IAGOD NEWSLETTER 2002

THE INTERNATIONAL ASSOCIATION ON THE GENESIS OF ORE DEPOSITS

Geological Survey of Norway
Trondheim

Published on the occasion of the 11th Quadrennial IAGOD Symposium and GEOCONGRESS 2002, 22nd-26th July Windhoek, Namibia
International Association on the Genesis of Ore Deposits (IAGOD)

IAGOD is an international association of both individual and national members. The object of the IAGOD is to promote international cooperation in the study of the genesis of ore deposits and to further the growth of knowledge in this field. The IAGOD was established during the IGC in New Delhi, India, 1964. The Association continues to expand its international activities and membership.

IAGOD membership privileges include:

- Participation in an international association focusing on ore deposit studies.
- Preference on IAGOD symposia, workshops, and meetings.
- Annual IAGOD Newsletter.
- Work in the IAGOD commissions and working groups.
- Reduced registration fees at IAGOD symposia.

Membership of the Association is open to applicants interested in genetic problems of ores if (1) he or she has graduated in earth sciences, chemistry, or physics at a University, Technical University, or Mining Academy, (2) if he or she has at least three years of post-graduate experience in earth sciences, (3) if membership is recommended by two individual members of IAGOD, and (4) if he or she has published valuable results important for the study of the genesis of ore deposits. Applicants who are members of SEG or SGA need not submit a Sponsorship Form. The annual membership dues for individual IAGOD members are US $10 plus bank charges.

Inquiries concerning membership (including national groups and corporate membership) should be addressed to: Dr. R. Seltmann, IAGOD Membership Secretary, Natural History Museum, Dept. Mineralogy, Cromwell Road, London SW7 5BD, UK, Phone: +44 207 942 5042, Fax: +44 207 942 5537, e-mail: rs@nhm.ac.uk

New IAGOD website (available Summer 2002):

http://www.geology.cz/host/iagod.htm

The IAGOD Newsletter is an informative bulletin of IAGOD, is published by the IAGOD Secretary General at the SecGeological Survey of Norway annually and sent free to all IAGOD members. The IAGOD Newsletter contains the reports of the officers of IAGOD commissions and working groups. The IAGOD Newsletter is open to all IAGOD members. As well as the various columns in the newsletter in which IAGOD activities are reviewed, the newsletter can also contain previously unpublished results may be published here in the form of short abstracts (maximum 1 page of A4 format). All IAGOD members are also encouraged to send to contributions for the IAGOD newsletter 2003 to the editor. The deadline for the next newsletter is 15th April 2003.

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Printing: Zubalík Printing Office
793 26 Vrbno pod Pradědem, Czech Republic

IMPORTANT NOTICE!

Please inform the IAGOD Secretary General and/or Membership Secretary of any errors or changes in addresses / phone numbers / e-mail addresses

THANK YOU!
Editorial

At the time of writing this editorial, I, like many of the readers of this newsletter, are looking very much forward to the forthcoming 11th Quadrennial IAGOD Symposium and Geocongress in Windhoek, Namibia, 22nd-26th July. We in IAGOD Council extend a warm thank you to the local organising committee and their host organisations (Geological Society of Namibia, Geological Survey of Namibia, Council for geoscience and the Geological Society of South Africa) for much hard work over the past months to make this conference an excellent one.


Several national groups (NG) and working groups (WG) were involved in organization of scientific conferences and field workshops during 2001. WGTT participated and co-sponsored the IGCP-373 field conference "Paleozoic geodynamics and intrusion-related Au deposits in the Altai (Kyrgyzstan)" in Bishkek and the Tien Shan, 18th-25th August 2001. The Russian Far East Group were involved with the International Scientific Conference 'Problems of Development of Georesources of the Russian Far East and Countries of APR'. May 30th-June 2nd, 2001 in Vladivostok.

IAGOD publications during 2001 included the volume 'Paleozoic geodynamics and gold deposits in the Kyrgyz Tien Shan' in the IAGOD Guidebook series and the monograph 'Ore-Bearing Granites of Russia and Adjacent Countries', edited by A.A. Kremenetsky et al. IAGOD's map series has been expanded to include: 'Gold mineralization map of the Southern Urals, Scale 1:1,000,000' (Shatov et al.), 'Mineral deposits map of Central Asia, Scale 1:1,500,000' (Seltmann et al.). The Russian Far East IAGOD Group published the book 'Ore Deposits of Continental Margins, Issue 2'. That 2001 has been a good year for IAGOD and its various commissions and working groups can be seen by the long list of achievements reported in this newsletter.

Like any scientific or cultural organisation, IAGOD depends upon its members for support. We are always looking for new members and are especially keen that young scientists join IAGOD. I call on all members to convince their professional friends and colleagues to join IAGOD. We are also looking for volunteers for future IAGOD Councils, WGs and Commissions. Candidates should preferably have a stable position or tenure, at least guaranteed salary from project funds, support of their host institution to work within IAGOD, communication skills and good English. Two letters of recommendation from VIPs (IAGOD members or IAGOD councillors) should be supplied.

Last but not least, my sincere thanks to all the many individuals who have contributed items for this newsletter. With best wishes for a pleasant and prosperous Summer.

Nigel Cook, Secretary General IAGOD
Trondheim, Norway, 8th June 2002

IAGOD Membership

1) National members (12 countries):
China, Czech Republic, Kazakhstan, Kyrgyzstan, Mongolia, Russia, Slovakia, Spain, Tajikistan, Georgia, Uzbekistan, (Ukraine).

2) Honorary Life Members: 9
(Ridge), Kautsky, Stemprok, Tischendorf, Kutina, Foerster, Vanecek, Sclar, A. Heyl, R. Boyle.

