June 26-July 1. *European coal conference,* Prague, Czech Republic, by Charles University, and others. (J. Pesek, Faculty of Science. Chrles University, Albertov 6, 128 43 Prague 2, Czech Republic. Phone: +2-24915472. Fax: +2-296084).

Jun. 28-29. *Organic-mineral Interactions in Soils and Sediments:* Newcastle upon Tyne (David Rimmer, Dept of Agriculture & Environmental Science, King George VI Building, University of Newcastle, Newcastle upon Tyne NE1 7RU).

Jul. 1-7. Saxe, Thuringe, Allemagne. *Excursion de l'Association des géologues du Permien.* J.-P. Deroin, B.R.G.M. DR/G.I.G., P. 6009, F 45060 Orléans Cedex 02, France. Fax 33/38 64 31 64.

Jul. 2-6. *10th Bathurst Meeting of Carbonate Sedimentologists:* London (Dan Bosence, Dept of Geology, Royal Holloway, University of London, Egham, Surrey TW20 0EX).

Jul. 2-14. *International Union of Geodesy and Geophysics. mtg.,* Boulder, Colo. (IUGG General Assembly. c/o American Geophysical Union, 2000 Florida Ave. NW, Washington, D.C. 20009).

Jul. 3-7. *International Earth Science Congress:* Johannesburg, S Africa (J M Barton Jnr, The Sessions Convenor, Centennial Geocongress, Dept of Geology, Rand Afrikaans University, PO Box 524, Auckland Park, 2006 South Africa).

Jul. 3-9. *Coastal sedimentology, mtg.,* Niteroi, Brazil. (Cleverson Guizan Silva, Dept. de Geologia/LAGEMAR, Universidade Federal Fluminense, Av. Bento de Maria da Costa 115-a. Charitas, Niteroi, R.J. 24.370-190. Brazil. Fax: 5521-711-9917).

Jul. 3-14. Boulder, Co, USA. *IAHS symposium, workshops & joint IAHS/IAMAS symposium.* R. Hadley, 3784 S Depew Street, Denver, Co 8 235, USA. Tel. 1/303 986 750. Fax 1/303 871 4000.

Jul. 4-8. *The Clay Minerals Society 32nd Annual Meeting:* Baltimore, USA (Patricia Jo Eber, The Clay Minerals Society, PO Box 4416, Boulder, CO 80306, USA).

Jul. 9-13. *Science, Culture & Communication for the 21st Century:* Barcelona, Spain (IFSE-8 Secretariat, Apartado 16009, E-08080, Barcelona, Spain).

Jul. 9-14. *SPIE 40th Annual Meeting/International Symposium on Optical Science, Engineering and Instrumentation, «Call for papers.»* International Society for Optical Engineering, San Diego, California. Contact: SPIE 206-676-3290.

Jul. 10-12. *Pyrometallurgy, mtg.,* Cambridge, England. (Conference Office. Institution of Mining and Metallurgy, 44 Portland Place,

London W1N 4BR. Phone: +44 71 580 3802. Fax: +44 71 436 5388).

Jul. 10-14. Sydney, Australie. *Reefs and carbonate platforms in the Pacific and Indian oceans.* D.D. Bergersen, Dpt Geology & Geophysics, university of Sydney, Australia. Tel. 61/692 4050. Fax 61/692 0184.

Jul. 10-14. *APCOM XXV 1995, Applications of Computers and Operations Research in the Minerals Industries,* Brisbane, Australia. Contact: The Australasian Institute of Mining and Metallurgy, Sally McIlwaine, P.O. Box 122, Parkville Victoria Australia 3052, Ph.: (03) 347-3166.

Jul. 10-14. *2nd International Conference of Pelagic Biogeography:* Amsterdam, Netherlands (S Van der Spoel, Institute of Taxonomic Zoology, PO Box 94766, 1090GT Amsterdam, The Netherlands).

Jul. 15. *Ecology Field Trip, Bureau of Land Management, Bakersfield to Point Sal,* California. Dr. Wilkerson, Ph.: (805) 391-6081 or write to MOTHER LODGE c/o Gregg Wilkerson, 7005 Hooper Ave., Bakersfield, CA 93308.

Jul. 16-19. *Animal wastes and the land-water interface, interdisciplinary mtg.,* Fayetteville, Ark. (Patti Snodgrass, Arkansas Water Resources Center, 113 Ozark Hall, University of Arkansas, Fayetteville, 72701. Phone: 501/575-4403. Fax: 501/575-3846) [November '093].

Jul. 16-20. 5th South East Asian and 36th Australian Surveyors Congress. Singapore. *Information: The Institutions of Surveyors, Australia Inc.: GPO Box 1349: Adelaide, South Australia 5001: Australia (tel. 61-8-278-1346; fax 61-8-370-3293).*

Jul. 17-21. Amsterdam, Pays-Bas. *2th Int. Conference on Pelagic Biogeography (ICOPB).* S. Vander Spoel, Institute of Taxonomic Zoology, P.O. Box 94766, 1090 GT Amsterdam, Pays-Bas. Tel. 31/20 525 5402.

Jul. 17-21. *6th International Conference on Coelenterate Biology:* Sydney, Australia (Ruth Mawson, Centre for Ecostratigraphy & Palaeobiology, School of Earth Sciences, Macquarie university, NSW 2109, Australia).

Jul. 18-20. *Introduction to GPS for Natural Resource Assessment and Survey, National Biological Survey and U.S. Geological Survey,* Lafayette, Louisiana. Contact: Pat O'Neil, 318-266-8500; fax 318-266-8513.

Jul. 19-20. *Virtual Reality in Society Engineering and Science:* London (The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG. Tel: 071 839 5561).

Jul. 23-25. *Williston basin, mtg.,* Billings, Montana, by Montana, North Dakota, and Saskatchewan Geological Societies. (W. Kip Carrol, phone: 406/245-2367) [June '94].

Jul. 23-25. *Seventh International Williston Basin Symposium,* Billings, MT. Contact: Dennis Rebrig, SIWBS, 4924 Rimrock Road, Billings, MT 59106, Ph.: (406) 656-4785.

