

THE STATE OF THE MINING INDUSTRY IN 1999: A BRIEF REVIEW

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1. General situation: did we touch the bottom?

The mining industry greeted with relief, a year ago, the end of the *annus terribilis* 1998 which saw the prices of many metals reach rock bottom levels. Hopes for 1999 laid mainly on an improvement in East Asian economies and their infringements on the economies of the rest of the world, particularly in Brazil and the US. Brazil managed to stave off the financial crisis it had to face at the end of 1998 and the US economy remained very active. There had been concern about a coming deep depression, but it did not happen. To be sure, the world economy in 1999 had to endure a severe storm but the hurricane expected by some did

not materialise. As a matter of fact, since mid-year the horizon has been much brighter than in 1998. The Asian dragons seem to be on the way of recovery and in Japan the worst could be now over. Confidence in the world economy is slowly returning, demand is growing and in the minerals industry there was a marked price improvement for numerous commodities. The big question is: will the US still be in a position to drag the world economy?

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IMPORTANT NOTICE

THIS ISSUE OF SGA NEWS INCLUDES THE PROPOSAL OF THE REVISED SGA CONSTITUTION: ALL MEMBERS ARE INVITED TO READ THE AMENDMENTS AND APPROVE OR REJECT THEM THROUGH THE BALLOT ANNEXED

1999 Mineralium Deposita

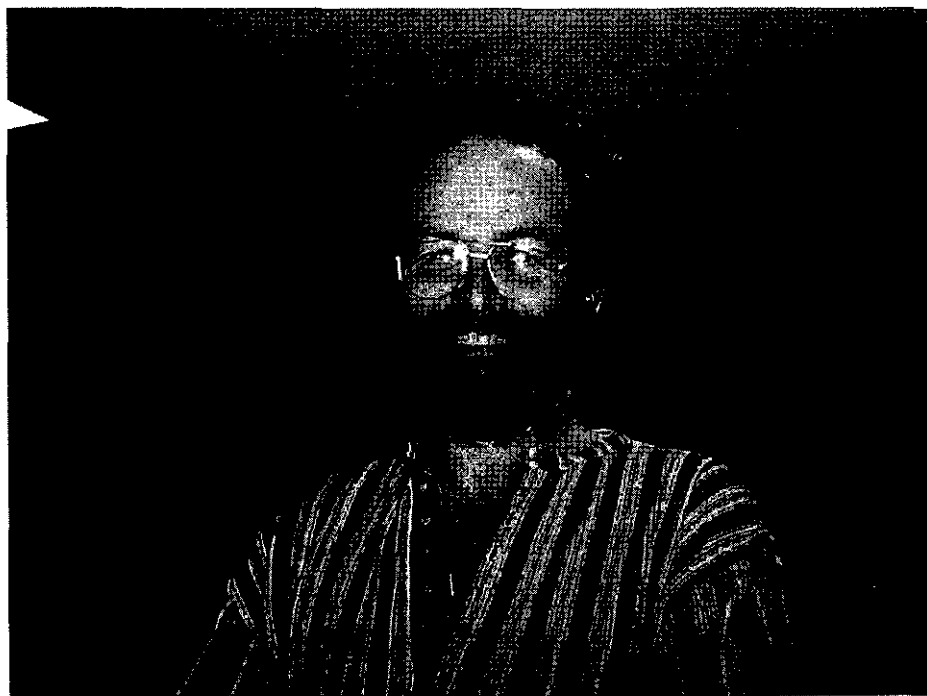
Reviewer Award

attributed to

Professor Nick Oliver

**Economic Geology Research Unit, School of Earth Sciences
James Cook University
Townsville, QLD
Australia**

The Editorial Board of *Mineralium Deposita* has awarded Professor Nick Oliver (Economic Geology Research Unit, School of Earth Sciences, James Cook University, Townsville QLD Australia) Reviewer of the year 1999 for review of the manuscript «Gold mineralization during transition from pervasive to focused fluid flow in a metamorphic-hydrothermal continuum, Otago Schist, New Zealand» by Craw D., Windle S. J. and Angus P. V. (Appeared in *Mineralium Deposita* v. 34/4, p. 382-394: Gold mineralization without quartz veins in a ductile-brittle shear zone, Macraes Mine, Otago Schists, New Zealand). ♦



Professor Nick Oliver

SGA News

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NEWS OF THE SOCIETY

News of the Council

Results of 1999 Ballot

The Executive Secretary of SGA, J. Pasava, presented the final results of the SGA 1999 ballot, congratulating the newly elected Council Members and thanking all retired Officers for their past work for SGA. Also the SGA President, H. Papunen, expressed high appreciation for the important contributions to SGA made by past Council Members and welcomed the new Officers.

SEG proposal for a future SEG-SGA collaboration

Holly Stein (SEG Vice-President and new SGA Council Member) presented a proposal for a joint participation of SGA and SEG in two distinct meeting venues. This proposal was approved by the SEG Executive Committee and the SEG Council at their meetings held on February 28-29, 2000 in Salt Lake City, Utah. After fruitful discussions, the SGA Council approved the general framework of the SEG proposal. SGA will propose that SEG takes a larger role in the organization of the 6th Biennial SGA Meeting (Cracow, Poland, 2001) providing that a similar role will be offered to SGA for the organization of the SEG Global Exploration 2002 Meeting (Denver, USA, 2002). Accordingly, the 6th Biennial SGA Meeting would be jointly organized by SGA and SEG (all future conference materials and publications should have both SEG and SGA logos displayed). The Global Exploration 2002 Meeting would be jointly organized by SEG and SGA (all future conference materials and publications should have both SEG and SGA logos displayed).

SGA and IAGOD

J. Aichler (IAGOD Secretary General), invited both SGA and SEG to take an active part in the upcoming IAGOD Quadrennial Meeting which will be held in July 2002 in Windhoek, Namibia. Furthermore, the Council was also informed about the next IAGOD Quadrennial Meeting which should be held in 2006 in St. Petersburg, Russia. SGA and SEG are both invited to take an active part in this meeting.

Revisions of the SGA Constitution (see also pages 17-21)

The SGA Council approved the final suggested constitutional changes and stressed the importance of a fast distribution of this document to SGA members through the present issue of SGA News, for approval of the amendments. The Council agreed to distribute only the paragraphs that contain the changes, the full text of the SGA Constitution being available at the Society home page (<http://www.min.tu-clausthal.de/www/sga/sga.html>).

Report of the President

The SGA President, H. Papunen, reported on his meeting with the SGA Regional Vice President for Australia (R. Hill) and the SEG President-Elect (D. Groves) during a recent business trip to Australia. The preparation of the 4th International Archaeological Symposium (September 2001, Perth, Australia) is progressing. H. Papunen and D. Groves (SEG President-Elect) discussed future collaboration between SGA and SEG that should be mutually beneficial and enhance the international presence of both organizations.

Report of the Executive Secretary

The SGA Executive Secretary, J. Pasava, reported on the new membership from August 17, 1999 to March 28, 2000 and emphasized that the number of new members reached 100 for this period!

Report of the Chief Editors, MD

The report was presented by B. Lehmann (Chief Editor of the European MD Office). The SGA Council approved the regular changes in the Editorial Board and also the replacement of J. Hedenquist, who resigned at the end of 1999, by L. Diamond (Leoben, Austria).

Report of the SGA Promotion Manager

G. Borg (SGA Promotion Manager) informed the Council about the display of professional SGA booths and printing of updated SGA flyers that were sent to the SGA regional offices.

CHANGE OF ADDRESS FORM

If you have changed (or will change in the near future) your address please fill in this form and send it to:

Peter M. Herzig, SGA Treasurer - Institut für Mineralogie, TU Bergakademie Freiberg, Brennhausgasse 14 - D-09596 Freiberg, Germany; phone: +49 3731 39-2662/2626; fax: +49 3731 39-2610; e-mail: herzig@mineral.tu-freiberg.de

Name:

Old address:

Complete new address (including phone, fax and e-mail)

Your suggestions and ideas for any topic of interest to SGA are welcome! They can be addressed to any Council member or to

Dr. Jan Pasava
SGA Executive Secretary

Czech Geological Survey
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CZECH REPUBLIC

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Appropriate communication between Regional SGA Vice-Presidents and the Promotion Manager will be developed in the future. A main objective is to use the portable displays, as well as SGA Flyers, SGA Publication Order Forms, Free Copies of MD and SGA News for promotion of SGA at selected important scientific gatherings worldwide.

6th Biennial SGA Meeting - Report by the Chairman of the Organizing Committee (see also pages 23-24)

Prof. Piestrzynski reported on the status of the preparation of the 6th Biennial SGA Meeting - August 26-29, 2001, Cracow, Poland and the Council very highly appreciated the work of the Organizing Committee.

Past Activities

- SGA-IAGOD Meeting (August 22-25, 1999, London, UK)
- 6th Metallogeny short course (October 4-8, 1999, Brest, France)
- The Cordilleran Round-Up Meeting (January 2000, USA)

The Cordilleran Round-Up Meeting was attended by 2000 geoscientists from industry and academia. The SGA booth was manned by two SGA student members, Craig McClung and Eric Anderson, with help from Lance Miller and Richard Goldfarb when possible. A total of 19 new members were signed up at the booth. The Council appreciated the efforts of the US colleagues in continuing the promotion of SGA in North America.

Future Activities

- 31st IGC (August 6-17, 2001, Rio de Janeiro, Brazil) - SGA will run 3 symposia
- 6th Biennial SGA Meeting (Krakow, Poland, 26-29 August 2001)
- 4th International Archean Symposium (September 24-28, 2001, Perth, Australia)
- 11th Quadrennial IAGOD Symposium (July 2002, Windhoek, Namibia)

Various

H. Papunen presented a nomination of F. Saupé, prepared by Ch. Amstutz, to become a Honorary Member of SGA. The Council approved this nomination unanimously.

Next SGA Council Meeting and SGA General Assembly

The next SGA Council Meeting will be held on August 8, 2000 in the afternoon (details on the precise venue and time will be

provided later) and the SGA General Assembly will be held on August 9, 2000 in the afternoon (details on the precise venue and time will be provided later). SGA Councillors and members who plan to go to Rio are kindly requested to reserve time for these two Society events. ♦

!!!IMPORTANT NOTICE!!!

Applications to SGA for meeting sponsorship have to be submitted to Jan Pasava, SGA Executive Secretary, on appropriate forms developed and approved by the SGA Council which are available at the SGA home page on Internet:

<http://www.min.tu-clausthal.de/www/sga/sga.html>

Other requests will not be considered.