3) Corporate (Institutional) Members (11):
Anglo American plc UK (C. Carlon), Aur Resources (James Gill), Barrick (C. J. Hodgson), Billiton (Gordon Koll), Blackwell publishing (Judy Cornish), Cominco (Cameron Allen), Cyprus Amcax (David H. Watkins), Falconbridge (P.W.A. Severin), INCO (R. Horn), Ivanhoe Mines (Douglas Kirwin), Randgold (D. M. Bristow).
NEW IAGOD MEMBERS

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Dr. Azim Djangiev, Precious Metal Committee of Tajikistan, Apt. 24, Mushfiki str. 103 Dushanbe-25, Tajikistan Tel. 992-372-248164, Fax. 992-372-248164

Blackwell Publishing Ltd. (corporate member) 108 Cowley Road, Oxford OX4 1JF United Kingdom. Tel. +44-1865-382361, Fax. +44-1865-381361

The following new members were included in the previous newsletter, without full addresses. These are:

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Dr. Yves Haebelin, Department de Mineralogie, Universite de Geneve, Rue des Maraichers 13 CH-1211 Geneve 4 Switzerland. Tel. +41-22-702-66-35, Fax. +41-22-320-57-32, e-mail: yves.haebelin@terre.unige.ch

In memoriam

IAGOD regrets to learn of the recent death of IAGOD Member Bruce A. Bouley 1947-2001 (USA)
MISSING IAGOD MEMBERS

The last newsletter and 'Windhoek' circulars addressed to the following were returned as undeliverable. Please kindly IAGOD know about changes of address.

Dr. Cameron Allen
Dr. Boris Bartalský
Dr. Ross Burns
Dr. José M. Cabello
Prof. Cai Xinping
José Casas Ruiz
V.B. Churnizin
Prof. Batysh Dosanova
Dr. García Pascual Inaki
Dr J.J. Hemley
Dr Chet Idziszek
Dr Jiri Janatka
Dr L Jurak
Dr Peter C Lightfoot
Dr Jesus Martinez Frias
Dr German Pavlovic Nachtigal
Dr. Noyoung Park
Mr Duane Poliquin
Dr Richard Charles Scrivener
Dr. Andrey B. Volkov
Ross Withers
Prof Guangrong Xu
Prof. Zhang Baolin
Dr Zhijian Zhang

PAYMENT FORM

IAGOD Membership Fees

The annual dues are $10 US per year. Please consider paying for four to five years at a time. That will save a considerable amount of money in bank fees. Also, please kindly return this invoice with your payment.

CREDIT CARD: All charges will be in US Dollars.

I authorize the "International Association on the Genesis of Ore Deposits” (IAGOD) to charge the
TOTAL AMOUNT DUE in US dollars _________ for ________ years membership to my (check)

VISA MASTERCARD

Card No.: Expiry Date:

Name as appears on credit card:

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Receipts: If you require a receipt, please check here [ ] and enclose with your payment an additional 1 (one) US dollar to cover the additional processing/mailing costs. If you choose to pay by credit card, your normal statement will be sufficient.

Please kindly remember to include your name and address with all correspondence

Please send your payment to:

IAGOD Chief Treasurer
Dr. Richard I. Grauch, United States Geological Survey, Denver Federal Center
Mailstop 973, PO Box 25046 Colorado 80225 USA

Tel. +1 303 236 5551, Fax. +1 303 236 3200, e-mail: rgrauch@usgs.gov
Report of the IAGOD Working Group on Tin and Tungsten Deposits (WGTT)

Main results in 2001:

WGTT continued its close cooperation with the IGCP-373 Project (Correlation, Anatomy and magmatic-hydrothermal evolution of ore-bearing felsic igneous systems).

1) The WGTT cooperated in the preparation of the GSC World Minerals Database project coordinated by D. Sinclair from the Geological Survey of Canada.

2) It participated along with the project IGCP 373 at the preparation of the session "Mineralizing systems associated with felsic magmas" of the SGA-SEG Meeting / Krakow / Poland, 26th-29th August 2001. The section included 37 contributions presented at the meeting and published in the "Mineral Deposits at the Beginning of the 21st Century" A.A.Balkema publishers. IAGOD/WGTT members were among active participants.

3) The WGTT started to prepare the programme of a session devoted to mineralization associated with felsic magmatism together with the IGCP project 373 at the 11th Quadrennial IAGIOD Symposium and Geocongress 2002 in July 22-26, 2002, Windhoek in Namibia.

4) The WGTT officers suggested the topic "New developments in tin, tungsten and other rare/metal deposits" to be included in the programme of the IGC-2004 in Florence, Italy to represent the themes of the WGTT.

Future activities:

During 2002, IGCP-373 "Ore-bearing granites", closely collaborating with WGTT, will terminate its activities. We will organize/convene a final session in Windhoek, jointly WGTT and IGCP-473. WGTT specialists will contribute papers and will help with reviews.

A special monograph in the Spec Pub Geol Soc London series is under preparation and WGTT members contribute and help review the papers to be published in 2003.

WGTT will play an active role in preparing the Interim IAGOD conference in Vladivostok in September 2004.

WGTT will contribute to represent IAGOD at the IGC-2004 and WGTT officers will co-sponsor/convene one session (Stemprok, Sinclair, Seltmann).

Contributed by M. Stemprok (Chairman of the WGTT) and R. Seltmann (Vice-Chairman)

Report of CTOD Working Group No.4: Tectono-Magmatic Activation and Metallogenesis (DIWA) for 2001

1. Chief activity of the group

On October 29-31, 2001, a conference “The 21st Century Internatoned Symposium on Activated Tectonics and Metallogeny” was held in Changsha City, China. This International symposium is authorized by the Ministry of Science and Technology of China and the Chinese Academy of Science, and jointly sponsored by Changsha Institute of Geotectonics and Central South University. More than 100 scientists and government officials were invited to present, reviewing and looking forward to the latest and future development of the activated tectonics and metallogenic theory. Scholars from America, Japan, Australia, Canada, Mongolia, New Zealand and Poland made lectures on this symposium. From different aspects, they studied geologic phenomena related to the activated tectonics and metallogenesis all over the world respectively. The main scientific topics for discussion are as follows:
(1) Retrospect of development and application for the activated tectonics and metallogeny in the twentieth century;
(2) Opportunities and challenges for the activated tectonics and metallogeny in the 21\textsuperscript{st} century, which is subdivided into three aspects: Innovations and advances; Geodynamics and the activated tectonics; and Computer technology application for crustobody geotectonics.