Jul. 23-28. *Elementary Science Leadership Institute, short course,* Washington, D.C., by National Science Resources Center. (Director of Outreach, NSRC/Smithsonian Institution, Suite 880, 600 Maryland Ave. SM Washington, D.C. 20024. Phone: 202/287-2063. Fax: 202/287-2070. E-mail: jlee@nas.edu).

Aug. 1-2. *Dam Engineering '95:* Kuala Lumpur, Malaysia (Dam Engineering '95, Conference Secretariat, 150 Orchard Road, #07-14, Orchard Plaza, Singapore 0923).

Aug. 3-10. Berlin Allemagne. *INQUA'95. XIV.^o* Congrès intern. In n.^o 49. E. Derbyshire, RHBNC, London University, Egham, Surrey TW20 OEX, G.-B. Fax 44/273-748919.

Aug. 4-14. *30th International Geological Congress:* Beijing, China (Secretariat Bureau, 30th International Congress, PO Box 823, Beijing 100037, China).

Aug. 5. *Ecology Field Trip, Bureau of Land Management, Bakersfield to Ojai and Santa Paula,* California. Dr. Wilkerson, Ph.: (805) 391-6081 or write to MOTHER LODGE c/o Gregg Wilkerson, 7005 Hooper Ave., Bakersfield, CA 93308.

Aug. 6-9. *4th International Symposium on Large Spatial Databases '95, Intergraph,* Portland, Maine. Contact: Kathleen Hornsby, 207-581-2149; fax 207-581-2206; email kathleen@mecan1.maine.edu.

Aug. 6-9. *Celebrate, Anticipate, Innovate: 50 More Years of Partnerships. Soil and Water Conservation Society,* Des Moines, Iowa. Contact: Tim Kautza, 800-843-7645 ext 12.

Aug. 7-12. *Kimberlite Conference, Novosibirsk,* Russia, by International Mineralogical Association, and others. (N.P. Pokhilenko. United Institute of Geology, Geophysics, and Mineralogy, Russian Academy of Sciences, Siberian Branch, 630090 Novosibirsk 90, Russia. Fax: 007 3832 352692).

Aug. 9-10. Berlin, Allemagne. *Terrestrial carbon cycle changes (during the past 150 ky). In n.^o 52.* H. Faure, J.-M. Adams, A.A. Velichko, LGQ/C.N.R.S., Univ. Luminy case 907, F-13288 Marseille Cedex 9, France. Tel. 33/91 26 96 47. Fax 33/91 26 66 38.

Aug. 12-17. URISA '95. San Antonio, Texas, USA. *Information: URISA: 900 Second St N. E. Suite 403: Washington DC 20002; USA (tel 1-202-289-1685).*

Aug. 13-16. *Congress on sedimentary geology,* St. Petersburg, Fla., by Society for Sedimentary Geology. (SEPM, Box 4756. Tulsa. Okla. 74159-0756. Phone: 800/865-9765. Fax: 918/743-2498).

Aug. 13-17. *URISA '95, Urban & Regional Information Systems Association.* San Antonio, Texas. Contact: 202-289-1685.

Aug. 15-21. *3rd International Ichnofabric Workshop:* Bornholm, Denmark (Richard Bromley, Geological Institute, University of Copenhagen, Olster Voldgade 10, DK 1350, Copenhagen, Denmark).

Aug. 17-22. *Water-rock interaction, symposium,* Vladivostok, Russia. (Secretary General (WRI-8), Oleg Chudaev, Far East Geological Institute, 690022 Vladivostok, Prospect 100-letiya Vladivostok 159. Phone: 7 4232 312567 or 7 4232 311312. Fax: 7 5098 512430. E-mail: fegi@vise-net.iasnet.com.) [March '94].

Aug. 19-23. Vancouver, Canada. *Waste processing and recycling in mineral and metallurgical industries. 2nd int. symp.* S.R. (Ram) Rao, Dpt Mining & Metallurgical Engineering, Mc Gill University, Montreal, Québec H3A 2A7, Canada. Tel. 1/514 398 8492. Fax 1514 398 4492.

Aug. 20-24. *The First Latin American Geophysical Conference & Exposition of the Latin American Geophysical Union (ULG) and the Fourth Intl Congress of the Brazilian Geophysical Society (SBGF) jointly sponsored by SEG, SBGF, ULG, EAEG, and AAPG, Rio de Janeiro, Brazil.*

Aug. 20-25. *Euroclay '95 - Clays and Clay Materials Science.* Leuven Belgium. Conference Secretariat Euroclay '95. Dpt. of Interphase Chemistry, Katholieke Universiteit Leuven, K. Mercieraan 92. B-3001 Heverlee, Belgium. Tel: 32 16 321610. Fax: 36 16 321998.

Aug. 21-25. *International Limnogeological Congress, IGCP projects 219 and 324,* Copenhagen, Denmark, by GLOPALS, and others. (Nanna Noe-Nygaard, Geological Institute, University of Copenhagen, Oster Voldgade 10, Copenhagen 1350 K. Phone: 45-35322491. Fax: 45-35322499).

Aug. 22-24. *Introduction to Wetland Image Processing and Classification. National Biological Survey and U.S. Geological Survey,* Lafayette, Louisiana. Contact: Pat O'Neil, 318-266-8500; fax 318-266-8513.

Aug. 22-25. *Greenhouse Gases: Mitigation Options:* London (IEA Greenhouse Gas R&D Programme, c/o CRE, Stoke Orchard, Cheltenham, Glos GL52 4RZ).

Aug. 22-Sept. 1. Duluth, MN, USA. *3th Intern. field Conference and symposium on intraplate magmatisme IGCP 336: Petrology and Metallogeny of Volcanology and intrusive rocks.* Penny Morton, Dept geology, Univ. Minnesota, Duluth, MN 55 812, USA. Tel. 1/218 726 7962. Fax 1/218 726 8275.