SOCIETY FOR GEOLOGY APPLIED TO MINERAL DEPOSITS (SGA)

SGA COUNCIL 2000

Executive Committee

President	H. Papunen (Finland)
Vice-President	P. Fenoll-Hach Ali (Spain)
Executive Secretary	J. Pasava (Czech Republic)
Treasurer	P. Herzig (Germany)
Chief Editors:	B. Lehmann (Germany) - MD
	European Office
	R. Goldfarb (U.S.A.) - MD
	North American Office
	M. Chiaradia (Switzerland) - SGA News

Regional Vice-Presidents

N. America	D. Leach (U.S.A.)
S. America	M. Brodtkorb (Argentina)
Asia	M. Shimizu (Japan)
Australia	R. Hill (Australia)
South Africa	H. Frimmel (South Africa)

Councillors: term ending on December 31, 2001

F. Barriga (Portugal)
G. Borg (Germany)
Ch. Heinrich (Switzerland)
H. Kucha (Poland)
J. P. Milesi (France)
W. Paar (Austria)
Ch. Stanley (U.K.)

Councillors: term ending on December 31, 2003

D. Eliopoulos (Greece)
B. Gemmel (Australia)
A. Bjorlikke (Norway)
I. R. Jonasson (Canada)
F. Mitrofanov (Russia)
H. Stein (U.S.A.)

Ex officio Members, SEG

President	R. H. Sillitoe (U.K.)
Executive Secretary	J. A. Thoms (U.S.A.)

Ex officio Members, IAGOD

Secretary General	J. Aichler (Czech Republic)
Membership Secretary	R. Seltmann (Germany)

SOCIETY FOR GEOLOGY APPLIED TO MINERAL DEPOSITS

Report of the Executive Secretary about membership

68 Regular Members, 3 Junior Members, 26 Student Members, 2 Senior and 1 Corporate Member applied for membership from August 17, 1999 to March 28, 2000

LIST OF NEW SGA MEMBERS
(August 17, 1999-March 28, 2000)

Regular Members

Alfredo Luis CASTILLO, Salta, ARGENTINA
Diana Irene MUTTI, University of Buenos Aires, Buenos Aires, ARGENTINA
Raymond BUTLER, South Guildford, WA, AUSTRALIA
Kevin CASSIDY, Australian Geological Survey Organisation, Canberra, AUSTRALIA
David GROVES, CSMD, University of Western Australia, Nedlands, WA, AUSTRALIA
Andrew LAVENDER, Western Metals Ltd., West Perth, WA, AUSTRALIA
Ken LAWRIE, Australian Geological Survey Organization, AUSTRALIA
Paul MESZAROS, Mount Colah, NSW, AUSTRALIA
Wayne O'NEIL, North Exploration, Dangbourne, Reading, AUSTRALIA
Joanna PARR, CSIRO Exploration and Mining, North Ryde, NSW, AUSTRALIA
Marcus TOMKINSON, Mulcaloo, WA, AUSTRALIA
John WALSHE, CSIRO, Nedlands, WA, AUSTRALIA
Christopher YEATS, CSIRO Exploration and Mining, North Ryde, AUSTRALIA
Larry W. DIAMOND, Institut f. Geowissenschaften, Universität Leoben, Leoben, AUSTRIA
Gianna Maria GARDA, GSA-IGUSP, Sao Paulo, BRAZIL
Peter BARKER, Vancouver, BC, CANADA
Dubé BENOIT, Geological Survey of Canada, Sainte-Foy, Québec, CANADA
Robert CAMERON, Phelps Dodge Corporation of Canada, Limited, Vancouver, CANADA
Peter DADSON, Calgary, Alberta, CANADA
Alan GALLEY, Geological Survey of Canada, Ottawa, ON, CANADA
Charles GREIG, Pentincton, BC, CANADA
Avrom HOWARD, Odyssey Resources Limited, Toronto, ON, CANADA
Davis RHYS, Surrey, BC, CANADA
Jeremy RICHARDS, University of Alberta, Edmonton, Alberta, CANADA
Duane POLIQUIN, Fairfield Minerals Ltd., Vancouver, BC, CANADA
George SIMANDL, Victoria, British Columbia, CANADA
Eduardo M. VACA, Billiton Ecuador B.V., Quito, ECUADOR
Hanaa SALEM, Cairo, EGYPT
Alain CHAUVET, Université d'Orléans, Orléans Cedex, FRANCE
Francois FONTAN, «URTAUT» CORRON SAC, FRANCE
Matthias GOEBBELS, Erlangen University, Erlangen, GERMANY
Torsten GRAUPNER, TU Bergakademie Freiberg, Freiberg/Sachsen, GERMANY
Christoph HARTKOPF-FROEDER, Geologisches Landesamt, Kreefeld, GERMANY
Maria ECONOMU, University of Athens, Athens, GREECE
Marilena MORONI, University of Milano, Milano, ITALY
Mavrizio VIOLO, Università di Roma, Roma, ITALY
Hirotomo UENO, Kagoshima University, Kagoshima, JAPAN
Michael DUANE, Kuwait University, Safat, KUWAIT
Pete SIEGFRIED, Windhoek, NAMIBIA
Stephen JENSEN, Mineral Teck Peru S.A., Lima, PERU
Marek NIEC, Krakow, POLAND
José Mário CASTELO BRANCO, Amarante, PORTUGAL
Jean des RIVIERES, Rio Algom Exploration Inc., Dublin, REPUBLIC OF IRELAND
Alastair MOYES, Anglo American plc., Johannesburg, REPUBLIC OF SOUTH AFRICA
Harialos TSIKOS, Rand Afrikaans University, Johannesburg, REPUBLIC OF SOUTH AFRICA
Ivan BAKSHEEV, Moscow State University, Moscow, RUSSIA
F. MITROFANOV, Geological Institute, Kola Science Centre RAS, Apatity, RUSSIA
Ingrid KIGAI, IREM RAS, Moscow, RUSSIA
Oleg SIMONOV, Committee of Natural Resources on Taymyr, Norilsk, RUSSIA
Alexander STEKHIN, Moscow, RUSSIA
Dejan KOZELJ, Copper Institute Bor, Bor, SERBIA
Joan Carles MELGAREJO DRAPER, University of Barcelona, Barcelona, SPAIN
Arne BAKKE, Fairbanks, AK, USA
John C. BARNETT, Red Diamond Mining Company, Douglas, AK, USA

Katharine BULL, Fairbanks, AK, USA
Tom BUNDTZEN, Fairbanks, AK, USA
Cynthia DUSEL-BACON, U.S. Geological Survey, Menlo Park, CA, USA
Robert KAMILLI, U.S. Geological Survey, Tucson, AZ, USA
Rael LIPSON, Gold Fields Exploration, Inc., Englewood, CO, USA
J. Thomas NEELANDS, Miami, FL, USA
Carl NELSON, Boulder, CO, USA
Rob RETHERFORD, Anchorage, AK, USA
William WRIGHT, Sparks, NV, USA
Richard J. HERRINGTON, The Natural History Museum, London, UNITED KINGDOM
Richard JEMIELITA, Broomhill, Glasgow, Scotland, UNITED KINGDOM
J.B. Paul SAWYER, The Ridings Newick, Lewes, East Sussex, UNITED KINGDOM
Peter W. SCOTT, Camborne School of Mines, Redruth, UNITED KINGDOM
Bruce YARDLEY, University of Leeds, Leeds, UNITED KINGDOM

Junior Members

Dan McCOY, Fairbanks, AK, USA
Luke ANIKE, University of Southampton, Southampton, UNITED KINGDOM
Matthew ROWLAND, Kingston upon Thames, Surrey, UNITED KINGDOM

Student Members

Louis BUCCI, CSMD, University of Western Australia, Nedlands, WA, AUSTRALIA
Martin FAIRCLOUGH, James Cook University, Townsville, AUSTRALIA
R. Scott HEFFERNAN, Vancouver, CANADA
Robert HUSTON, Edmonton, CANADA
Steven PIERCEY, University of British Columbia, Vancouver, CANADA
Rainer ELLMIES, Berlin, GERMANY
Alexander OTTO, Freiberg / Sachsen, GERMANY
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Marcos R.S. FRESCATA, Lisboa, PORTUGAL
Alexandre LIMA, Rio Tinto, PORTUGAL
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Pamela NAIDOO, Verulam, REPUBLIC OF SOUTH AFRICA
Catharina SMIT, Stellenbosch University, Matricland, REPUBLIC OF SOUTH AFRICA
Sebastien BEUCHAT, University of Geneva, SWITZERLAND
Benjamin SALLIER, University of Geneva, SWITZERLAND
Hooshang ASADI HARONI, ITC, Delft, THE NETHERLANDS
Claire CHAMBERLAIN, Royal School of Mines, London, UNITED KINGDOM
Luke C.W. COX, Goldenlane, London, UNITED KINGDOM
Mark KENDRICK, Manchester, UNITED KINGDOM
Philip SCOTNEY, University of Southampton, Southampton, UNITED KINGDOM
Pascale ZIMMAN, University of Southampton, Southampton, UNITED KINGDOM
Eric ANDERSON, Boulder, CO, USA
Thomas DANIELSON, Blaine, WA, USA
Paul JENSEN, University of Alaska, Fairbanks, AK, USA
Craig McCLUNG, Denver Federal Centre, Denver, USA
Cameron ROMBACH, Fairbanks, AK, USA

Senior Members

Allen HEYL, Evergreen, CO, USA
Mike SAVAGE, London, UNITED KINGDOM

Corporate Members

COMINCO Ltd., Cameron R. ALLEN, c/o Cominco American Incorporated, Spokane, WA, USA

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We expect your letters with comments, news, criticisms, ...

from 1: THE STATE OF THE MINING INDUSTRY IN 1999: A BRIEF REVIEW

2. Disastrous start

However, at the beginning of 1999, there were few signs for optimism in the mining sector. The Asian crisis continued to weight heavily on basic industries and the weak demand in the steel sector translated into a new price weakening for raw materials such as coal and iron ore. In the **base metal sector**, there were signs that the worst might be over for some metals such as nickel and zinc; but copper and aluminium remained firmly depressed. Prices went on weakening and it was not until the second quarter that they recovered somehow. Gold reached its lowest price for twenty years (see below).

Results of this situation were not long to show: the great Canadian porphyry-copper Highland Valley closed down in January. Several gold mines followed the movement. South Africa was particularly struck with its high-cost underground operations. Other casualties were Zambia (copper) and Venezuela (aluminium) who, in the process of trying to privatise their industries, met important problems and delays.

3. After dark, dawn: hard and soft metals

Metal prices increased significantly in 1999, but mostly in the second half as shown in Table 1. But one has to remember that copper price was US\$ 2900/t in 1995!

The record-holder is certainly nickel, following the improved demand in stainless steel and the falling stocks. By September, it

was trading at twice the early January price and went on in excess of US\$ 8000/t until the end of the year and was still appreciating in the early months of 2000.

4. All that glitters is not gold, but sometimes PGMs

Gold prices remained very depressed (US\$ 270-280/oz, reaching even US\$ 253/oz) until the end of September when the announcement was made that a group of mainly European central banks would restrict future gold sales to only small quantities (see table 2). This immediately propelled the price 25% higher (US\$ 326/oz). The rally, however, was only a temporary respite and prices fell back since to their pre-September levels (US\$ 280-290/oz).