In the meantime, we also warmly congratulated Mr. Chen Guoda’s ninetieth birthday. Prof. Chen Guoda has devoted himself to geologic research for nearly seventy years. On the other hand, the twentieth Diwa Award had been issued, altogether five scholars won the award.

This symposium had achieved fruitful achievements, which mainly embodies the following monograph and papers.

2. Monograph and papers

Prof. Chen Guoda has published his new monograph: \textit{DIWA THEORY-Outline on Activated Tectonics and Metallogenic Theoretic System} (English edition), which is published by Central South University Press. And Prof. Chen Guoda also published his paper:


The Symposium received about 100 papers and abstracts, the scientific committee of this symposium published a symposium (in Chinese) and two special issues of \textit{Geotectonica et Metallogenia} (Chinese and English editions), in which different papers were carried. From Vol.25, No.3 on, \textit{Geotectonica et Metallogenia} will successively publish the conference papers, partial papers also will be carried in China Journal of Geology (former Scientia Geologica Sinica) (Chinese edition) Vol.37, No.2 and No.3. The titles of these symposium contributions are too many to be listed one by one here.

There are three member’s address changes:
Secretary Dr. Yi Jianbin of this group (the former secretary) emigrated to New Zealand, similarly, Dr. Chen Zilong of this group also emigrated to Australia last year, their addresses are not yet available.

\textit{Contributed by Zeng Qiaosong (Secretary) and Prof. Chen Guoda (Chairman)}

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**SOCIETY OF ECONOMIC GEOLOGISTS (SEG)**

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For details of the society, membership, publications and bulletin board, visit the SEG Web Page at [http://segweb.org](http://segweb.org)
## I.A.G.O.D. PUBLICATIONS 2002 ORDER & PAYMENT FORM

Attention: For IAGOD members 10.-USD discount per ordered copy!!!
(tick boxes, multiply prices x number of copies for each book, add prices for TOTAL)

### IAGOD Guidebook Series

<table>
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<tr>
<th>Year</th>
<th>Title</th>
<th>Price (before discount)</th>
<th>Discount</th>
<th>Price (after discount)</th>
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<tr>
<td>1998</td>
<td>Anatomy and Textures of Ore-Bearing Granitoids of Sikhote Alin (Primorye Region, Russia) and Related Mineralization</td>
<td>USD 40.-</td>
<td>USD 10.-</td>
<td>USD 30.-</td>
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<td>1999</td>
<td>Au, Ag and Cu Deposits of Uzbekistan (Excursion Guidebook)</td>
<td>USD 40.-</td>
<td>USD 10.-</td>
<td>USD 30.-</td>
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<tr>
<td>2000</td>
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<td>USD 40.-</td>
<td>USD 10.-</td>
<td>USD 30.-</td>
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<td>Paleozoic geodynamics and gold deposits in the Kyrgyz Tien Shan</td>
<td>USD 50.-</td>
<td>USD 10.-</td>
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### IAGOD Monographs

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<td>Seltmann et al. (1994)</td>
<td>Metallogeny of Collisional Orogens</td>
<td>USD 50.-</td>
<td>USD 10.-</td>
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<td>Shatov et al. (1996)</td>
<td>Granite-Related Ore Deposits of Central Kazakhstan and Adjacent Areas</td>
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### IAGOD Maps (on CD CorelDraw9 or as printed version)

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<td>Shatov et al.</td>
<td>Gold mineralization map of the Southern Urals, Scale 1 : 1 000 000</td>
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<tr>
<td>Seltmann et al.</td>
<td>Mineral deposits map of Central Asia, Scale 1 : 1 500 000</td>
<td>USD 110.-</td>
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**TOTAL** amount to be paid in US dollars (Price includes shipping and packaging): ............ USD

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I authorize the International Association on the Genesis of Ore Deposits to charge the price of ........US dollars for the above ordered book copy/copies.

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To receive the book, copies of this completed form (and in case of payment by cheque, also a copy of the bank draft) must be sent to: Dr. R. Seltmann, Natural History Museum, Dept. Mineralogy, Cromwell Road, London SW7 5BD, UK, Phone: +44 207 942 5042, Fax: +44 207 942 5557, <rs@nhm.ac.uk>

Name: 
Signature: 
Date: 
Delivery address: ...
Report from Kazakhstan National IAGOD Group

Conferences 2001:


Participation in other International Scientific Conferences 2001:


Monographs


There are described Gercinian or e belts of Great Alta i: Rudnoaltai – copper-led-zinc with gold and silver; Kalba-Narim – tin-tungsten with rare metals; West Kalba – gold ore; Zharma-Saur – multmetal. Different composition of these ore-bearing belts is explained by geochemical mantle-crust specialization. There are known more than 2500 manifestations including 150 metalliferous deposits and more than 200 various non-metalliferous ones. Within the ore belts formational-metallogenic zones, ore-bearing regions, ore knots, main ore fields were identified. Stages of metallogeny development, primary and secondary ore-bearing structures, ore material composition, different geological and genetic models and some ecological problems are characterized. Conclusions related to mineral resources potential development were proven.

The book is intended for scientists, geologists, state and private investors.

Selected publications 2000-2001:


Planned activities for 2002-2003

1. New publications (articles, monographs, methodical recommendations) in the sphere of the genesis of ore deposits (national and international magazines and journals).