Aug. 24-Sept. 5. Grenade, Espagne. *2^e Colloque international sur les lherzolites orogéniques et les processus dans le manteau.* Excursions à Ronda (Espagne) et Beni Boussera (Maroc). H. G. Barszcz, Géofluides GBE/ISTEEM-C.P. 057. univ. Montp., place E.-VBataillon, 34095 Montpellier Cedex 5, France. Tel. 33/67 14 39 33. Fax 33/67 14 47 74.

Aug. 27-Sept. 1. *Geology of the eastern Mediterranean region, int'l. mtg.,* Jerusalem, by International Union of Geological Sciences, and others. (Secretariat. Second International Symposium on the Geology of the Eastern Mediterranean Region, Box 50006. Tel-Aviv 61500 Israel. Phone: 972 3 5174571. Fax: 972 3 655674).

Aug. 28-31. *Mineral deposits, biennial mtg.,* Prague, Czech Republic, by Ministry of the Environment. (Jan Pasava, Czech Geological Survey. Klarov 131/3, 118 20 Praha 1. Czech Republic. Phone: (42)-2-537011. Fax: (42)-2-7980965).

Aug. 28-Sept. 1. Montréal, Canada. *Tectonique et métallogénie des ceintures orogéniques du Précambrien inf. & moy.* Réunion int. & 10 exc. In n.º 50. J. A. Percival, Com. géol. Canada, 601, rue Booth, Ottawa, Ontario, Canada, K 1A 0E8., Tel. 1/613 995 4723. Fax 1/613 995 9273.

Aug. 28-Sept. 1. *Early/mid Precambrian orogenic belts, int'l. mtg.,* Jerusalem, by International Union of Geological Sciences, and others. (Secretariat. Second International Symposium on the Geology of the Eastern Mediterranean Region. Box 50006. Tel-Aviv 61500 Israel. Phone: 972 3 5174571. Fax: 972 3 655674).

Aug. 28-Sept. 1. *Early/mid Precambrian orogenic belts, int'l. mtg.,* Montreal. (J. A. Percival. Geological Survey of Canada, 601 Booth St., Ottawa. Ontario K1A 0E8. Phone: 613/995-4723. Fax: 613/995-9273. E-mail: jpercival@601C.gsc.emr.ca).

Aug. 28-2 Sep. *3rd Hutton Symposium: The Origin of Granites:* College Park, USA (Michael Brown, Dept of Geology, University of Maryland at College Park, College Park, MD 20742, USA. Tel: 0101 301 405 4082. Fax: 0101 301 314 9661).

Aug. 28-2 Sep. *XIII International Congress on the Carboniferous-Permian:* Krakow, Poland (XIII ICC-P Secretary General, Prof dr hab Sonia Dybowa-Jachowicz, Panstwowy Instytut Geologiczny, Oddzial Gornoslaski, 1 Krolowej Jadwigi, 41-200 Sosnowiec, Poland. Tel: 010 483 266 2036. Fax: 010 483 266 5522).

Sept. 1. Beijing, Chine. *Mesozoic terrestrial ecosystem and biota.* 6th symp. Chuankui Li, Institute of Vertebrate Paleontology and Paleoanthropology, P.O. Box 643, Beijing 10 00 44, Chine.

Sept. 1. Sudbury, Ontario, Canada. *Brachiopods actuels et fossiles.* Congrès int. In n.º 46. P. Cooper, Université Laurentienne, Dept. of geology, Ramsey Lake road, Sudbury, Ont. Canada, P3 E 2 C 6.

Sept. 2. *Ecology Field Trip, Bureau of Land Management, Breckenridge Mountain and Havilla, California.* Dr. Wilkerson, Ph.: (805) 391-6081 or write to MOTHER LODGE c/o Gregg Wilkerson, 7005 Hooper Ave., Bakersfield, CA 93308.

Sept. 2-4. *Engineering Geology and the Channel Tunnel - The Channel Tunnel Symposium* at University of Brighton. Convenor Solveig Grover, Conference Administrator, ITEL, Watts Building, University of Brighton, Moulsecomb, Brighton, East Sussex BN2 4GJ.

Sept. 2-5. *3rd International Brachiopod Congress:* Sudbury, Ontario, Canada (The Secretariat, Dept of Geology, Laurentian University, Sudbury, Ontario P3E 2C6, Canada).

Sept. 3-6. *11th Geophysical Conference & Exhibition of the Australian Soc. of Exploration Geophysics,* Adelaide, South Australia (617-369-0477).

Sept. 3-9. *Radioactive waste management and environmental remediation. mtg.,* Berlin, by American Society of Mechanical Engineers. (Steven C. Slate, Battelle Pacific Northwest Laboratory, MSIN K1-19, Box 999, 902 Battelle Blvd., Richland, Wash. 99352. Phone: 509/375-3903. Fax: 509/375-5963. E-mail: sc-slate@pnl.gov).

Sept. 3-9. *17th International Cartographic Conference (ICC'95): Cartography Crossing Borders.* Barcelona, Spain. The technical exhibition from 5-7 September and the sessions of the 10th general assembly of the ICA/ACI on 3 and 9 September 1995. Information: Ms Jaume Miranda; Cartographic Institute of Catalonia; Balmes 209-211; E-08006 Barcelona. Catalunya: Spain (tel 343-218-87-58; fax 343-218-89-59).

Sept. 4-8. *Dyke conference, Jerusalem,* Israel. (Gidon Baer, Geological Survey of Israel, 30 Malkhe Yisrael St., Jerusalem 95501. Phone: 972-2-314231. Fax: 972-2-380688. E-mail: dike-conf@vms.gsi.gov.il).

Sept. 4-9. Bucarest, Roumanie. *10th Congress Regional Committee on Mediterranean Neogene Stratigraphy.* Florian Marinescu, RCMNS, Institute of Geology & Geophysics, 1 caransebes st., RO 79 678 Bucarest 32, Roumanie. Fax 40/13 12 84 44. Télex 122 86 IGRR.

Sept. 4-9. St-Petersbourg, Russie. *Precambrian of Europe and MAEGS: 9th Meeting of the Ass. of European Geological Soc. In n.º 51.* A.B. Kotov, Institute of Precambrian Geology, Makarova emb. 2. St-Petersbourg 199 034, Russie. Tel. 812/218 47 01. Fax 812/218 48 01.