Silver fared better (US\$ 5.10/oz), but the strongest performers have been platinum and palladium. The latter posted a price improvement of 40%, overhauled platinum for the first time and finished the year at a record US\$ 440/oz. In the following weeks it was due to rise above US\$ 700/oz. Reasons for that situation are an increased demand by the booming auto industry (50%) and fears about Russian supplies. Indeed, Norilsk supplies the majority of the world palladium as well as platinum and its mine output seems unable to meet demand. So far the shortfall has been met by Russia's stockpiles which are however thought to be depleting (Russian sales of Pd in 1999: 1586 t = 65% of world production).

TABLE 1. PRICE VARIATIONS OF BASE AND PRECIOUS METALS in US\$/t or US\$/oz

Metal	January '99 (or lowest)	June 1999	End '99 (or highest)	Variation between highest and lowest (%)
Copper (US\$/t)	1360 (March)	1630	1830	+34.5
Zinc (US\$/t)	917	1017	1200	+30.5
Lead (US\$/t)	500 (high)	489	477 (low)	-5.0
Aluminium (US\$/t)	1141 (March)	1380	1621	+42
Tin (US\$/t)	5040	5215	6085	+21
Nickel (US\$/t)	4060	5520	8240	+103
Gold (US\$/oz)	289	253 (low)	280 (high: 326 in Oct.)	-3.0
Platinum (US\$/oz)	358	350	421	+20
Palladium (US\$/oz)	319	327	440	+37

TABLE 2. GOLD RESERVES IN CENTRAL BANKS AS IN 1997

Country	Tonnes	g/head of population	% of GDP
USA	8138	31	1.2
Germany	2960	36	1.5
Switzerland	2590	368	11.2
France	2546	44	2.0
Italy	2074	25	2.0
Netherlands	1081	70	3.3
Japan	754	6	0.2
Great Britain	573	10	0.5
Belgium	476	47	2.0
Austria	334	42	1.8

5. Exploration down the drain: geologists on the dole

As a result of low prices in 1998 and early 1999, mineral exploration in 1999 suffered a lot. Junior companies found it even more difficult to raise funding than in 1998, whilst the majors trimmed their budgets severely. The Canadian-based Metals Economy Group calculated that 1999 exploration budgets decreased by 23% after a 31% fall in 1998. Total spending is estimated at US\$ 2700 million against US\$ 5100 million in the peak year 1997 (see table 3).

The regional distribution of spending shows little change, with South America first, followed by North America, Australia, Africa (proportionally in decrease) and the Pacific-SE Asia region. A noticeable trend by some major companies was to compensate their dwindling in-house exploration by acquiring advanced projects at lower price or by grubstaking juniors with promising properties. This is a major danger for exploration: indeed the downside of such an attitude is to reduce drastically the number of geologists employed by major companies and to destroy established and experienced exploration teams.

In spite of such cuts in exploration, several important discoveries were advertised:

- Normandy's Wandoo gold deposit in Australia
- Good intersections at Chariot in the Tennant Creek district (e.g. 14 m at 66 g/t Au)
- The Brisas copper-gold deposit in Venezuela
- Pangea's Tuwalaka gold deposit in Tanzania, with up to 5 m at 121 g/t Au
- New ores found at Inco's Totten (Ontario) copper-nickel-platinum discovery
- Cameco intersected high-grade ore at La Roque near Dawn Lake (Athabasca), 55 km W of Rabbit Lake, with an intersection of 7 m at 30% U₃O₈.

Darnley Bay Resources went on investigating on the huge gravity anomaly in the Canadian NWT, comparable in size to that of Sudbury.

In South America, the activity was still important, particularly in Argentina (Pascua, copper-gold and Veladero, gold and silver). In Peru, the Tambo Grande copper-zinc-silver project went on and at Antapaccay, near Tintaya, BHP estimated 380 Mt at 0.89% Cu and 0.16 g/t Au in a porphyry and skarn-type of deposit.

In South Africa, the demand for PGMs fuelled re-evaluation of several prospects in the Bushveld Complex, particularly Winnaarshoek (345 t of PGM at an average grade of 5.5 g/t) and Marikana with 21.4 Mt at 2.6 g/t Pt and 1.3 g/t Pd (~ 90 t of PGM).

Romania was one of the few European countries where a sizable exploration for gold took place: the Coranda deposit in the Certej area is said to contain 80 t of gold and 465 t of silver.

6. Diamond is shining again

By using advanced technology, significant progress was made to outline additional deep sea reserves on Namibia's continental shelf. Indeed Namibian diamonds have the highest value/carat in the world (US\$ 325/ct against US\$ 10/ct in Australia). A possible new kimberlite potential was estimated in Mauritania. Meanwhile, Ekati, the first Canadian diamond mine started producing and the second one, Diavik (Aber Resources and Rio Tinto), should start production soon. Further kimberlite targets continue to be identified, notably at Kennady Lake (Monopros) and Snap Lake and Canada could soon become a major diamond producer with 12% (in tonnage) of the world market, i.e., more than South Africa.

De Beers Central Selling Organisation (sitting in Lucerne, Switzerland) achieved record sales of US\$ 5240 million in 1999 against US\$ 3350 million in 1998 (+ 57%). This is because the US consumption has been very high, accounting for 45% of the total world consumption of diamond jewellery. Japan, the second largest consumer, also showed a marked improvement, more than 10% in US dollar terms.

TABLE 3. EXPLORATION EXPENSES 1993-1999

The analysis of total exploration expenses from 1993 to 1999 for more than 200 companies representing over 90% of these expenses shows the following distribution:

	1993	1994	1995	1996	1997	1998	1999
Total expenses (in 10 ³ US\$)	1700	2100	2940	4600	5050	3500	2700
Yearly progression in %	+15	+24	+40	+56	+10	-31	-23
Geographic distribution of expenses (in %):							
USA	20	16		10	9	8.6	10
Australia	19	21		19	17	17.5	19
Latin America	19	26		27	29	29	29
Canada	17	14		13	11	11	11
SE Asia-Pacific region	7	8		12	11	9.4	8
Rest of the world (incl. Africa 1995)	18	15		7	7	7.4	8
Africa (from 1996 on)				12	17	17.5	15

7. Developments and privatisations

7.1 Developments

Funding could still be found at the development stage for world-class mineral deposits, e.g., at the **Antamina** copper-zinc property in Peru or at the **San Cristobal** silver deposit in Bolivia. But as a whole there was little investment interest in mining equities. In **Australia** there was a lot of excitement on the development of lateritic nickel deposits using the high pressure leaching process (see below) and also substantial interest in magnesium projects.

Two new zinc mines came on stream this year, **Lisheen** in Ireland (visited in August by a SGA fieldtrip) and the very large **Century** mine in Queensland, after many mishaps. In the copper sector, the first concentrates were shipped from two new world-class mines, the US\$ 1.36 billion **Los Pelambres** in Chile and the US\$ 1.8 billion copper-gold **Batu Hijau** in Sumbawa (Indonesia). Together these two mines will provide some 425,000 t/y of copper when at full production. **Batu Hijau** will soon be in a position to produce 700,000 t/y of copper concentrates plus 16 t/y of gold, and later 280,000 t/y of copper for at least 20 years. Reserves are estimated at 5 Mt copper and 365 t of gold. According to Newmont Gold which owns 45% of this deposit, the projected cash costs of production for the early years would be around US\$ 0.50/lb of copper (after gold credits). It could thereafter decline with improved ore grades in depth. The mill has a capacity of 120,000 t/d and the final concentrates grades 32.4% Cu and 27 g/t Au. Japanese partners hold 35% and an Indonesian company the remaining 20% interest.

In **Namibia**, Australia's junior company **Acclaim Uranium** will commission a full feasibility study on the **Langer Heinrich** uranium calcrete deposit, located 60 km from Rössing. **Acclaim** bought the deposit from **Gencor** for around US\$ 500,000. **Gencor's** previous work at **Langer Heinrich** outlined a resource of 22,000t U_3O_8 at an average grade of 0.4 kg/t (0.4‰) including a high grade core averaging 2 kg/t (2‰). Ore occurs in a 1-30 m (average 8 m) thick and more than 1500 m long near-continuous horizon beneath a few meters of recent overburden. Planned output would be 850,000t/y of ore providing 1100 t U_3O_8 . However, the grades seem pretty low when compared to the North-Canadian mines.

In **Tanzania**, where **Barrick** intends to go ahead with its **Bulyanhulu** underground operation, the **Golden Pride** gold mine started production. Elsewhere in sub-Saharan Africa, disappointment is still the main feeling, with civil wars looming in several countries. Nevertheless, gold exploration went on in West Africa, the least stricken zone.

7.2 Privatisations

In **Zambia** the protracted efforts by the government to privatise **Zambian Consolidated Copper Mines (ZCCM)** were almost completed with the announcement in October that **Anglo-American** was to acquire an 80% interest in **Konkola** and **Nchanga** Divisions. These assets contribute about 70% of Zambia's total copper output. The last remaining assets of ZCCM, the **Mufulira** Division and parts of the **Nkana** Division, appear set to be sold to **Quantum Minerals** of Canada and to the Swiss-based trader **Glencore International**.

It should be noticed that prior to its privatisation in the early 1970s, Zambia's copper industry was the third in the world with a production in excess of 700,000 t/y, while it is currently only 300,000 t/y (10th position in 1998). ZCCM remains a major employer and the country's principal source of hard currency but its losses are estimated at around US\$ 170 million/y. That is to say that the government hopes that the privatisation programme will ease the financial strain and allow the emphasis to be switched to other ailing sectors of the local economy.

8. Nickel in the spotlight, again a nickeliferous atmosphere in Western Australia

8.1 Lateritic nickel

A lot of attention was focused in 1999 on the new generation of lateritic nickel projects in Western Australia (Figure 1). Traditionally, a large part of nickel production was derived from nickel sulphides underground mines (Figure 1) by long known pyrometallurgical processes. This is now challenged by a new hydrometallurgical method allowing to treat the abundant surface low grade lateritic deposits which could not previously be mined economically using conventional processing methods. This new technology uses high-pressure acid leaching (PAL). Its success is still being assessed and some companies still doubt of its profitability. Nevertheless, it seems that PAL is going to open sooner or later a new way to produce nickel. Western Australia is hosting the first wave of PAL projects and, according to *Mining Journal* (Dec. 17, 1999, p. 475), all new Australian deposits, if reaching full capacity, could add 350,000 t to world annual capacity by 2006. As a matter of fact, these projects rely heavily on by-product cobalt to compensate for low nickel grades and an oversupply of cobalt could force its prices down, thus threatening the economy of such projects. If the new technology keeps its promises, new low-cost nickel mines could change dramatically the nickel market.