2. Participation in International Scientific Meetings, Conferences and Field Excursions (Kazakhstan, Russia, Kyrgyzstan, China and others).

3. Cooperation with other IAGOD National Groups (Kyrgyz, Uzbekistan, Russia et al.) on the basis of International project "Geology, Geodynamics and Metallogeny of Central Eurasia".

Current list of the members of the Kazakhstan IAGOD National Group (May 2002)

Chairman: Prof. Mikhail Rafailovich (Scientific Institute of Natural Resources YUGGEO, Bogenbay Batyr Str., 168, 480012 Almaty, Republic of Kazakhstan; tel: (3272) 692240; fax (3272) 621284; e-mail: rafail@astel.kz


Contributed by Mikhail Rafailovich, chairman, e-mail: rafail@astel.kz

The Paragenesis Commission (PaC) for 2002

PaC have planned three sessions for the 12th Quadrennial IAGOD meeting in Windhoek:

1) "Mineralogy, Paragenesis, and Origin of Carbonatite-Related Ore Deposits" (MX2). This is one of seven sessions listed under the theme: "Magmatism and Mineralisation in Extensional Environments (MX), which is one of seven themes for the meeting.
2) "Paragenesis and Paragenetic Sequence of Ores and Minerals in Mineral Deposits" (MXC3). This is one of five sessions listed under the theme "Topics Applicable to Mineral Deposits in both Extensional and Compressional Environments" (MXC) and

3) "Cathodoluminescence of Gems and Other Minerals" (01). This is one of four sessions listed under "Open sessions" (O).

PaC members are typically involved in many other meetings at international (e.g. IMA, IGC, ICAM), and in national meetings.

Contributed by Dick Hagni

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The Russian Far East IAGOD Group being a part of the National IAGOD Group of Russian Federation consists of 18 members.

The main events in activity of Far East Russian IAGOD group in 2001 were:

1. **2004 Interim IAGOD Conference:**

Preparation of the 2004 Interim IAGOD Conference on Metallogeny of the Pacific Northwest: Tectonics, Magmatism, and Metallogeny of Active Continental Margins Venue: Vladivostok, Russia Dates: 11-19 September, 2004. The first circular for the conference is now completed (see elsewhere in this newsletter). During the remaining time before the conference, the group will prepare and publish the book of extended abstracts, six guide booklets for the planned field tours, the second circular of the conference, and other organizational materials.

2. **Participation in conferences etc.:**

Organization and participation in scientific conferences and symposiums and participation in International projects.

The First International Scientific Conference “ Problems of Development of Georesources of the Russian Far East and Countries of APR”. May 30-June 2, 2001, Vladivostok. IAGOD member V.G. Chomich was the scientific chief of the seminar “Mining geology”.


Symposium "Geological and mineragenetic correlation in the contiguous region of Russia, China, Mongolia”, October, 16-20, Chita, Russia.” IAGOD member V.G. Chomich was in Organizing Committee of this symposium.

Second International Symposium “Siberian Gold’ 2001: Geology, Geochemistry, Technologies, Economics. December 4-6, 2001, Krasnoyarsk, Russia. IAGOD member V.V. Ivanov was its participation.

3. **Participation in international projects:**

The Chairman of our IAGOD group A.I. Khanchuk as one from leaders took part in International project “Mineral Resources, Metallogenesic and Tectonics of NE Asia” in which collaborating agencies from U.S., Russian, Mongolian, China, Korea, Japan and other countries.

Many members of the group are involved into the projects of the Russian Fundamental Studies Foundation studying the ore deposits genesis.

Dr. Alexander I. Khanchuk (Corresponding Member of Russian Academy of Sciences) is the leader of Project “Geological-genetic models of polygenic and polychromic tin and tungsten deposits formation in the Sikhote-Alin accretionary-folded system” (Russia, the Far East).

Dr. Valery G. Gonevchuk is the leader of Project “Study and modeling of tin mineralization evolution in the history of Primorye”(Russia, the Far East).

4. Book publication:

During the last two years the Russian Far East IAGOD Group published two books of selected papers: Ore Deposits of Continental Margins (in Russian with English abstract), issue 1, 2000, issue 2, 2002. The next book of selected papers will be prepared for publication in 2003 (in English). This book will be published by September 2004, by the beginning of the 2004 Interim IAGOD Conference.

The book Ore Deposits of Continental Margins. Issue 2, Vladivostok, Dalnauka, 2001, 420 pp. (in Russian with abstracts in English) published by members of the Far Eastern Branch of Russian Academy of Sciences Far East Geological Inst., Russian Far East IAGOD group. This book is a compilation of articles contributed by the Russian Far East Group of IAGOD. New mineralogical and geochemical data on the conditions of ore formation from deposits of the Russian Far East have been considered, specifically the relationship between mineralization and magmatism. On the basis of original research results some problematic aspects of ore formation related to the continental margin are discussed. The impact of changing paleo-geodynamic conditions on the formation of different types of mineralization and regional metallogenic zoning is taken into consideration. The book is of interest to geologists studying endogenic metallogeny. Executive Editor: Alexander Khanchuk; Responsible secretary: G.A. Gonevchuk; Editorial Council: L.N. Khetchikov, V.G. Gonevchuk, I.I. Fatjanov.