Sept. 4-9. St-Petersbourg, Russie. *3th Inter. Exhibition Mineral resources of Russia.* Minerals, P.O. Box 25. St-Petersbourg, 199004, Russie. Tel. 812/355 7952.

Sept. 4-9. *Terrestrial plants in geologic time, int'l. mtg.,* Nanjing, China. (ICTPG, Dept. of Paleobotany, Nanjing Institute of Geology and Palaeontology, Nanjing).

Sept. 4-9. *Oil and Gas Presence on the Shelf of Russia:* Russia (PO Box 215 «Minerals» 199004, St Petersburg, Russia. Tel: 812 355 7952).

Sept. 4-9. *9th Meeting of the Association of European Geological Societies:* St Petersburg, Russia (Dr A B Kotov, Institute of Precambrian Geology & Geochronology, makarova emb. 2, St Petersburg 199034, Russia).

Sept. 4-9. *IGCP 328: Palaeozoic Microvertebrates - Final Meeting:* Paris, France (Dr Alain Blicck, Fax: (33) 20 43 69 00).

Sept. 4-15. Paris, France. *Premiers vertébrés: vertébrés inférieurs et PICG 328.* In n.º 51. A. Blicck, Univ. Sci. et Techn. de Lille, Sciences de la Terre, 59655 Villeneuve-d'Ascq Cedex, France. Tel. 33/20 43 41 40. Fax 33/20 43 69 00.

Sept. 6-8. Nancy, France. *Paléoréseaux hydrographiques quaternaires.* M. Deshaies. Univ. Nancy I, Lab. de Géographie, B.P. 3397, F. 54015 Nancy Cedex, France. Tel. 33/83 96 16 14 P1273 ou 1230. Fax 33/83 96 23 47.

Sept. 8-14. Bruxelles, Belgique. *2nd int. symp. on Cretaceous stage boundaries.* A. V. Dhondt, Inst. Royal Sc. Nat. de Belgique. Vautierstraat 29, B-1040 Bruxelles, Belgique. Tel. 32/2 627 44 92. Fax 32/2 646 44 33.

Sept. 10-13. *American Association of Petroleum Geologists, int'l. conf.,* Nice, France, by AAPG and Institut Français du Pétrole. (AAPG, Box 979, Tulsa, Okla. 74101. Phone: 918/584-2555) Call for Papers deadline: Nov. 15.

Sept. 10-13. *AAPG Intl Conference & Exhibition,* Nice, France (918-584-2555).

Sept. 10-14. *Geohazards and engineering geology, ann. conf.,* Coventry, England, by the Engineering Group of the Geological Society. (Steve Penn, Coventry Univ., School of the Built Environment, Priory St., Coventry, CV1 5FB) Abstracts due Nov. 30.

Sept. 10-15. Sant-Malo, France. *Migration'95: Chemistry & migration behaviour of actinides and fission products in the geosphere, 5th Int. conference.* Migration'95, Mme Frédérique Dykstra, Inst. de physique nucléaire, F-91406 Orsay Cedex, France. Tel. 33/69 41 73 18. Fax 33/69 41 64 70.

Sept. 10-20. Antalya, Turquie. *Karst water and environmental impacts. 5th int. symp.* Gütekin

Günay, Karst'95, P.O. Box 357 Kizilay 06420 Ankara, Turquie. Tel. 90/41 312 235 25 43. Fax 90/41 312 235 28 62.

Sept. 11-13. Paris, UNESCO, France. *Statistical and Bayesian methods in hydrological Sciences*. Nicole Boileau, Depart. MAI, ENGREF, 19, avenue du Maine, 75732 Paris Cedex 15, France. Tel. 33/1 45 49 89 30. Fax 33/1 45 49 88 27.

Sept. 11-14. Katowice, Pologne. *Karst fractured aquifers. Vulnerability and sustainability*. Int. conf. Andrzej Witkowski, Karst'95, Dpt Hydrogeology, Silesian Univ., str. Bedzinska 60, 41200 Sosnowiec, Pologne. Tel. 48/32 66 20 41. Fax 48/32 66 43 51.

Sept. 11-15. Londres, G.-B. *26th IAHR biennial congress*. R. White, Hydraulics Research Ltd. Wallingford, Oxfordshire, 440X 10 8BA, G.-B. Tel. 44/491 35381. Fax 44/491 32233.

Sept. 11-15. *45th Photogrammetric Week, Zeiss*, Stuttgart, Germany. Contact: 49-711-121-3201; fax 49-711-121-3297; email martina.kroma@ifp.unistut.tgart.de.

Sept. 15-20. Toulouse, France. *Le bassin d'Aquitaine: évolution sédimentaire et structurale*. In n.° 52. J. Rey, Lab. Géologie sédimentaire et Paléontologie, univ. P.-Sabatier, 39, allées J.-Guesde, F 31062 Toulouse, France. Tel. 33/61 53 02 35 poste 385. Fax 33/62 26 71 40.

Sept. 17-20. Athènes, Grèce. *XV^o symp. of the Carpatho-Balkan geological Association*. G. Migiros, Inst. Mineralogy-Geology, Iera Odos 75, 11855 Athènes, Grèce. Tel. 30/13 47 31 43. Fax 30/13 46 08 85.

Sept. 18-19. Paris, France. *Evolution et environnement des organismes microscopiques*. Réunion SGF, SFS, CNRS, GDR88, MNHN, APF, APE. P. De Wever, Lab. stratigraphie C. 117-4 place Jussieu, 75252 Paris Cedex 05, France. Tel. 33/44 27 47 86. Fax 44 27 38 31.

Sept. 18-20. *Remote sensing for marine and coastal environments*. Seattle, by Environmental Research Institute of Michigan, and others. (Robert H. Rogers. ERIM. Box 134001, Ann Arbor, Mich., 48113-4001. Phone: 313/994-1200, ext. 3453. Fax: 313/994-5123).