As an example, PAL received a boost when **Anglo-American**, with its expertise and financial resources, took a sizable interest (23%) in **Anaconda Nickel** which is developing the most ambitious Australian project, the US\$ 700 million **Murrin Murrin**, in partnership with a wholly owned subsidiary of **Glencore International** which holds 40%. Resources at **Murrin Murrin** are estimated at 315 Mt at 1% Ni and 0.065% Co. The deposit covers an area of 25 km² of flat ground and ore lies at shallow depth, typically at 20 m with 10 m overburden (*Mining Mag.* Oct. 1999, p. 208-216). Planned production is 4 Mt/y ore yielding 45,000 t/y Ni and 3000 t/y Co. It should later be expanded to 115,000 t/y Ni and 9000 t/y Co, making it the largest nickel single operation in the world (see also below).

Cawse (to **Centaur** and JV partner **Union Minière**) is more or less the same size: 213 Mt at 0.7% Ni and 0.04% Co with a planned production of 0.7 to 1.0 Mt/y at 1.8% Ni and 0.4% Co yielding 9000 t/y Ni and 1300 t/y Co. Depth is below 60 m.

Bulong is expected to be mined from 40 pits along a N-S strike length of 20 km. The main mineralization occurs between 5 and 40 m depth. Total resource is currently calculated to be 140 Mt grading 1% Ni and 0.1% Co. At a rate of 500,000 t/y **Bulong** will produce 9000 t/y Ni and 700 t/y Co. **Preston Resources**, the

owner, already plans an expansion of plant capacity to 2.5 Mt/y. Other projects exist in WA :

- **Ravensthorpe:** (Comet Resources) 252 Mt at 0.80% Ni and 0.04% Co.

- **Mt. Margaret:** 176 Mt at around 1% Ni with a potential reaching 300 to 400 Mt. Anaconda plans to commission Mt Margaret by the end of 2001. Peak production would be 100,000 t/y Ni and 5000 t/y Co. Combined production from Murrin Murrin and Mt Margaret would equate, if achieved, around 20% of current global demand. Identified resources in both deposits are 530 Mt at 0.93% Ni and 0.060% Co and establish the company with the world's third largest nickel reserve base.

- **The Pinnacles:** (Kanowna Lights) 50 Mt at 0.7% Ni with a potential of 100 Mt at >1% Ni.

- **Kalpini:** (Heron Resources) 55 Mt at 1.09% Ni and 0.08% Co. Another PAL project is known in NSW, Syerston, 400 km west

of Sydney: 100 Mt at 1.06% Ni with a planned production of 1.65 Mt/y.

But that is not all: other companies also have lateritic projects in other countries, e.g.:

- WMC advances its project in Cuba, where Billiton has its own project;

- BHP and Rio Tinto have interests in Indonesia;

- Phelps Dodge in Madagascar;

- Falconbridge in Ivory Coast and in New Caledonia;

- Eramet and Inco (Goro project) in New Caledonia;

Additionally Billiton imports lateritic ores from New Caledonia to feed its Yabulu (Qld) ammonia-leach plant. It should be remembered that this small Pacific island contains 25% of known nickel resources and that its laterites are much higher grade than those in Australia. Is the action going to switch to New Caledonia?

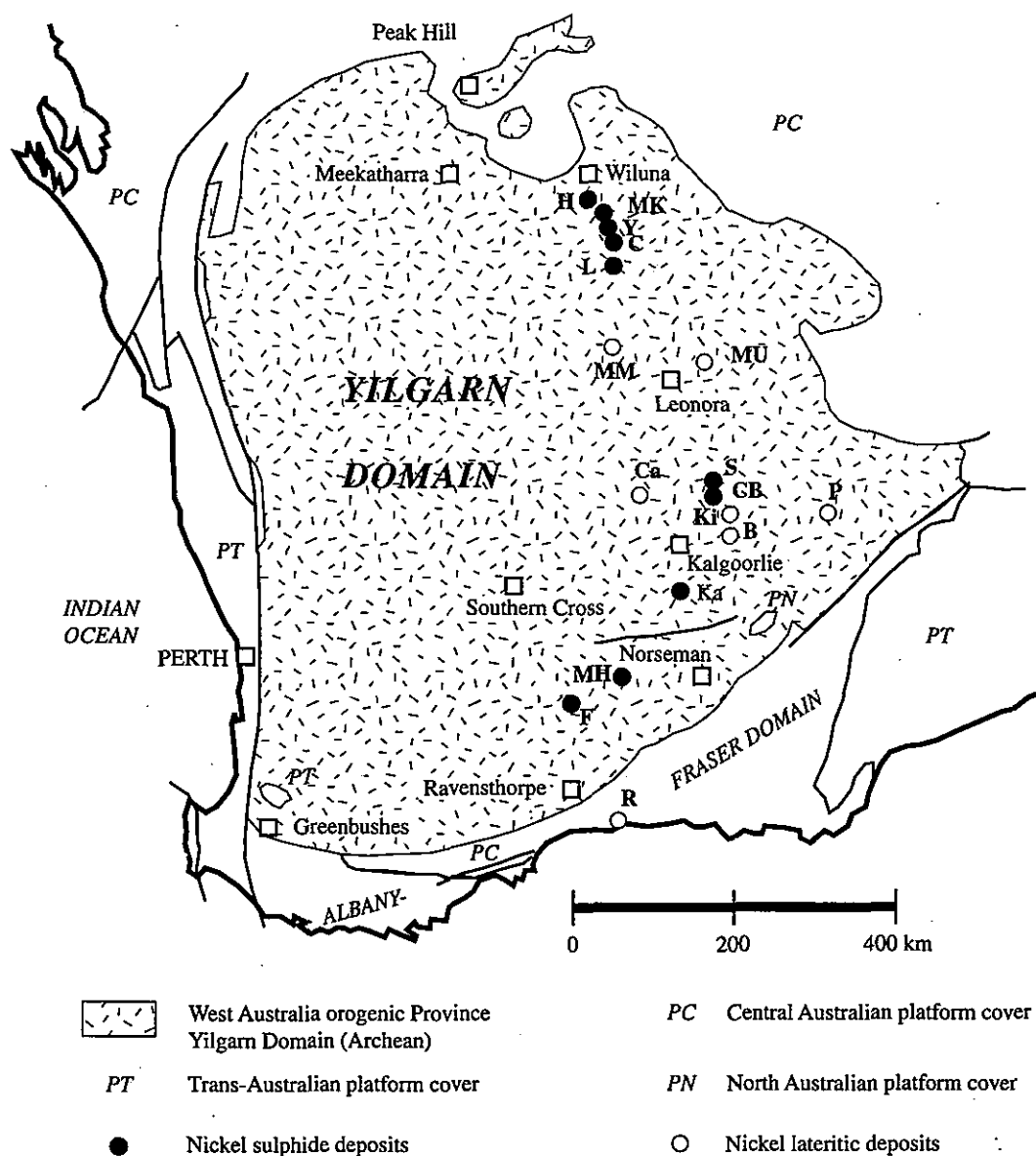


Figure 1: Nickel deposits in Western Australia.

Sulphide deposits: C=Cosmos; CB=Carr Boyd; F=Forrestonia; H=Honeymoon Well; Ka=Kambalda; L=Leinster; MH=Maggie Hays; MK=Mt. Keith; S=Silver Swan; Y=Yakabindie.

Lateritic deposits: B=Bulong; Ca=Cawse; Ki=Kalpini; MM=Mt. Margaret; MU=Murrin Murrin; P=Pinnacle; R=Ravensthorpe.

8.2 Sulphide nickel ores

Despite the situation outlined above, sulphide ores producers have not cast their last weapon. WMC is still the first Australian nickel producer with three sulphide mines (Mt Keith, Leinster, Kambalda) which yielded 120,000 t in 1998 (84% of West Australian production of 143,000 t). WA produced in 1998 13% of the world nickel and is the 3rd largest producer after Russia and Canada. The forecast for WA is around 180,000 t in 2000.

Inco's Voisey's Bay in Labrador is still in dispute with the provincial government who insists that a smelter is constructed on site whereas Inco prefers, initially at least, to send concentrates to be smelted in Sudbury.

The world largest nickel producer, Norilsk in Siberia, claimed that things were better since the rouble devaluation in 1998 which cut its costs. The company exports 90% of its production and two new mines will be developed within 5 years which would boost Norilsk's output of palladium and platinum.

9. Restructurations and mergers

Major changes took place in the industry in 1999. Australia's largest mining company, BHP, sold a series of its assets in order to stop the fall in its earnings and share price. It withdrew from Harvey platinum mine in Zimbabwe, closed the Beenup mineral sands operation in WA and its copper mines in the US. It also trimmed severely its exploration activity. Talks with Rio Tinto to possibly merge their giant Pilbara iron-ore operations fell through. In 1998 BHP had already sold its huge Groote Eylandt manganese mine. On the other hand, the main newcomer in the group, the Ekati diamond mine in Canada's Northwest Territories brought a profit of A\$ 80 million (US\$ 56 million) in the half year.

In the US, a major battle took place between the big three remaining copper producers, Phelps Dodge, Asarco and Cyprus Amax, to merge and consolidate. Eventually, a fourth element broke in, Grupo Mexico, and it captured Asarco whereas Phelps Dodge had to be satisfied with Cyprus Amax.

The newly moved to London Anglo-American established a foothold in Australia by acquiring Acacia Resources and a significant interest in Anaconda Nickel (see Section 8). Another partner in Anaconda, the Swiss Glencore International, is flexing its muscles and is rapidly emerging as a major participant in mining projects, throughout the world. It now rivals major mining companies in terms of assets base.

Aluminium producers were very active in mergers and acquisitions. The Al n°2 Canadian Alcan was involved in a three-way merger with European producers, the n° 4 French Pechiney and the Swiss Alusuisse. But latest news indicate that the European Commission will refuse the big merger, allowing only the marriage between Alusuisse and Alcan. Alcoa of the US (n°1) plans merger with fellow American Reynolds Metals (n°3).

In the coal sector, there were also divestments. Significantly, Shell offered its coal assets for sale. It thus definitely quits the mineral industry, following the move already made by other major oil producers such as BP-Amoco, Exxon, Atlantic Richfield, etc. Shell, however, remains in the oil sands business, namely in a C\$ 3.5 billion project in Alberta.

10. Conclusions: is the sky clearing ?

After the storm of 1998, the year 1999 proved far better than many had hoped. But it will probably still take some time for confidence to be fully restored within the mining industry. There, a lot will depend on the performance of the US economy, always on the razor's edge, and on the Japanese one, always convalescent. Europe, for it all, seems ultimately to get out of the recession and to enjoy a healthy growth.

Amongst the positive points, the political stability in South America, the destination of much recent mining investment (with a small flat for Venezuela ?) and the relatively strong continued economic growth in India and China. Together, both countries regroup one-third of the world's population and both are major consumer markets; however, their production is unable to keep pace with domestic demand and they are likely to require substantial foreign investment in their mining sector. So probably is Russia, but this is another story.

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Most informations are drawn from various 1999 issues of Mining Journal, notably those of the end of the year. The geologic background of Figure 1 comes from R. G. Warren (1972)- A commentary on the metallogenic map of Australia and Papua New Guinea, Bull. of BMR 145, Canberra. A large part of the information on WA nickel deposits is extracted from J. Chadwick (1999)- Laterites boost WA nickel, Mining Magazine, Oct., p. 208-216.