Contents:

Martynov Yu.A., Kovalenko S.V., Rasskazov S.V., Saranina E.V. Geochemistry and problems of metallogeny of the Cenozoic post subduction calc-alkaline volcanic rocks of the southwest Primorye

Trunilina V.A., Orlov U.S., Babushkina S.A. Latite ore bearing magmatic systems of the Polousny range (northeast Verkhoyano-Kolyma Mesozoic geological structures)

Roev S.P. The fluid regime of forming and ore-bearing magmatite of the Derbeke-Nelgekhe belt (northeast Yakutia)

Nedashkovsky P.G. Origin of Proterozoic rare-metal deposits from Ulkan depression (Khabarovsky region)

Sterkhov K.G. Ore content of alkaline granites of Tomtukan massif (South-East Aldan shield)

Nevolin P.I., Utkin V.P., Kovalenko S.V., Kutub-Zade T.K., Mitrokhin A.N. Geodynamics of structural formation of the Uspensky granitoid massif and placement control of dikes and mineral occurrences


Mitrofanov N.P. Geodynamics of pre-ore stage of tin deposit formation in Northwestern sector of Pacific ore belt

Gonevchuk G.A., Gonevchuk V.G. Genetic and metal-bearing features of magmatic rocks of the Komsomolsk ore district implied by biotite composition

Korostelev P.G., Gonevchuk B.G., Semenyak B.I., Suchkov V.I., Kokorin A.M., Gonevchuk G.A., Gorelikova N.V., Kokorina D.K. Solnechnoe deposit (Komsomolsk district, Khabarovsk territory) as the sample object of the cassiterite-silicate formation

Kokorin A.M., Gonevchuk V.G., Kokorina D.K., Orekhov A.A. The Vysokogorskoe tin deposit: peculiar genesis and mineralization

Kokorin A.M., Kokorina D.K. Matter composition and formation conditions of the deposits of the Pio Oak tin-ore district (Vietnam)

Zvereva V.P. The morphology and mineralogy of hypergenesis zone of nonferrous deposits of Dalnegorsk ore district (Primorye)

Ivanov V.S., Shnay G.K. Petrochemical features of Mesozoic intrusive magmatites and mineral types
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(Lebedinsky, Karanakhskyi, Ryabinovyi) of gold mineralization on Central Aldan

Zimin S.S., Oktyabrsksy R.A., Molchanov V.P., Tishkin B.M., Gvozdev V.I., Baturin S.G., Sapin V.I. Prospects of ultrabasites of Ust’-Depskaya ophiolite zone (Middle Primurie) for chromites and native metals

Molchanov V.P., Zimin S.S., Gvozdev V.I., Malakhov V.V., Oktyabrsksy R.A. Role of apoultrabasites in formation of platinoid-gold placers of Gar’sky node (Middle Primurie)


Vysotskiy S.V., Shcheka G.G., Lehmann B. First occurrence of platinum group minerals (PGM) in the gold-sapphire bearing placer accumulation of the Kedrovka River (Bolshaya Ussurka River basin, Primorye)

Kazachenko V.T. A significance of fluid pressure in formation of Dukat gold–silver deposit

Khomich V.G. Pokrovskoe gold deposit (geological structure and ore distribution)

Fatyanov I.I., Khomich V.G. Structural-matter elements of vein-metasomatic zones of Mnogovershinnoe gold-silver deposit (Lower Priamurie) as indicators of hydrothermal ore-forming system evolution

Rostovskiy F.I. Milogradovskoye gold-silver deposit (South Sikhote-Alin)

Chashchin A.A., Khetchikov L.N., Ivanov V.V., Rasskazov S.V., Tsurikova L.S., Konovalova N.P. Fluid regime of magmatic rocks and Au-Ag mineralization forming in Viluchin volcano-tectonic structure (Southern Kamchatka)

Gvozdev V.I. Geological structure, mineralogy, and genesis of Agylkinsky copper-tungsten deposit in Yakutia

Selected publications:


Contributed by Secretary: of the Russian Far East IAGOD Group G.A. Gonevchuk, Far East Geological Institute of FEB of Russian Academy of Sciences, 159, Prospect 100-letyta, Vladivostok, 690022, e-mail: gonevchuk@hotmail.com or fegi@online.marine.su
Report of the Commission on Ore Deposits in Mafic and Ultramafic Rocks (CODMUR) for 2001

Activities have been carried out within the framework of IGCP 427. Within the framework of this project, meetings have been held as follows:

1998 - Quebec City associated with GAC-MAC
1998 - Rustenburg 8th Internation Pt conference.
1999 - Sudbury associated with GAC-MAC
1999 - Rouyn-Noranda komatiites and Cape Smith Ni-deposits
2000 - Brazil - Internation Congress
2001 - Field trip to Skaergaard, Meeting at SEG-SAG Krakow, Special session of Goldsmithdt.
2002 - 9th Platinum conference to be held in Billings Montana.

(Excerpts from the annual report of IGCP 427 for 2001 are given below – ed.)

Report on excursion to the Skaergaard igneous complex in West Greenland – September 2001:

A group of IGCP project 427 researchers interested in igneous and/or platinum geology hired an ice strengthened ship to travel from Iceland to Greenland where the ship formed accommodation while we made excursions to the shore to examine the classic Skaergaard layered intrusion famous for:-

(i) its extreme iron enrichment in the magma,
(ii) its closed system fractionation,
(iii) its relatively newly discovered Pd and gold mineralisation.

The weather was good and we undertook 6 days fieldwork looking at every aspect of the layered intrusion.

We examined the layered structure of the complex and the platinum-group element mineralisation. This mineralisation is in an unusual position compared to more conventional platinum enriched complexes such as the Bushveld in which mineralisation occurs with chromitites and sulphides. In Skaergaard the mineralisation is much higher in the layered sequence than is usual in layered complexes and is associated with plagioclase-rich layers devoid of sulphides. There are also a few, recently described complexes in which platinum-group element mineralisation has been discovered with magnetite layers. In the Skaergaard the magnetites are not the units that have been described as having the mineralisation despite their abundance in the sequence. This unusual occurrence in the Skaergaard intrusion raises interesting questions concerning the processes concentrating the platinum-group elements in different layered intrusions and these can only be truly appreciated by standing on the mineralisation site at Skaergaard and observing the host lithologies first hand. Thirteen days were spent on the boat including travel time and field days lost due to bad weather; most of the scientists gave talks. The interaction between scientists with igneous and mineralisation expertise and between industry representatives and academics was very productive in generating ideas.