Sept. 18-23. Pavie, Italie. *From rifting to drifting in present-day and fossil ocean basins*. Int. ophiolite symp. IOS, R. Tribuzio, Dpt di Scienze della Terra, Univ. di Pavia, via Abbiategrasso 209, I-27 000 Pavie, Italie. Tel. 39/382 50 58 74. Fax 39/382 50 58 90.

Sep. 19-21. *Integrating Color Infrared (CIR) Aerial Photography and CAD Computer System, National Biological Survey and U.S. Geological Survey*, Lafayette, Louisiana. Contact: Pat O'Neil, 318-266-8500; fax 318-266-8513.

Sept. 19-24. Valence, Espagne. *X^o Palynology symposium of A.P.L.E.* Isabel Mateu Andres, Dept. Bio. Vegetal, Fac. de Biología, c/doct. Moliner, 50 E-46100 Burjasot, Valence, Espagne. Tel. 34/96 386 43 74. Fax 34/96 386 43 72.

Sept. 21-23. *International Conference on Spatial Information Theory, Technical University Vienna*, Semmering, Austria. Contact: Irene Orchard, 43 1 58801-3787; fax 43 1 504 3535; email coisit@geoinfo.tuwein.ac.at.

Sept. 25-30. Tokyo, Japon. *ISRM 8th intern. congress on rock mechanics*. Conference and event Dpt, Simul. Intern. Inc. Kowa, Bldg n.° 9, 1-8-10,

Akasaka, Minato-ku, Tokyo 107, Japon. Tel. 81 3/3586-8691. Fax 81 3/3586-4531.

Sept. 26-29. Paris, France. *Espace et urbanisme souterrains*. In n.° 52. André Guillerme et Sabine Barles, Inst. Français d'Urbanisme, TMU, F-77420 Champs-sur-Marne, France. Tel. 33/64 68 91 62. Fax 33/64 68 96 87.

Sept. 27-30. Rome, Italie. *Volcanoes in town*. Carmela Freda, volcanoes in town, Dept. di Scienze della Terra, Univ. La Sapienza P. Le Aldo Moro, 5, 00185 Rome, Italie. Tel. 39/6-490-630. Fax 39/6-4464-729.

Sept. 29-Oct. 2. *Canadian paleontology, conf. and symposium on the paleobiology and evolution of the bivalvia*. Joint mtg., Drumheller, Alberta. (Paul A. Johnston, CPC-V. Royal Tyrrell Museum of Palaeontology, Box 7500. Drumheller. TOJ OYO, Canada. Phone: 403/823-7707. Fax: 403/823-7131).

Oct. 1-5. *Prosperity and professional geology, ann. mtg.*, Denver, by the American Institute of Professional Geologists. (William V. Knight. AIPG National Headquarters, Suite 103, 7828 Vance Drive. Arvada, Colo. 80003-2124. Phone: 303/431-0831. Fax: 303/431-1332).

Oct. 2-4. *Latin American Industrial Minerals. Opportunities for Development*. Hotel Carrera. Santiago. Chile. Industrial Minerals Information Limited. Park House, Park Terrace, Worcestes Park, Surrey, KT 47 HY. UK. Fax: 44 181 3378943.

Oct. 4-6. MARISY 95: African Forum on Remote Sensing for Environment and Development. Rabat. Morocco. Information: Royal Centre for Remote Sensing (CRTS); 16 bis, Avenue de France; Agdal, Rabat; Morocco (tel. 212-7-77-06-11 and 212-7-77-63-05/06; fax 212-7-77-63-00).

Oct. 6-8. *Gems of Russia: Russia* (PO Box 215 «Minerals» 199004, St Petersburg, Russia. Tel: 812 355 7952).

Oct. 6-8. Breitenbach (rég. Basibie) Suisse. *10^o Congrès national de spéléologie*. Schweizerische Gesellschaft für Hohienforschung Sektion Basel, CP, CH-4003 Bâle, Suisse.

Oct. 8-10. *Mid-Continent Section. American Association of Petroleum Geologists. mtg.*, Tulsa, Okla. (AAPG Convention Dept., Box 979, Tulsa, 74101. Phone: 918/584-2555).

Oct. 8-11. Nice, France. *AAPG int. conference & exhibition*. AAPG, Convention Dept. P.O. Box 979, Tulsa, OK 74101, USA. Tel. 1/918 584 2555. Fax 1/918 584 2274.

Oct. 8-12. *4th Techn ical Symposium on Prepress, Proofing, & Printing, Society for Imaging Science & Technology*, Chicago, Illinois. Contact: 703-642-9090; fax 703-642-9094.

Oct. 9-10. *China's Mineral Potential*. Swissôtel, Beijing. Industrial Minerals Information Limited Park House, Park Terrace, Worcestes Park, Surrey, KT 47 HY. UK. Fax: 44 181 3378943.

Oct. 9-12. New-Delhi, Inde. *Diamond Jubilee research Development session*. C.V.J. Varma, Central Board of Irrigation and Power, Malcha Marg, Chanakyapun, New-Delhi 110021, Inde. Tel. 91/11 3015 984. Fax 91/11 3016 347.

Oct. 9-13. *GSA '95 Conference*. Nairobi, Kenya. Information: Secretary: GSA 95 Conference Organizing Committee; PO Box 60199; Nairobi; Kenya.

Oct. 9-14. *International Earth Sciences Colloquim on the Aegean Region: Turkey* (Dr Ozkan Piskin, General Secretary, IESCA 1995, DE University, Dept of Geology, PK 74 (EU-PTT), 35100 Bornova, Turkey).

Oct. 10-14. Halifax, Canada. *5th intern. conference on Palaeoceanography*. Larry Mayer ou Frank Rack, Ocean Mapping Group, Dept. of Survey engineering, P.O. Box 4400, Fredericton, NB, Canada E3B 5 A 3. Tel. 1/506/453 3577. Fax 1/506/453 4943.

Oct. 11-14. *Annual Meeting of the American Association of Stratigraphic Palynologists*: Ottawa, Canada (Dr Pierre Richard, Laboratoire de Paleobiogeographie et de palynologie, Dept de géographie, Université de Montreal, CP 6128, succursale A, Montreal, Quebec, Canada).