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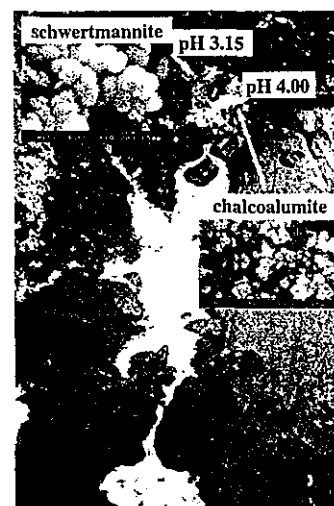
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Formal announcements will follow later this year with registration details in early 2001. If you wish more information in the meantime, please contact Jeff Hedenquist at the following e-mail address: Gordongeochem@aol.com

Organizers: Jean Cline, Jeff Hedenquist and John Thompson

11TH IAGOD QUADRENNIAL SYMPOSIUM/ GEOCONGRESS 2002

Windhoek, Namibia

July 29-August 2, 2002

(Preliminary Announcement)

THEME

Earth Processes and Metallogenesis, with emphasis on Africa

DATES

20 to 27 July, 2002: Pre-Congress Excursions (in various countries of southern Africa, possibly as far afield as Madagascar and Ghana)

29 July to 2 August, 2002: Congress in Windhoek, Namibia
3 to 10 August, 2002: Post-Congress Excursions (as above)

CONGRESS VENUE

Safari Hotel, Windhoek, Namibia

HOSTS

Geological Society of Namibia
Geological Society of South Africa
Geological Society of Zambia

CONTACT ADDRESS

The Secretary
IAGOD/GEOCONGRESS 2002
P.O. Box 44283
LINDEN 2104
SOUTH AFRICA

Professional Congress Organizers are to be appointed soon and a formal announcement is expected by April 2000. A Congress web page will be online in due course with updated information at <http://www.wits.ac.za/gssa> and other links.



FORTHCOMING EVENTS

★ marks a new entry

2000

June 29-July 8

GALICIA 2000, BASEMENT TECTONICS 15: VARISCAN-APPALACHIAN DYNAMICS - THE BUILDING OF THE UPPER PALEOZOIC BASEMENT, A Coruña, Spain - Contact address: Florentino Díaz García, Departamento de Geología, Universidad de Oviedo, Arias de Velasco s/n, 33005 Oviedo, Spain; phone: +34 98 510 31 14; fax: +34 98 510 31 03; e-mail: bt15@asturias.geol.uniovi.es; web-site: <http://www.geol.uniovi.es/bt15.html>

July 3-7

IGCP - 373 Field Conference in Finland, Rapakivi Granites and Associated Mineralization in Finland, Finland - Contact address: Prof. Ilmari Haapala / Sari Lukari, Department of Geology, University of Helsinki, Snellmaninkatu 3, SF-00170 Helsinki, Finland; fax: +358 9 191 234 66; e-mail: ilmari.haapala@utu.fi or sari_lukkari@hotmail.com; web-site: <http://www.helsinki.fi/~elliott/igcp-373/>

July 4-6

GEOCONGRESS 2000, Stellenbosch, South Africa - Contact address: The Secretariat, Geocongress 2000, Department of Geology, University of Stellenbosch, Private Bag X1, Matieland 7602, South Africa; phone: +27 021 808 3219; fax: +27 021 808 31 29; e-mail: geologie@maties.sun.ac.za; web-site: <http://www.sun.ac.za/geology/>

July 12-14

GEOFLUIDS III, Barcelona, Spain - Contact address: Dr. K. Bitzer, Consejo Superior de Investigaciones Científicas, Instituto de Ciencias de la Tierra "Jaume Almera", Solé i Sabarís s/n. 08028 Barcelona, Spain; phone: +34 93 409 54 10; fax: +34 93 411 00 12; e-mail: geofluids@natura.geo.ub.es; web-site: <http://www.ub.es/geocuimi/geofluids.htm>

July 13-21

ICAM2000, 6TH INTERNATIONAL CONGRESS ON APPLIED MINERALOGY, Göttingen, Germany - Contact address: ICAM 2000 office, BGR/NLFB, P.O. Box 510153, D-30631, Germany; phone: +49 511 643 2298; fax: +49 511 643 3685; e-mail: icam2000@bgr.de; web-site: <http://www.bgr.de/icam2000>

July 18-30

IGCP-373 FIELD CONFERENCE IN THE URALS, "The Eroded Urals Paleozoic Ocean to Continent Transition Zone: Granitoids and Related Ore Deposits", Ekaterinburg, Russia - Contact address: Dr. Vladimir Smirnov, Institute of Geology and Geochemistry, UB RAS; Pochtovy per., 7, Ekaterinburg, 620151, Russia; phone: +7 3432 511785; fax: +7 3432 515252; e-mail: smirnov@igg.uran.ru

July 19-22

10TH PERUVIAN GEOLOGICAL CONGRESS, Lima, Peru - Contact address: Alberto Manrique; Soc. Geol. del Perú, Arnaldo Marquez 2277, Lima 11, Peru; fax +51 1 2612362; e-mail: e-mail: sgp@inictel.gob.pe

August 6-17

SGA-COSPONSORED

31TH INTERNATIONAL GEOLOGICAL CONGRESS, Rio de Janeiro, Brazil - Contact address: Secretaria Executive do 31º Congresso Geológico Internacional, Av. Pasteur, 404 - Anexo 31 IGC - Urca - Rio de Janeiro - RJ - CEP 22.290-240; phone: +55 21 295 5847; fax: +55 21 295 8094; e-mail: 31igc@31igc.org - web site: <http://www.31igc.org>

August 19-22

GEOLOGY AND EXPLOITATION OF TIN DEPOSITS IN EUROPE FOR THE THIRD MILLENNIUM, Sokolov, Czech Republic - Contact address: Pavel Beran, Okresni muzeum a knihovna Sokolov, Zamecka ul. 1, 356 00 Sokolov, Czech Republic; fax: +420-16822217; e-mail: okmsokolov@mbox.vol.cz

★ September 3-8

GOLDSCHMIDT 2000, Oxford, UK - Contact address: web-site: <http://www.camppublic.co.uk/science/conference/Gold2000/front.html>

★ September 3-8

The Tin of the Year 2000, Sokolov, Czech Republic - Contact address: Pavel Beran, Kreismuseum und Bibliothek Sokolov, Zámecká ulice N. 1,

356 00 Sokolov, Czech Republic; phone: +42 0168 62 39 30; fax: +42 0168 60 22 17; e-mail: konference@omks.cz

September 13-16

5TH INTERNATIONAL MINING HISTORY CONGRESS, Milos, Greece - Contact address: Heliotopos Ltd., Terpsihoris 38, GR-175 62 P. Faliro (Athens) Greece; phone: +30 1 988 40 04; fax: +30 1 988 30 59; e-mail: helio@hol.gr; web-site: <http://www.heliotopos.net.conf.imhc>

September 25-29

ISECA-2000, INTERNATIONAL EARTH SCIENCES COLLOQUIUM ON THE AEGEAN REGION, Izmir, Turkey - Contact address: Dr. Ismet Özgenc, Organizing Secretary, ISECA-2000, Department of Geological Engineering, Dokuz Eylül University, P.O. Box 37 (E.Ü.Ptt), 35100 Bornova, Izmir, Turkey; phone: +90 232 388 29 19; fax: +90 232 388 78 65; e-mail: iesc2000@izmir.eng.deu.edu.tr; web-site: <http://www.deu.edu.tr>

★ October 2-6

GEOLOGICAL SURVEY AND MINERAL RESOURCES OF RUSSIA ON THE THRESHOLD OF THE XXI CENTURY, St. Petersburg, Russia - Contact address: Executive Secretary V. Shatov, VSEGEI, 74 Sredny Prospect, 199106, St. Petersburg, Russia; phone: +7 812 328 9106; fax: +7 812 321 3023; e-mail: 300org@vsegei.ru or vsegei@mail.wplus.net; web-site: <http://www.vsegei.ru>

WISH TO ADVERTISE FORTHCOMING EVENTS?

Send your announcements to:

SGA News, Département de Minéralogie, Université de Genève, Rue des Maraîchers 13, CH-1211 Genève 4, SWITZERLAND
fax: +41 22 320 57 32
e-mail: SGANEWS@sc2a.unige.ch

★ October 11-13

XVII SYMPOSIUM ON THE GEOLOGY OF LATIN AMERICA, Stuttgart, Germany - Contact address: Prof. Dr. Hartmut Seyfried, Institut für Geologie, Universität Stuttgart, Herdweg 51, D 70174 Stuttgart, Germany; e-mail: LAK.Redaktion@geologie.uni-stuttgart.de; web-site: <http://www.geologie.uni-stuttgart.de/LAK>

★ November 6-10

«CONTRASTING STYLES OF INTRUSION-ASSOCIATED HYDROTHERMAL SYSTEMS» fieldtrip, Reno, Nevada - Contact address: Prof. John H. Dilles, Geoscience Department, Wilkinson Hall 104, Oregon State University, Corvallis, OR 97331; phone: +1 541 737 1245; fax: +1 541 737 1200; e-mail: dillesj@geo.orst.edu

★ November 10-11

GOLD IN 2000, Lake Tahoe, Nevada - Contact address: Steffen Hagemann, Centre for Strategic Mineral Deposits, The University of Western Australia, Nedlands, WA 6907, Australia; phone: +61 8 9380 1517; fax: +61 8 9380 1178; e-mail: shageman@geol.uwa.edu.au OR Phil Brown, Department of Geology and Geophysics, 1215 W. Dayton, University of Wisconsin, Madison, WI 53706; phone: +1 608 262 5954; fax: +1 608 262 0693; e-mail: pbrown@geology.wisc.edu

★ November 14-18

XIV BOLIVIAN GEOLOGICAL CONGRESS, La Paz, Bolivia - Contact address: Colegio de Geólogos de Bolivia, Calle Federico Zuazo, No. 1673, La Paz - Bolivia Casilla: 15099; phone: +591 2 352731; fax: +591 2 352731; e-mail: sohrab@mail.megalink.com; web-site: <http://www.megalink.com/congreso14>

November 17-19

VOLCANIC ENVIRONMENTS & MASSIVE SULFIDE DEPOSITS INTERNATIONAL CONFERENCE AND FIELD MEETING, Hobart, Tasmania, Australia - Pre- and post-conference field trips to VHMS deposits of Mt Read Volcanics. Contact address: Secretary, Centre for Ore Deposit Research, University of Tasmania; GPO Box 252-79, Hobart, Tasmania, Australia 7001; phone: +61 3 6226 2472; fax: +61 3 6226 7662; web-site: <http://www.geol.utas.edu.au/codes>