The next IGCP 427 meeting will be the 9th International Platinum Symposium to be held in Billings, Montana, USA in 21st - 25th July 2002. There will be field excursions associated with this to Stillwater and Duluth and Lac des Isles. The web site address for this meeting is www.platinumsymposium.org

Contributed by Hazel Prichard (CODMUR Secretary; sg1hm@cardiff.ac.uk)

Other IGCP 427 Activities in 2001:

20-24 May 2001, 11th Annual Goldschmidt Conference, Roanoke, Virginia, USA. IGCP Project 427 co-sponsored a Symposium on the Mafic Magma-Ore Deposit Link with the Geochemical Society. The symposium was organized by J. Brenan, J. Mungall, and A. Boudreau and included 18 talks and 3 posters by 20 presenters on various aspects of the geology, geochemistry, experimental petrology, and genesis of magmatic Ni-Cu-(PGE)
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and PGE-(Cu)-(Ni) deposits associated with mafic magmas. It was attended by ~50 participants from at least 8 countries (Australia, Canada, Russia, USA, China, Germany, South Africa and England).

26-29 August 2001, 6th Biennial SGA-SEG Meeting (Mineral Deposits at the Beginning of the 21st Century), Kraków, Poland. IGCP Project 427 jointly-sponsored Session 6.1 on the Genesis of PGE Deposits (Organizer: O.A.R. Thalhammer) with SGA and SEG. The session was dedicated to Professor E.F. Stumpfl in appreciation for his 4 decades of research in PGE deposits and included 10 talks and 2 posters on various aspects of the geology, geochemistry, experimental petrology, and genesis of magmatic PGE, Ni Cu(PGE), and Cr deposits. It was attended by ~100 participants from 17 countries (Australia, Austria, Canada, Denmark, Finland, Germany, Greece, Italy, Poland, Romania, Russia, Slovakia, South Africa, Czech Republic, Ukraine, UK, and USA).

17-21 September 2001, XXI Spanish Mineralogical Society Meeting, Malaga, Spain. The Spanish Working Group of IGCP Project 427 sponsored a special session (Organizer: F. Gervilla) that included ~12 presentations and was attended by ~25 participants (at any one time) from Spain, Portugal, Canada, Denmark, and the UK. The meeting was preceded by a 2-day field excursion to the Ronda Massif (Leader: F. Gervilla) that was attended by ~20 participants from the same countries.

01-10 September 2001, 4th International Archean Symposium, Perth, Western Australia. IGCP Project 427 participants contributed to several theme sessions, including Theme 5: Mineralization, Theme 2: Magmatic Processes, and the David I. Groves Symposium. There were 205 papers (94 oral, 111 posters), the Symposium was attended by almost 500 participants from 20 countries, and a 7-day pre-conference excursion to Komatiites of the Norseman-Wiluna Greenstone Belt (Leader: S.J. Barnes) was attended by 12 participants (6 additional registrants were unable to attend due to the 11 September events and the collapse of Ansett Airlines, the domestic carrier). We are especially grateful to Dr. Susan Ho of the 4IAS Organizing Committee for her logistical assistance.

01-13 September 2001, Field Excursion to the Skaergaard Complex and Platinova Reefs, Kangerdługssuaq, East Greenland. This was a stand-alone IGCP Project 427 field conference that was organized and led by J.C. Andersen, T.N. Irvine, and C.K. Brooks, and jointly sponsored with the Camborne School of Mines and SGA. The excursion departed from and ended in Keflavik, Iceland, and was attended by 32 participants from 11 countries (Canada, Denmark, France, Germany, Italy, Scotland, South Africa, Spain, UK, USA). A IGCP Project 427 Business Meeting was held during the voyage. A conference report (Andersen, J.C.Ø., 2001) has been submitted to Episodes.

01-05 October 2001, Annual European Short Course in Metallogeny, Brest, France. This short course was supported by the French CNRS, GEODE (the European Science Foundation metallogeny network), and the Universities and City of Brest. The IGCP Project 427 component was organized by N.T. Arndt. It was delivered in two parts, the second of which included sessions on Ni, Cr and Pt deposits in komatiites, the Bushveld complex, and ophiolites that were relevant to this project. The twelve lecturers came from France, Germany, Portugal, Canada, and USA, and the 45 students came from 12 countries.

26-27 October 2001, Workshop on PGE Exploration, Sudbury, Ontario, Canada. This workshop was jointly-sponsored with the Laurentian University SEG Student Chapter (Organizers: G. Dessureault, M. Huminicki, and M. Lévesque) and the Mineral Exploration Research Centre. It included a 2-day symposium with 15 talks and a 2-hour open (and very lively) discussion on various aspects of the geology, geochemistry, experimental petrology, and genesis of magmatic Ni-Cu-(PGE) and PGE-(Cu)-(Ni) deposits, two 1-day field trips to the East Bull Lake and River Valley PGE prospects near Sudbury, and surface/underground tours of several Ni-Cu-PGE deposits in the Sudbury Basin. It was attended by ~110 participants from 3 provinces (Ontario, Québec, British Colombia) and 3 countries (Canada, United States, Brazil).

The goals of the project, all past and planned activities, and all publications resulting from the project are posted on the IGCP Project 427 Web Site http://www.laurentian.ca/www/geology/IGCP/IGCP.htm

(edited from IGCP Annual report 2001, contributed by Sarah-Jane Barnes)

Report of the Tajik National IAGOD group for 2001

Output and plans:

Animation of group and finding of finance sources was the red line of the past year for us. Some members have left the group but new (and younger) members became involved. Attempts to search for
sponsors for mining or scientific program in Pamir or Northern Tajikistan were done but the decrepit apparatus of old geological departments cannot work reliably under modern market conditions. Investors spending some time in the country were going away again.