Oct. 16-20. La Haye, Pays-Bas. *FISOL'95, 5th int. symp. on land subsidence*. In n.° 52. FISOL'95, F.H. Schröder, c/o Netherlands Geodetic Commission, PO Box 5030, NL-2600 GA Delft, Pays-Bas.

Oct. 17-19. Nice, France. *Fifth Intern. Conference on seismic zonation*. Association for Earthquake engineering, Domaine de Saint-Paul, B.P. 1, 78470 Saint-Rémy-les-Chevreuse, France. Tel. 33/1 30 85 22 03. Fax 33/1 30 52 75 75.

Sept. 18-20. Toulouse, France. *Protection et mise en valeur du patrimoine paléontologique. Congrès intern*. In n.° 53. F. Duranthon, Museum d'Histoire naturelle, 35, allees Jules-Guesde, 31000 Toulouse, France. Tel. 33/61 52 00 14.

Oct. 22-25. *3rd Canadian Conference on Computer Applications in the Mineral Industry*: Montreal, Canada (Hani Mitri, Dept of Mining & Metallurgical Engineering, McGill University, 2020 University St, 21st Floor, PO Box 102, Montreal, Quebec, Canada, H3A 2A5).

Oct. 22-25. Le Caire, Égypte. *AAPG - Intern. Conference and Exhibition*. AAPG Convention department, P.O. Box 979, Tulsa, OK 74101, USA. Tel. 1/918 584 2555.

Oct. 22-27. Isukuba, Japon. *6th Intern. Conference on the Conservation and management of lakes*. Lakes Kasumigaura, Water poll. Control div., Dpt of Civil Life and Environ. Ibaraki Prefect. Government 1-5-38 Sannomaru, Mito, Ibaraki 310, Japon. Tel. 81-292 246 905. Fax 81/292 332 351.

Oct. 23-29. *Rift Sedimentation and Tectonics in the Red Sea Gulf of Aden Region*: (Dan Bosence, Dept of Geology, Royal Holloway University of London, Egham, Surrey TW20 0EX).

Oct. 24-26. *Introduction to Wetland Remote Sensing and Mapping*. National Biological Survey and U.S. Geological Survey, Lafayette, Louisiana. Contact: Pat O'Neil, 318- 266-8500; fax 318-266-8513.

Oct. 24-27. *Mat-Construct '95*, Libreville, Gabon. Contact: D. Parker, Metra Sofres Ltd, Melrouse House, 42. Dingwall Road, Croydon CRO 2NE, UK. Tel: 44 181 688 5535. Fax: 44 181 688 4005.

Sept. 25-27. Nice, France. *Magmatismes dans le Sud-Est de la France*. In n.° 51. J.-P. Pupin, ZIRC, lab. petrologieminéralogie, Fac. Sciences, parc Valrose, F 06108 Nice, France. Tel. 33/93 52 98 62. Fax 33/93 52 99 19 ou 99 39.

Oct. 26-27. *European Seismic Design Practice - Research & Applications*: UK (Rachel Coninx,

Conference Office. Tel: 071 839 9807. Fax: 071 233 1743).

Oct. 28-Nov. 3. 11th International Congress on Advances in Non-Impact Printing Technologies, Society for Imaging Science & Technology, Hilton Head, North Carolina. Contact: 703-642-9090; fax 703-642-9094.

Oct. 30-Nov. 3. St-Petersbourg, Russie. *Runoff computations for water projects*. J.A. Shiklomanov, State hydrological Inst., 2nd line 23, St-Petersbourg 199053, Russie. Tel. 812/213 3517. Fax 812/213 1028.

Nov. 1-5. International Symposium on Reservoir-Induced Seismicity: Beijing, China (Prof Houqun Chen, LOC of ISORIS 95, IWHR, PO Box 366, Beijing, 100044, China).

Nov. 5-9. Denver, USA. *Soc. of Exploration Geophysicists*, Ann. conf. Soc. of Exploration Geophysicists, Convention Assistant, P.O. Box 70 2740, Tulsa, OK 74170, USA.

Nov. 6-9. New-Orleans, USA. *Geological Soc. of America*. Ann. meet. Jean Kinney, GSA Headquarters, Box 9140, 3300 Penrose Place, Boulder, Co 80301, USA. Tel. 1 303 447 2020.

Nov. 6-17. 3rd Workshop on Non-linear Dynamics and Earthquake Prediction: Trieste, Italy (International Centre for Theoretical Physics, I34100 Trieste, Italy).

Nov. 7-11. New-Delhi, Inde. 6th int. Symposium on river sedimentation. In n.º 51. Shri C.V.J. Varma, Central Board of Irrigation and Power, Malcha Marg, Chanakyapuri, New-Delhi 110021, Inde. Tel. 91/11-301 5984. Fax 91/11-301 6347. Telex 31 66415 CBIP-IN.

Nov. 8-10. 1st International Conference on Towards Relatively Sustainable Energy and Mineral Resource Development in Developing Countries: Hat Yai, Thailand (Dept of Mining & Metallurgical Engineering, Faculty of Engineering, Prince of Songkla University, Hat Yai, Thailand. Tel: 66 074 212897).

Nov. 13-17. GIS/LIS '95 Annual Conference and Exposition, AAG, ACSM, AM/FM International, ASPRS, and URISA, Nashville, Tennessee. Contact: GIS/LIS '95 301-493-0200; fax 301-493-8245.

Nov. 14-16. GIS/LIS '95 Annual Conference and Exposition. Nashville, Tennessee, USA. Information: GIS/LIS '95; 5410 Grosvenor Lane; Bethesda MD 20814-2112; USA (Tel. 1-301-493-0200; fax 1-301-493-8245).

Nov. 16. Industrial Minerals Forum & Annual Dinner 1995. Heathrau/Slough Marriott Hotel, Slough, London, UK. Contact: Jackie Gregson, IMIL Marketing Dept. Park House, 3 Park Terrace, Worcestes Park, Surrey, KT 47 HY. UK. Tel: 44 171 827 9977. Fax: 44 181 3378943.