★ December 7-8

METALLOGENY 2000: REVIEW AND PERSPECTIVES, Symposium in honour of Bernard Poty, Nancy, France - Contact address: Colloque Métallogénie 2000 Nancy UMR G2R, BP 239, F - 54506 Vandœuvre-lès-Nancy, France; phone: +33 3 83 91 23 28; fax: +33 03 83 91 38 01; e-mail: metalogenie2000@g2r.uhp-nancy.fr; web-site: <http://www.crp.cnr-nancy.fr/ILG/>

2001**★ January 12-16**

INTERNATIONAL CONFERENCE ON THE GEOLOGY OF OMAN, Sultan Qaboos University, Muscat, Sultanate of Oman - Contact address: web-site: <http://www.geoconfoman.unibe.ch>

★ May 17-19

New Developments in Metalliferous Hydrothermal Systems, Townsville, Queensland, Australia - Contact address: Lucy Chapman, Manager, Economic Geology Research Unit, School of Earth Sciences, James Cook University, Townsville, Queensland, 4811, Australia; phone: +61 7 4781 4726, fax: +61 7 4725 1501, e-mail: lucy.chapman@jcu.edu.au, web-site: <http://www.es.jcu.edu.au/soseg/>

★ May 28-31

6TH INTERNATIONAL SYMPOSIUM ON MINING IN THE ARCTIC, "Mining and Man", Nuuk, Greenland - Contact address: 6th

International Symposium on Mining in the Arctic, Bureau of Minerals and Petroleum, Government of Greenland, P.O. Box 930, DK-3900 Nuuk, Greenland; phone: +299 34 68 00; fax: +299 32 43 02; e-mail: bmp@gh.gl; website: www.bmp.gl

★ August 19-24

GORDON CONFERENCE on "Inorganic Geochemistry" particularly related to mineral deposits, Proctor Academy, New Hampshire - Contact address: e-mail: Gordongeochem@aol.com

August 26-29**SGA-COSPONSORED**

6TH SGA BIENNIAL MEETING, Krakow, Poland - Contact address: Secretary - Dr. Adam Piestrzyński, University of Mining and Metallurgy, av. Mickiewicza 30; 30-059 Kraków, Poland; phone: +48-12-6172433; fax: +48-12-6332936; e-mail: piestrz@geol.agh.edu.pl; web-site: <http://galaxy.uci.agh.edu.pl/~sga/>

★ September 24-28**SGA-COSPONSORED**

IV International Archaeological Symposium, Perth, Australia - Contact address: Dr Susan Ho, Secretary 4th International Archaeological Symposium, PO Box 80, Bullcreek WA 6149, Australia; phone: +61 8 9332 7350 (international), 08 9332 7350 (Australia); fax: +61 8 9310 6694 (international), 08 9310 6694 (Australia); e-mail: susanho@geol.uwa.edu.au; web-site: <http://redback.geol.uwa.edu.au/~ias/>

2002**★ July 29-August 2**

11TH IAGOD QUADRENNIAL SYMPOSIUM/GEOCONGRESS 2002, Windhoek, Namibia - Contact address: The Secretary IAGOD/GEOCONGRESS 2002, P.O. Box 44283, LINDEN 2104, SOUTH AFRICA; web-site: <http://www.wits.ac.za/gssa>

Gold in 2000

The Society of Economic Geologists sponsors a Short Course before the 2000 Geological Society of America Meeting in Reno, Nevada
Lake Tahoe: Friday-Saturday, November 10-11, 2000

Orogenic gold - Archean:	Geology constraints	Hagemann (U. Western Australia) + Cassidy (AGSO-Canberra);
	Exploration constraints	Hodgson (Barrick)
Orogenic gold - Proterozoic		Partington (Ross Mining) + Williams (James Cook U)
Orogenic gold - Phanerozoic		Bierlein (Monash U.) + Crowe (U. Georgia)
Orogenic gold - The hydrothermal fluids		Ridley (Macquarie U.) + Diamond (U. Leoben)
Carlin gold		Hofstra (USGS-Denver) + Cline (U. Nevada)
Epithermal gold:	Geology constraints	Simmons (Geothermal Institute) + Cooke (U. Tasmania)
	Exploration constraints	Hedenquist (Consultant) + Arribas (Placer)
Alkalic related gold		Jensen + Barton (U. Arizona)
Gold porphyry (oxidized) / Gold skarns		Sillitoe (Consultant); Meinert (Wash. State U.)
Intrusion related (reduced) gold		Thompson (Teck) + Newberry (U. Alaska)
VHMS-SEDEX gold		Huston (AGSO-Canberra); Emsbo (USGS-Denver)
Witwatersrand gold		Phillips + Law (Great Central Mines)
Tectonic-structural models for gold		Kerrich (U. Saskatoon) + Groves (U. Western Australia) + Goldfarb (USGS-Denver) + Garwin (U. Western Australia)
Gold exploration technology-science interface		McCuaig (Consultant) + Hronsky (WMC)

The authors will provide both academic and industry points of view for most deposit styles in hour-long presentations, discussions and review papers. Space and time for Poster Presentations (to be published as a companion Extended Abstract Volume) have been arranged during both days of the Short Course. Students and young researchers are specifically encouraged to present their work as posters and are invited to submit, via email, extended abstracts up to 4 pages (including figures and references) by September 1, 2000. Submit inquiries and abstracts to Louis Bucci (lbucci@geol.uwa.edu.au).

Costs (including 2 nights lodging, meals and coffee breaks, reception, and Short Course volume with CD-ROM) are still being finalized but will be approximately \$350 for Professionals and \$200 for students. Registration will be done through the SEG - visit their website at: <http://www.mines.utah.edu/~wmgg/SEG.html>

The Short Course volume - Gold in 2000 - will be part of the "Reviews in Economic Geology" series.

Dr. Philip Brown
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PROPOSAL OF AMENDMENTS OF STATUTES OF THE SGA CONSTITUTION

Letter of the SGA President to the SGA Members

The latest version of the Constitution of SGA is from 1983 and the statutes have now been unchanged nearly 20 years. The activities of the Society have changed during the years, and the Council launched 1998 the process to update and improve the Statutes. Professor Eugen F. Stumpf (Leoben, Austria) kindly reviewed the old Articles and suggested some changes which have been discussed in two Council meetings in 1999 and finally accepted at the Kraków Council Meeting, in March 2000. Amendments to the Statutes are here submitted to the members by letter ballot and the majority of the votes received within seventy-five days after the date of mailing shall pass or defeat the amendments (Article XII).

We therefore kindly ask all the Members to read the proposal below, indicate their opinion in the attached ballot, and return it to the Secretary General by **September 15, 2000**. For comparison, the whole 1983 Constitution is available at the SGA home page <http://www.min.tu-clausthal.de/www/sga/sga.html>.

Yours sincerely

Heikki Papunen (President of SGA)

Amendments of the Statutes

IMPORTANT: For all the following pages the old version of the SGA Constitution will be on the left side (*italic*) whereas the new version will be on the right side.

OLD VERSION	NEW VERSION
<i>Article I - II unchanged</i>	Article I - II unchanged
<i>Article III - Purpose</i>	Article III - Purpose
<p>(1) <i>The Society is an international scientific organisation. Its purpose is to support and promote the application of scientific knowledge to the study and the development of mineral resources, the profession of geology in science and industry, to cultivate the personal contacts of its members in a mutually beneficial professional manner and to protect and improve professional and ethical standards amongst its members.</i></p> <p>(2) <i>The goals of the society are to be promoted and supported, in accordance with its financial possibilities, through:</i></p> <ul style="list-style-type: none"> - <i>personal contact of its members in order to exchange knowledge and experience,</i> - <i>co-operation with another scientific societies,</i> - <i>the organisation of scientific conventions,</i> - <i>the publication of scientific periodical(s) and volume(s)</i> 	<p>(1) The Society is an international scientific organisation. The objectives for which the Society is constituted are:</p> <ul style="list-style-type: none"> - to advance the application of scientific knowledge to the study and the development of mineral resources and their environment, - to promote the profession of geology in science and industry, - to cultivate personal contacts in mutually beneficial manner and - to protect and improve professional and ethical standards amongst its members. <p>(2) The objectives of the society are to be advanced through:</p> <ul style="list-style-type: none"> - the organisation of scientific meetings, - the publication of the Society Journal, "Mineralium Deposita" and such other periodicals and monographs as Council may consider expedient, - personal contact amongst members to facilitate the exchange of knowledge and experience, - co-operation with other scientific societies.
<i>Article IV - Activity area - Seat - Competent Court</i>	Article IV - Seat - Competent Court
<p><i>This Society, although founded in Europe, concerns all countries in the world.</i></p> <p><i>The seat of the Society is in Geneva (Switzerland). Its registered office shall be designated in the by-laws</i></p> <p><i>Herewith the members of the Society accept that all legal cases between them and the Society shall fall exclusively under the competency of the law courts of Geneva, with the right to appeal to the Federal Court of Switzerland, the laws of Switzerland finding sole application. In case of dispute, the English version of the Statutes shall apply.</i></p>	<p>SGA is an international Society and operates world-wide. The seat of the Society is in Geneva, Switzerland. Its registered office shall be designated in the by-laws.</p> <p>All legal cases between members and the Society shall be dealt with exclusively by the law courts of Geneva, with the right of appeal to the Federal Court of Switzerland, the laws of Switzerland being applicable throughout.</p> <p>In case of dispute, the English version of the Statutes shall apply.</p>

Article V - Membership**Section 1 - Classes of Members**

(1) The following are eligible to membership in the Society:

- Individuals who can contribute to the realisation of the goals of the Society through knowledge, experience or by occupational position.
- Corporate bodies, who are active in the areas of mineral deposit research and raw materials.

(2) The members of the Society are

1. Honorary members,
2. Regular members,
3. Junior members,
4. Senior members
5. Corporate members,
6. Supporting members

Section 2 - Honorary members

The General Assembly, upon recommendation of the Council, and with an agreement of three quarters of the members present, can award honorary membership to individuals who have outstandingly served the Society, or to persons who have exceptional work in the fields of geoscience, especially in respect to ore deposit research.

Honorary members have all of the rights and privileges of the regular members. They are exempt from membership fees.

Section 3 - Regular members

(3.1) Requirements

Individuals who have eight years experience at work principally devoted to mineral resources and who are recommended by three regular members of the Society may apply for membership.

Graduates in geology, engineering or the equivalent shall be credited for full time postgraduate study in geology for not more than three years towards the required eight year of experience. Recognised degree shall be those requiring at least four or five years of studies (Diplom - M.Sc. - Dr. 3° cycle)

Persons who have not fulfilled the above mentioned conditions, yet have accomplished outstanding work in the field of mineral resources research, may also apply.

(3.2) Acceptance Formalities ... unchanged

(3.3) Members of the SEG ... unchanged

Section 4 - Junior members

Every natural person who has acquired or will soon acquire a university or equivalent degree in the field of mineral resources may be accepted as a junior member for a maximum period of eight years from the date of the receiving of his degree certificate. The acceptance formalities proceed according to Art. V, 3.2.

Junior membership of the Society automatically terminates at the end of the calendar year in which the eight-years-period comes to an end.