INTAS’s projects for Metallogeny of Central Asia (Dr. Reimar Seltmann) or Geodynamics of Tibet – Eastern Pamir Region (Prof. Lothar Ratschbacher) with our participation were stopped: they received decent evaluations, but could not succeed because of the very low pass mark of about 3%. So, under stress to find money (Academy and State Tajikgeologia branches are poor now) and to involve new members, we have undertaken the following:

1. Presentations in the Seminar of Industry Government Committee (June 2001), in “Contribution of Tajikistan Scientists in the Industry” – Dushanbe: IGC Industry Institute, 2001 (extended abstracts are published):
   - V.E.Minaev. Unconventional gold occurrences as additional resource and method of it preliminary evaluation.
3. Anniversary Conference of Tajikistan Academy (50 years) & Geology Institute (60 years of foundation), presentations and publication in proceedings “Geology and Minerals of the Republic of Tajikistan” – Dushanbe, 2001:

V.E. Minaev was a participant of field conference in Bishkek (Kyrgyzstan), due to the help of Dr. Reimar Seltmann – thanks to him and to IAGOD Council for support. We wait for better times in Tajikistan to prepare and to pilot such a programme through our region.

Future plans are concentrated around our attempts to search finance for field works with appropriate laboratory analytic prolongation which will rise us to modern level. Objects and ideas are present. Basement from former USSR geology remains. Politic situation becomes better. To join with world geological community is our main task.

Current members of the IAGOD National Group of Tajik Republic (9 members)
Chairman: Dr. Vladislav E. Minaev (P.O. Box 198, Dushanbe 734025, Tajikistan; tel: +992 372 243658; fax: +992 372 510037; e-mail: geol@ac.tajik.net, minaev@cada.tajik.net)

Explanations: FHA: Focus Humanitarian Assistance, Dushanbe-Khorog; GI TAS: Geological Institute of the Tajikistan Academy of Sciences, Dushanbe; KSU: Khorog State University, Khorog; MIMB: Ministry of Industry, Mining Branch, Dushanbe; TGG: Tajikglavgeologia, Dushanbe.

New members:
2. Hudobaksheva, Sharifa, year of birth 1970, Senior lecturer in Khorog University, temporary is Ph.D. student in Geological Institute AS RT; home: apt. 34, Sherozi st. 35, Dushanbe, Tajikistan; tel. + 992 372 360223; e-mail: pish@ac.tajik.net Languages: Tajik, Uzbek, German.

3. Bahtdavlatov, Rahmonbek D., year of birth 1959, Focus Humanitarian Assistance (instead of Tajikglavgeologia before); home: Apt. 29, Klagenfurt st. 1, Dushanbe, Tajikistan; tel. + 992 372 326332; e-mail: ikar@ac.tajik.net. Languages: Tajik, Russian, English.

I.N. Matveeva and A.R. Fayziev have now moved to the Geological Institute, where they hold the posts of Senior Investigator and Institute Director respectively.

Contributed by Vladislav Minaev, Chairman of TajIAGOD Group, PO Box 198, Dushanbe 734025, Tajikistan (geol@ac.tajik.net) and Irina Matveeva (petro@ac.tajik.net) Fax: + 992 372 510037 for both.

IAGOD Council (2000–2004)

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|                          | P. Herzig, SGA Treasurer | Germany | herzig@mineral.tu-freiberg.de |

**IGCP 443**

**Magnesite and Talc: Geological and Environmental Correlations**

International Geological Correlation Programme of UNESCO and IUGS led by

- **Martin Radvanec**, Slovak Republic; radvanec@gsrcsnv.sk
- **Walter Prochaska**, Austria; prochask@unileoben.ac.at
- **Antonio C. Gondim**, Brazil; gondim@geologia.ufpr.br
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*Website available on: http://www.gssr.sk/igcp443/index.html*

Correspondence address: **Zoltan Nemeth**, the Project secretary, Geological Survey of Slovak Republic, Werferova 1, 040 11 Košice, Slovak Republic, nemeth@dodo.sk
Report of the Working Group on Ores and Metamorphism (WGOM) for 2001

During the last year, WGOM participated in the "Joint Society of Geology Applied to Ore Deposits (SGA)-Society of Economic Geologists (SGE) Meeting" in Krakow, Poland (August 26-29). The WGOM session, "Metamorphism Affecting Mineral Deposits" included 14 papers that were edited by Nigel Cook and Ksenia Mochnacka. The topics of the papers were varied but they focussed mainly on the nature of gold complexes in metamorphic fluids, the origin of metallic skarns (Burdigalian (Algeria), Madan and Central Rhodopes (Bulgaria), Ocna de Fier Dognecea (Romania), Los Santos (Spain) Bonya Block (Australia), and the effects of metamorphism on massive sulphides (Aggeneys (South Africa), Langban (Sweden), a non-sulphide Zn deposit (Skorpion (Namibia) and magmatic iron ores (Pena Colorada (Mexico), as well as the geology of various vein deposits in metamorphic rocks (Rheinisches Schiefergebirge (Germany), Cerro Espero (Argentina), Svratka Dome (Czech Republic).

The WGOM have convened a session 'Metamorphism of Mineral Deposits' at the up-coming International Association on the Geology of Ore Deposits Geocongress in Windhoek. One of the chairs of the session is Nigel Cook. We will also convene a session at the 7th Biennial Meeting SGA in Athens (August 24-28, 2003). Apart from our participation in symposia associated with the SGA, IGC, and IAGOD meetings, it is hoped that, in the future, WGOM can also convene sessions at national meetings (e.g. Geological Association of Canada-Mineralogical Association of Canada, Geological Society of America, Australian Geological Convention, Geocongress) and other international meetings organized by, for example, the International Mineralogical Association. The study of metamorphosed and metamorphogenic ore deposits is alive and well.