Oct. 17. Orléans, France. *Géodynamique du paléoprotérozoïque*. In n.º 53. M. Faure, Inst. univ. de France, Dept Sciences de la Terre, Univ. Orléans, 45067 Orléans Cedex 2, France. Tel. 33/38 41 71 71. Fax 33/38 41 73 09.

Dec. 11-12. Brest, France. *Divergence lithosphérique et accretion océanique*. J.-P. Rehault, Univ. Bretagne occidentale GDR 910 «GEDO», 6, av. Le Gorgeu, 29287 Brest Cedex, France. Tel. 33/98 31 61 21.

Dec. 11-15. AGU Fall Meeting: San Francisco, California (AGU Meetings Dept, 2000 Florida

Avenue, NW Washington, DC 20009, USA. Tel: 0101 202 462 6900. Fax: 0101 202 328 0566).

Dec. 14-15. Paris, France. *Faune, flore et stratigraphie séquentielle. Réunion Société géologique de France et Association française de paléontologie*. In n.º 52. M.T. Venec Peyré, Inst. de Paléontologie, 8, rue Buffon, 75005 Paris, France. Tel. 33/1 40 79 30 03.

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Jan. 21-25. 3rd International Conference/Workshop on Integrating GIS and Environmental Modeling. NCGIA, Santa Fe, New Mexico. Contact: 805-893-8224; fax 805-893-8617; email sandi@ncgia.ucsb.edu.

Feb. 27-29. 11th Thematic Conference on Geologic Remote Sensing, ERIM, Las Vegas, Nevada. Contact: Robert Rogers, 313-994-1200 ext. 3453; fax 313-994-5123; email raeder@vaxc.erim.org.

Mar. 8-15. Le Caire, Égypte. *Geological surveys and sustainable development-geological survey of Egypt Centennial*. In n.º 53. M. EL Hinnawi, geological Survey of Egypt 3 Salah Salem Rd., Abbassiya, Le Caire, Égypte. Tel. 20/38 1625. Fax 20/(002) (02) 820 128.

Mar. 25-26. AM/FM International Conference, AM/FM International, Seattle, Washington. Contact: 303-337-0513.

Apr. 15-18 Applied Earth Science Meeting. Geological Society at Warwick

Apr. 21-24. 12th Industrial Minerals International Congress. Fairmont Hotel, Chicago. USA. Industrial Minerals Information Limited. Park House, Park Terrace, Worcestes Park, Surrey, KT 47 HY. UK. Fax: 44 181 3378943.

Apr. 20-26. ASPRS/ACSM Annual Convention, ASPRS and ACSM, Baltimore, Maryland. Contact: 301-493-0200.

Apr. 24-27. Grenade, Espagne. VI Inter. Conference on environmental geology and Land-use planning. VI ONGAOT. Dept. Congresos de Viages Sacromonte c/Angel Ganivet 6, 18009 Grenade, Espagne. Tel. 34/958 225 598-9. Fax 34/958 224 617.

May. 19-22. San Diego Ca, USA. *American Association of Petroleum Geologists*. AAPG Convention Dpt. P.O. Box 979, Tulsa, OK 74101, USA. Tel. 1/918 584 2555.

May 20-24. AGU Spring Meeting: Baltimore, Maryland (AGU Meetings Dept, 2000 Florida Avenue, NW Washington, DC 20009, USA. Tel: 0101 202 462 6900. Fax: 0101 202 328 0566).

May 27-29. Geological Association of Canada - Mineralogical Association of Canada Joint Meeting: Winnipeg, Canada (G S Clark, Department of Geological Sciences, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2. Tel: 0101 204 474 8857. Fax: 0101 204 261 7581).

Jun. 3-5. 4th International Applied Statistics in Industry, International Statistical Applications Institute. Contact information will be forthcoming.

Jun. 9-12. North American Paleontological Convention -VI: Washington, USA (NAPAC-VI, c/o Dept of Paleobiology, Mail Stop 121, National Museum of Natural History, Washington DC 20560, USA).

Jun. 16-20. PACON96: 7th Pacific Conference on Marine Science and Technology, «Call for papers.» PACON, NOAA, USGS, Australian Marine Science Consortium, et al. Honolulu, Hawaii. Contact: 808-956-6163; fax 808-956-2580.

Jun. 17-21. Trondheim, Norway. 7th Int. symposium on landslides. Norwegian Geotechnical Society, P.O. Box 40, Taasen, N-0801, Oslo 8, Norway.

Jul. 9-19. ISPRS: Spatial Information from Images, ISPRS, Vienna, Austria. Contact: Karl Kraus, +43 1 58801; fax +43 1 505 62 68; email isprs96@email.tuwien.ac.at.

Aug. 4-14. Beijing, Chine. 30th International Geological Congress. In n.º 51. Preparatory Commission for the 30th IGC, Baiwanzhuang Road, 26 Fuchengmenwai, P.O. Box 823, Beijing 100037, R.P. de Chine. Tel. 86/1 832 77 72. Fax 86/1 832 89 28. Telex 22 2721 CAGS CN.

Sep. 1-8. Arthur Holmes Meeting. *Explosive Volcanic Eruptions*. Geological Society. Island of Santorini, Greece

Oct. 27-Nov. 1. 12th International Congress on Advances in Non-Impact Printing Technologies, Society for Imaging Science and Technology, San Antonio, Texas. Contact: 703-642-9090; fax 703-642-9094.

Oct. 28-31. Denver, Co, USA. GSA: annual meeting. J. Kinney, GSA Headquarters, Box 9140, 3300 Penrose Place, Boulder Co. 80301, USA. Tel. 1/303 447 2020.

Nov. 16-22. GIS/LIS '96 Annual Conference and Exposition, AAG, ACSM, AM/FM International, ASPRS, URISA, Denver. Colorado. Contact: GIS/LIS '96, 301-493-0200; fax 301-493-8245.