The junior members are entitled to attend all the meetings of the Society, but have no voting rights and cannot sponsor candidates for membership. Junior members are not required to pay Society initiation fees and their reduced membership dues are determined by the Council.

Junior members will be informed by the Secretary of their ensuing junior membership termination during the month of October of the preceding year. This will be accompanied by an invitation to apply for regular membership, which can proceed according to Art.V, 3.2

Article V - Membership**Section 1 - Classes of Members**

(1) The following are eligible for membership of the Society:

- Individuals who can contribute to the realisation of the objectives of the Society through knowledge, experience or by virtue of their professional position.
- Corporate bodies, who are active in the research on, exploration for, and exploitation of raw materials. This includes environmental aspects.

(2) The Society shall consist of

1. Honorary members,
2. Regular members,
3. Student members,
4. Senior members
5. Corporate members,
6. Supporting members

Section 2 - Honorary members

The General Assembly, upon recommendation of the Council, and with agreement of three quarters of the members present, can award Honorary Membership to individuals who have rendered outstanding service to the Society, or to persons of distinction in the minerals industry and in the geological sciences.

Honorary members have all the rights and privileges of regular members. They are exempt from membership fees.

Section 3 - Regular members

(3.1) Requirements

Candidates for election as Members shall have passed through a period of training and professional experience in the minerals industry or in geology. For the purpose of this requirement, postgraduate study or research shall not be regarded.

Regular members of the Society shall normally hold the first degree (BS, B.Sc. or equivalent) in a geological or engineering subject or equivalent. Candidates who do not fulfil the above conditions, yet have accomplished outstanding work in the minerals industry or in mineral resources and related environmental research, may also be considered.

(3.2) Acceptance Formalities ... unchanged

(3.3) Members of the SEG ... unchanged

Section 4 - Student members

Candidates for Student Membership are working toward a university or equivalent degree (B.Sc. (Hons.), M.Sc. Ph.D., etc.) in the field of mineral resources. Student Members shall provide prove of student status each year with their membership renewal.

Student Members are entitled to attend all Society meetings. They have no voting rights and cannot sponsor candidates for membership.

Section 5 - Senior members

Regular members being a member of the Society for 40 (forty) years or members having reached the age of 70 (seventy) may become senior members upon their request.

Senior members retain the rights of the regular members. They pay reduced dues which are determined by the Council.

Section 6 ... unchangedSection 7 ... unchangedArticle VI ... unchangedArticle VII - The General Assembly

The general Assembly shall be the supreme authority of the Society.

Section 1 - Meetings

The General assembly shall meet annually at the Call of the President, the call to be dispatched by the Secretary by ordinary mail to all members at least seventy five days before the date of the meeting. In this notice the following points shall be mentioned:

- date and place of the meeting,
- a business agenda as prepared by the Council stating the items to be discussed and on which a decision may be asked.

The minutes of the General Assembly are prepared by the Secretary.

In the years in which the International Geological Congress will meet, the General Assembly will meet at the place and during the period of this Congress.

In view of the geographical dispersion of the members of the Society, the Council may replace the annual meeting of the General Assembly by a written consultation of all members. In this case, the rules of call and of decision are the same as for an ordinary General Assembly meeting.

The President shall call an extraordinary meeting of the General Assembly at the written request of one-quarter of the voting members.

Section 2 - Quorum ... unchangedSection 3 - Agenda of the General Assembly ... unchangedArticle VIII - The Council of the SocietySection 1 - The Administrative Officers

The Administrative Officers are:

- The President
- The Vice-President
- The Secretary
- The Treasurer
- The Chief Editor(s)

They shall be elected by a written ballot for terms of two years. The President and the Vice-President are not immediately eligible for re-election. In the case of disagreement between a member and an Administrative Officer of the Society over Society activities, the Council can be called upon by the member to adjudicate.

The Administrative Officers, and the President-Elect or Past-President, the Vice-President elect or Past-Vice-President, form the Executive Committee.

1.1 - The President. The President shall preside all the meetings of the Society and of the Council. The Society is morally represented by the President. He may delegate

Section 5 - Senior members

Regular members who have reached the age of 65 (sixty-five), and persons, who have retired from their active service, may apply for senior membership.

Senior members retain all rights and privileges of regular members. They pay reduced fees which are determined by the Council from time to time.

Section 6 ... unchangedSection 7 ... unchangedArticle VI ... unchangedArticle VII - The General Assembly

The General Assembly shall be the supreme authority of the Society.

Section 1 - Meetings

The General Assembly shall meet in the years of the SGA Biennial Meetings. The invitations are issued by the President, and shall be announced in the Society Newsletter seventy-five days before the date of the meeting.

This notice shall include the following points:

- date, time and place of the meeting,
- an Agenda prepared by the Council stating the items to be discussed and on which a decision may need to be made.

The minutes of the General Assembly are prepared by the Executive Secretary

The President shall call an extraordinary meeting of the General Assembly at the written request of one-quarter of the voting members.

Section 2 - Quorum ... unchangedSection 3 - Agenda of the General Assembly ... unchangedArticle VIII - The Council of the SocietySection 1 - The Administrative Officers

The Administrative Officers are:

- The President
- The Vice-President
- The Executive Secretary
- The Treasurer
- The Chief Editor(s)
- The Promotion Manager

They shall be elected by a written ballot for terms of two years. The President and the Vice-President are not immediately eligible for re-election. In the case of disagreement between a member and an Administrative Officer of the Society over Society activities, the Council can be called upon by the member to adjudicate.

The Administrative Officers form the Executive Committee.

1.1 - The President. The President shall preside at all meetings of the Society and of the Council. The Society is morally represented by the President. He/she may delegate

members to represent the Society

1.2. - The Vice-President. The Vice-President shall assume the functions of President in case of vacancy for any cause in that office and shall assume the duties as Acting-President in case of absence or disability of the President.

A vacancy or disability occurring in the office of Vice President shall be filled without delay from among the Council-members by simple majority vote of the Council. The Vice-President thus designated shall hold office until the next election.

1.3 - The Secretary. The Secretary shall perform the duties which are usually attached to the office of the Secretary, but he also shall assume the duties of the President in case both the President and the Vice-President are absent.

1.4 — 1.5 ... unchanged

1.6 ... new

Section 2 ... unchanged

Delete Section 3 of the old version:

Section 4 ... is Section 3 in the new version

Section 5 ... deleted (see section 6.1)

Section 6 - Composition, meetings and duties of the Council

6.1 - Composition. The Council shall consist of the President, the Vice-President, the President-Elect or Past-President, the Vice-President Elect or Past-Vice-President, the Secretary, the Treasurer, the Chief Editor(s) and at least seven elected Councillors.

The Regional Vice-Presidents of the Society, the President and the Secretary of the Society of Economic Geologists shall be voting members of the Council except on matters requiring a three-quarter majority vote or unanimity.

A vacancy or disability occurring in an office of Councillor shall be filled by majority vote of the Council.

6.2 - Meetings and duties. The Council shall meet annually at the Call of the President. Additional meetings may be called when and where thought necessary, by the President or at least three Councillors. The Executive Secretary shall make minutes of these meetings.

Six voting members of the Council present in person shall constitute a quorum at any meeting of the Council. Council members may vote by proxy at any meeting of the Council. In case of a tie vote, the vote of the President shall be decisive.

The Council shall manage the affairs and the funds of the Society. It shall judge the qualifications of all applicants for membership and shall elect new members.

It shall designate the date and place of the General Assemblies, and of any other meetings of the Society.

... the rest of the Section no changes

members to represent the Society. By virtue of this office, he/she shall be a member of all Committees appointed by Council.

1.2. - The Vice-President. The Vice-President shall fill the place of the President when he/she shall be absent from the meetings of the Council, or from General Meetings, or when he/she shall be unable to give attention to current business of the Society.

The Vice-President shall in the first year of service appoint such ad hoc committees as may be required or authorized by the Statutes and By-Laws and that will be active during his/her Presidency. At his/her option he/she may serve on or be Chairman of such committees.

In case the Vice-President is unable to continue in office, the vacancy shall be filled without delay from among the Council members by simple majority vote of the Council. The Vice-President thus designated shall hold office until the next election.

1.3 - The Executive Secretary. The Executive Secretary shall perform the duties which are usually attached to the office of the Secretary, but he/she also shall assume the duties of the President in case both the President and the Vice-President are absent. He/she may appoint a person of his/her choice to aid him/her in his/her task after obtaining approval of Council for this appointment.

1.4 — 1.5 ... unchanged

1.6 - The Promotion Manager. The Promotion Manager coordinates promotional activities, including fund raising and membership campaigns; he/she interacts with Regional Vice-Presidents to promote the Society.

Section 2 ... unchanged

Delete Section 3 of the old version

Section 3 - as Section 4 in the old version

Section 5 ... deleted (see section 6.1)

Section 6 - Composition, meetings and duties of the Council

6.1 - Composition. The Council shall consist of the President, the Vice-President, the Executive Secretary, the Treasurer, the Chief Editor(s), the Promotion Manager and at least seven elected Councillors.

The Regional Vice-Presidents of the Society, the President and the Executive Director of the Society of Economic Geologists, the Membership Secretary and Secretary General of IAGOD shall be voting members of the Council except on matters requiring a three-quarter majority vote or unanimity.

A vacancy or disability occurring in an office of Councillor shall be filled by majority vote of the Council.

6.2 - Meetings and duties. The Council shall meet annually at the call of the President. Additional meetings may be called when and where thought necessary, by the President or at least three Councillors. The Executive Secretary shall prepare minutes of these meetings.

Six voting members of Council present in person shall constitute a quorum at any meeting of the Council. Council members may vote by proxy at any meeting of the Council. In case of a tie vote, the vote of the President shall be decisive.

Council shall manage the affairs and the funds of the Society. It shall judge the qualifications of all applicants for membership and shall elect new members.

Council shall determine the date and place of the General Assemblies, and of any other meetings of the Society. Council also determines if and when meetings of other societies shall be co-sponsored by SGA.

... the rest of the Section no changes

<p><u>Section 6.3 - Biennial Meetings ... new</u></p>	<p><u>Section 6.3 - Biennial Meetings</u> Organising Committees of SGA Biennial Meetings shall be approved by Council. They devolve their duties under supervision of, and in close co-operation with, the SGA Council. This applies in particular to all matters relating to conference fees, general finances, maintenance of scientific standards of oral communications and posters, and to the programme in general. The President, the Executive Secretary and the Treasurer are ex officio members of the Organising Committee.</p>
<p>Article IX - The Executive Committee</p> <p><i>The Administrative Body (Vorstand) of the Society in the sense of the article 69 of the Schweizerische Zivilgesetzbuch is the „Executive Committee“.</i></p> <p><i>The Executive Committee shall carry on the affairs of the Society separately, or in conjunction with the Council. This Committee shall consist of the President, who shall be Chairman, the Vice-President, the Secretary, the Treasurer, the Chief Editor(s), the President-Elect or the Past-President and the Vice-President-Elect or the Past-Vice-President.</i></p> <p><i>The Executive Committee is responsible to the General Assembly of the Society, as long as such decisions are not reserved to the Council or to the General Assembly.</i></p>	<p>Article IX - The Executive Committee</p> <p>The Administrative Body (Vorstand) of the Society in the sense of the article 69 of the Schweizerische Zivilgesetzbuch is the „Executive Committee“.</p> <p>The Executive Committee shall carry on the affairs of the Society separately, or in conjunction with the Council. This Committee shall consist of the President, who shall be Chairman, the Vice-President, the Executive Secretary, the Treasurer, the Chief Editor(s) and the Promotion Manager.</p> <p>The Executive Committee is responsible to the General Assembly of the Society, as long as such decisions are not reserved to the Council or to the General Assembly.</p>
<p>Article X ... unchanged</p>	<p>Article X ... unchanged</p>
<p>Article XI - Publications</p> <p><i>The official journal of the Society is Mineralium Deposita which is a property of Springer-Verlag, Berlin - Heidelberg - New York, according to the agreement of January 18th, 1975.</i></p> <p><i>In addition to the current journal the Society will publish occasionally «Special Publication(s)». The title of this series is a property of the Society.</i></p> <p><i>The Council takes all decisions about its publications</i></p>	<p>Article XI - Publications</p> <p>The official journal of the Society is Mineralium Deposita which is a property of Springer-Verlag, Berlin - Heidelberg - New York, according to the agreement of January 18th, 1975.</p> <p>In addition to the current journal the Society will publish «SGA News» and occasionally «Special Publication(s)». The titles of these series are properties of the Society.</p> <p>The Council takes all decisions about its publications.</p>
<p>Articles XII - XIII ... unchanged</p>	<p>Articles XII - XIII ... unchanged</p>
<p>Article XIV - Finances</p> <p><u>Section 1 - Resources</u> <i>The financial resources of the Society shall be formed by the membership dues, the entrance fees and the voluntary contributions of the members, all gifts and subsidies of any nature received, possible surpluses resulting from Society conventions and publications, subscription fees, and special receipts, as well as revenue from its funds.</i></p>	<p>Article XIV - Finances</p> <p><u>Section 1 - Resources</u> The financial resources of the Society shall comprise membership fees, the voluntary contributions by the members, all gifts, subsidies and donations of any nature received, possible surpluses resulting from Society conventions and publications, subscription fees as well as revenue from interest and investments.</p>
<p><u>Section 2 - Social debts ... unchanged</u></p>	<p><u>Section 2 - Social debts ... unchanged</u></p>

SOCIETY FOR GEOLOGY APPLIED TO MINERAL DEPOSITS

SGA Membership Application Form

I would like to become a member of the Society for Geology Applied to Mineral Deposits (SGA) and to receive my personal copy of *Mineralium Deposita*.

Join the SGA now...

Surname/Corporation
 First name
 Title
 Mailing address

 Phone Fax
 E-mail
 Date of birth..... Nationality.....
 Degrees obtained from Universities or Colleges

 Present position

 Membership in other scientific societies

Are you a member of the Society of Economic Geologists? (If yes, no sponsors are necessary) ☐ Yes ☐ No

- ☐ DM 127 (65EUR, ~67US\$) Regular
☐ DM 88 (45EUR) Junior (up to 4 y after Ms. Sc., Ph.D.)*
☐ DM 49 (25EUR) Student (up to Ph. D., max. 4 years)*
☐ DM 88 (45EUR) Senior (after retirement)*
☐ DM 391 (200EUR) Corporate (includes 3 copies of *Mineralium Deposita*)

*Certificate required

If the application is approved by the SGA Council, I authorize the "Society for Geology Applied to Mineral Deposits" to charge the above amount (please tick)

to my ☐ Visa ☐ Mastercard/Eurocard ☐ American Express
 Card No.
 Expiry date

Signature
 Place and date
 (If you do not intend to pay by credit card, an invoice will be issued after acceptance of



The Society of Geology Applied to Mineral Deposits was established in 1965 by an international group of economic geologists. Its Journal *Mineralium Deposita* is now recognized as a premier international mineral deposits journal.

GOALS

- The promotion of science of mineral deposit geology
- Personal contact of its members in order to exchange knowledge and experience
- Organization of scientific meetings, field trips, workshops. For these events, SGA members have reduced registration fees and in certain cases may apply for travel grants.
- Cooperation with other scientific societies, especially with SEG and IAGOD
- Publication of *Mineralium Deposita* and scientific volumes

MEMBERSHIP

Membership in SGA is open to all persons interested in economic geology, mineral resources, industrial minerals and environmental aspects related to mineral deposits. SGA is an international society with global membership in over 50 countries. Members have reduced registration fees in SGA-sponsored events and in certain cases are eligible for travel grants. Subsidies for publication of color plates in *Mineralium Deposita* also may be applied. Current membership fees are listed on the left-side column of this page.

MINERALIUM DEPOSITA

Editors: Richard Goldfarb (Denver, CO, USA) and Bernd Lehmann (Clausthal, Germany).

Mineralium Deposita publishes papers on all aspects of economic geology.



**SOCIETY FOR GEOLOGY APPLIED TO
MINERAL DEPOSITS
(SGA)**



**in collaboration with
SOCIETY OF ECONOMIC GEOLOGISTS
(SEG)**

***in cooperation with*
UNIVERSITY OF MINING AND METALLURGY
STATE GEOLOGICAL INSTITUTE
KGHM POLISH COPPER Ltd.**

**August 26-29, 2001
Kraków (Poland)**

Sixth Biennial SGA Meeting

First Circular

The Society for Geology Applied to Mineral Deposits (SGA), established in 1965, is an international association of economic geologists. The Society promotes science of mineral deposit geology, edits the journal *Mineralium Deposita*, and organizes biennial scientific meetings, field trips and workshops. The first of the SGA Biennial Meetings was organized in Nancy, 1991, followed by Granada, Prague, Turku and London.

The 6th Biennial SGA Meeting will be held in Kraków, Poland, August 26-29, 2001, under the general theme "Mineral Deposits at the Beginning of the 21st Century". Kraków is a historical capital of Poland and a scientific and cultural centre with convenient international travel connections. It has long traditions in economic geology due to Silesian Pb-Zn, Kupferschiefer, salt deposits, etc. SGA and the local organizers kindly invite you to participate in the Meeting and to submit papers for oral and poster presentations.

Organization

The 6th Biennial SGA Meeting will be co-sponsored by the University of Mining and Metallurgy, Kraków (UMM), Polish Geological Institute (PGI), KGHM Polish Copper SA, the Society of Economic Geologists (SEG) and the International Association on the Genesis of Ore Deposits (IAGOD).

The Organizing Committee

Adam Piestrzyński, (UMM, Chairman)

Maciej Podemski, (PGI, Vice Chairman)

Cezary Bachowski (KGHM Polish Copper SA), Marian Banas (UMM), Peter Herzig (Treasurer SGA), Henryk Kucha (UMM), David Leach (SGA), Janusz Magiera (UMM, Exhibitions), Maciej Manecki (UMM, Poster sessions), Wojciech Mayer (UMM, Registration), Marek Michalik, Jagiellonian University, Kraków (JU, Excursion organizer), Heikki Papunen (President SGA), Jan Pasava (Secretary General SGA), Tadeusz Peryt (PGI), Jadwiga Pieczonka (UMM, Registration), Sławomir Porzucek (UMM, Internet connections), Maria Sass-Gustkiewicz (UMM, Treasurer of the Meeting), Zbigniew Sawłowicz (JU, Excursion organizer), Chris Stanley (SGA).

PROPOSED TOPICS OF THE SESSIONS

Ore-forming processes, Organic matter in ore formation and environmental issues, Geodynamic setting of major basin-hosted Pb-Zn provinces, Formation and evolution of stratiform copper deposits, Global comparison of the VMS deposits, Ore-bearing systems associated with acid magmas, Mineral deposits associated with mafic and ultramafic rocks, Precious metal deposits, Metamorphism and ore deposits, Controls on metallogenesis in foreland basins, Industrial mineral deposits, Environmental aspects of mineral deposits, Evaluation of mineral deposits.

Suggestions are welcome for other topics of the sessions, titles of workshops and short courses, and conveners of the sessions. The topics will be specified in the Second Circular.

LANGUAGE

The official language of the Meeting will be English. Simultaneous translations will not be available.

FIELD TRIPS

Several pre- and post-meeting field trips will be organized. The participants will have an opportunity to visit various mineral deposits in Poland, Ukraine, Slovakia, Hungary and Czech Republic. Field-trips to Kyrgystan and Greenland,

ACCOMMODATION

Accommodation will be available in a broad price range, from student housing to first class hotels.

SOCIAL EVENTS

All participants are invited to an Ice-breaking Party. A Conference Dinner in the 1000 years old Salt mine of Wieliczka, sight-seeing tours in historical Kraków and a visit to the Wieliczka salt mine will be offered under separate charges.



REGISTRATION FEES

Non-SGA Members
SGA and SEG Members
Students
Accompanying person

☐ 150 EUR
☐ 100 EUR
☐ 50 EUR
☐ 50 EUR

Registration fees includes: conference materials, ice-breaking party and coffee-breaks. For accompanying persons: ice-breaking party and Kraków sight-seeing. The Conference Dinner will be paid by separate payment.

IMPORTANT DATES

April 30, 2000	Pre-registration
July 31, 2000	Second Circular
January 31, 2001	Submission of extended abstracts
February 28, 2001	Acceptance of abstracts
April 30, 2001	Return of camera ready abstracts, payment of registration fees and field trips

SECOND CIRCULAR

The second circular will be distributed in July 2000 and will include more detailed information, instructions concerning abstract submission and a registration form. Please make sure that you will receive the Second Circular by returning the attached pre-registration form as soon as possible.

CORRESPONDENCE

6th Biennial SGA Meeting, Dr. Wojciech Mayer, University of Mining and Metallurgy, Faculty of Geology, Geophysics & Environmental Protection, av. Mickiewicza 30; 30-059 Kraków, Poland; phone: +48-12-6172385; fax: +48-12-6332936
e-mail: wmayer@geol.agh.edu.pl
web-site: <http://galaxy.uci.agh.edu.pl/~sga/>

PRE-REGISTRATION FORM

6th Biennial SGA Meeting, Kraków, August 26-29, 2001 (please type or use BLOCK letters)

Send to the Correspondence address reported above

First name

Last name

Title Male ☐ Female ☐

Institution

Street

City

Zip Code..... Country

Phone

Fax

E-mail

I am (please tick):

SGA Member ☐ Yes ☐ No

SEG Member ☐ Yes ☐ No

Student ☐ Yes ☐ No

I intend to submit an abstract (please tick): ☐ Yes ☐ No

preliminary title

I expect to attend workshop(s) and short cours(es) ☐ Yes ☐ No

I am willing to run a workshop/short course ☐ Yes ☐ No

on the theme

I intend to attend a field trip ☐ Yes ☐ No

I will be accompanied by: person(s)

Date Signature