Dec. 9-13. AGU Fall Meeting: San Francisco, California (AGU Meetings Dept, 2000 Florida Avenue, NW Washington, DC 20009, USA. Tel: +1202 462 6900. Fax: +1202 328 0566).

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Mar. 21-27. AM/FM International Annual Conference, AM/FM International, San Antonio, Texas. Contact: Paula Delie, 303-337-0513.

April 4-6. ASPRS/ACSM Annual Convention, ASPRS, ACSM, Seattle, Washington. Contact: 301-493-0200.

Jun. 16-20. Toronto. Canada. IRF XIIIth World Meeting. c/o Ministry of Transportation 1201 Wilson Avenue. Downsview (Ontario) (Canada M3M 138). Tel: 416 2355107. Fax: 416 235 5151.

Sept. 2-6. Istamboul, Turquie. *Symposium Int. on geoscience and environmental protection*. T. Cebi, Int. symposium geoscience, P.K. 464 06 424 Kizilay-Ankara, Turquie. Tel. 90/312 432 30 85. Fax 90/434 23 88.

Please send meeting notice three months before publication date to: *The Editor*, EFG, ICOG, Av. Reina Victoria 8, 28003 Madrid, Spain. Tel: 34-1-3495778, Fax: 34-1-4426216. Include date, title, sponsor, place of meeting and telephone number for information.

EUROPEAN GEOLOGIST ARTICLES

The EFG need quality articles for future issues of European Geologists. EFG members and readers are encouraged to submit articles or contact the Editor to recommend individuals who should be asked to submit articles. Submissions should be 1000 to 2000 words in length, although longer texts could be accepted. Articles submitted on diskette along with a hard copy are appreciated. The Editor uses DOS, WordPerfect 5.1, or Mac files, both preferably in 3,5 diskettes. Photographs, figures, tables, etc are welcome. Photographs enhance articles and make great EG covers. Be sure to send photographs when possible with your article, or send your favorite photograph for considerations for a future EG issue. Submission deadline is six weeks preceding month of issue.

Acceptable languages will be Spanish, English and French, although for the sake of uniformity it would be desirable to have them in English.

To ease the editorial work some simple guidelines are included:

1.-File on IBM formatted disk (in Wordperfect and ASCII format) or Mac, as well as a good «top» copy/printout. Submissions should be 1000 to 2000 words in length.

2.-Format:

Margins: Right and left margins 2,5 cm
Top margin 2,5 cm
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Title: Times Roman (or similar) font, bold, capitals, point size 12, centred on line
2 blank lines
Name/s of author/s
3 blank lines

Subtitles: Times Roman (or similar) font, bold, lower case, point size 12, left aligned.
1 blank line

Text: Times Roman (or similar), point size 12
single line spacing
left aligned
no indentation at start of paragraph
blank line between paragraphs

Page numbers: Please write page numbers in pencil only.

Diagrams and Tables: Paste into text or provide separately at correct size.

Photographs: Provide preferably slides. The magazine will be published in B&W but front page will be in colour, so one original will be selected from the presented works in each issue.

References:

Citation in the text - e.g. ...as discussed recently (Green, 1993)

...as discussed recently by Green (1993)

Churchward, P.E. and Rosenbaum, J.B. 1963. Sources and recovery methods for rhenium. *Report of Investigations, United States Bureau of Mines*, N° 6246.

Ho, C.S. and Lee, C.N. 1963. *Economic Minerals of Taiwan*. (Taipei: Geological Survey of Taiwan).

EDITORIAL EMPHASIS

Professional Topics

- Geology in EUROPE
- Education of Geology
- Employment
- Ethics & Standards of Practise
- Public perception of Geology & Geologists
- Certification & Licensing
- Practising Geology Internationally
- Governments & Geologists

Euronews

- European Parliament news. Laws
- European Commission news. Contracts
- CGEU news. Activities

Technical Topics

- Mineral Resources
- Petroleum Geology
- Hydrogeology
- Environmental Geology
- Engineering Geology
- General Geology

Opinion

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- Future trends

Geonews

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EUROPEAN FEDERATION OF GEOLOGISTS (EFG)

The representatives of the British, Spanish, French and Italian National Associations of Geologists met in London in 1978 in order to establish the European Federation of Geologists and outline its Statutes, the final text being drafted during the meetings that took place in Paris and Madrid in the months of March and November 1979. Belgian and Irish geologists attended those meetings as observers.

The E.F.G. was officially born in Paris in 1980 during the 26th International Congress of Geology, and was composed of Professional Associations from Spain (A.G.E.-I.C.O.G.); Italy (A.N.G.I.-O.N.G.); Portugal (A.P.G.); United Kingdom (I.G. now incorporated in the G.S.); France (U.F.G.); Belgium and Luxembourg (U.B.L.G.). In July of the same year the Statutes were presented to the European Economic Community in Brussels.

The geologists of the Federal Republic of Germany (B.D.G.) became members of the E.F.G. in 1985, Ireland (I.A.E.G.) in 1988, Finland (F.U.G.) and Sweden (S.N.) in 1989, Greece (A.G.G.) and The Netherlands (K.N.G.M.G.) in 1993.

The E.F.G. currently represents some 65,000 geologists from 13 countries.

OBJECTIVES OF THE E.F.G.

1. To represent the geological profession in Europe. The Committee of Geologists of the European Community (C.G.E.C.) of the E.F.G. is the organization authorized to make representation to the European Union and its various bodies.
2. To safeguard and promote the present and future interests of the geological profession in Europe, including:
 - To guarantee the free movement of geologist in Europe, with the mutual recognition of their academic and professional qualifications by the adoption of the title of European Geologist.
 - To promote the harmonisation of education and training.
 - To define and protect the title of geologist and related professional titles.
 - To promote the code of professional ethics of the E.F.G.
 - To provide advice and assistance to constituent members National Associations.
3. To promote a European geological policy with regard to the responsible use of the Earth's Natural Resources and in particular:
 - Energy Resources.
 - Mineral Resources.
 - Hydrogeological Resources and their pollution problems.
 - Geological problems in land development, environmental protection and the exploitation of raw materials.

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