The Newsletter remains the main vehicle of communication with members of the Working Group and the 14-page Newsletter no. 11 was sent out in January 2002. Adrienne Larocque now takes over as secretary of WGOM, in place of Nigel Cook, and will edit the next newsletter at the end of 2002.

Twelve papers presented during the WGOM session at the 31st IGC in Rio (2000) are now being prepared for a special volume of Ore Geology Reviews.

Executive Committee
Chair P. G. Spry, Ames, U.S.A. (first appointed 1999) e-mail: pgspry@iastate.edu
Co-Chair A. Mookherjee, Calcutta, India (first appointed 1999)
Co-Chair W. Prochaska, Leoben (first appointed 1994) e-mail: prochaska@grz08u.unileoben.ac.at
Secretary Adrienne Laroque, Manitoba, Canada / Manilla, Phillipines jstimac@i-manila.com.ph (first appointed 2002)

Contributed by Paul G. Spry, Chair, WGOM

The Mineral Deposit Studies Group

MDSG is an affiliate of the Geological Society (London) and the Applied Mineralogy Group of the Mineralogical Society. Visit the webpage at http://mdsg.org.uk/ The website together with the MDSG listserver aims to provide economic geologists (academics and industry) with up to date information concerning research initiatives, published abstracts, conference dates and pointers to contents pages of relevant journals. The MDSG Annual Winter Meeting will be held between 5th and 7th January 2003 at the University of Leicester (U.K.). The meeting will be followed by a fieldtrip on the 8th to the Peak District - "Locating blind MVT orebodies? - the UK perspective."

Geo-mineralisation is the MDSG’s listserver that provides an email discussion forum for academia, students and industry professionals interested in mineral deposits.
ANNOUNCEMENT

International Workshop organized by the Czech Group of the IAGOD

URANIUM DEPOSITS
FROM THEIR GENESIS TO THEIR ENVIRONMENTAL ASPECTS

Prague, Czech Republic, September 10 -11, 2002

GENERAL INFORMATION: The workshop will be held in Prague, Czech Republic, from Tuesday 10th to Wednesday, 11th September, 2002. One-day pre-workshop field trip is being planned for the Pribram historical uranium district and a two-days post-workshop field trip for the Straz uranium deposit and the Rozna uranium mine.

First Circular and Call for Papers: You are cordially invited to present the results of your work at the international workshop organized by the Czech Group of the IAGOD in cooperation with the Czech Geological Survey, Prague, Faculty of Science, Masaryk University, Brno, Institute of Rock Structure and Mechanics, Academy of Sciences of the Czech Republic, Diamo state enterprise, Straz p. Ralskem, and the Society for Geology Applied to Mineral Deposits (SGA).


MEETING TOPICS:
• Uranium deposits and tectonic processes with special emphasis on the Late-Hercynian evolution of Europe
• Modelling of physical and chemical conditions of uranium migration and mobilization in hydrothermal processes geochemistry of rock alterations
• Uranium in supergene processes
• Chemistry of water-rock interaction after the closure and
• Flooding of uranium mines
• Chemistry and mineralogy of uranium mine tailings
• Hydrogeochemistry of radionuclides in aquatic environment

INVITED SPEAKERS: Invited lectures will be presented by Maurice Pagel, Université de Paris XI, Orsay, France; Michel Cuney, Université Henri Poincaré, Nancy, France; Lutz Hecht, Technischen Universität, München, FRG

ABSTRACTS: Extended abstracts (4-6 printed pages) will be published in a special volume. The abstract in electronic form should be submitted by 31. 02. 2002. Each abstract will be reviewed and final version should reach the organizing committee by 30. 04. 2002. Instructions for authors will be included in the 2nd Circular.

LANGUAGE: The official language of the workshop will be English.

CONFERENCE PLACE: Hotel ILF***, Budějovická st. 15/743, 140 00 Prague 4-Michle, Czech Republic.

IMPORTANT DATES
September 1, 2001 – Pre-registration
February 31, 2002 – Submission of Abstracts
April 30, 2002 – Final Version of Abstracts – Registration and Payment
September 9, 2002 – Pre-workshop excursion
September 12 – 13, 2002 – Post-workshop excursion

September 1, 2001 – Pre-registration
November 2001 – Second Circular
March 31, 2002 – Acceptance of Abstracts
September 10 – 11, 2001 – Workshop
September 10, 2001 – Second Circular
PRE-WORKSHOP EXCURSION
Monday, September 9, 2002:
Morning: Departure from Prague, Upper Proterozoic Formations of the Teplá-Barrandian Zone, Príbram historical U-ore district, Príbram Mining and Mineralogical Exposition, reclamation of uranium mine dumps. Afternoon: Príbram Holy Hill Monastery, geology of the Central Bohemian Pluton, evening return to Prague.

POST-WORKSHOP EXCURSION
Thursday, September 12, 2002
Morning: Stráž uranium deposit, environmental problems after closure of the mine, desalination of the contaminated Cenomanian waters. Afternoon: Kutná Hora medieval mining town, mining exhibition, the Saint Barbara gothic church, accommodation in Kutná Hora.

Friday, September 13, 2002
Morning: Arrival to the Rožná uranium mine, Underground excursion. Afternoon: Reclamation of uranium dumps, monitoring system at the Olší mine.

REGISTRATION FEES
Registration for the workshop (inc. transport from and to airport, abstract volume, ice-breaker party, lunches, refreshments, evening banquet and visit to the Prague castle) USD 135
Pre-workshop excursion (incl. transport, excursion guide, full board) USD 40
Post-workshop excursion (incl. transport, excursion guide, one-night accommodation, full board) USD 120
(Note: After April 30, 2002, a late registration surcharge of 10 % will apply to all above prices.)
Return by September 1, 2001 to: B. Kříbek, Czech Geological Survey, Prague 5, Czech Republic. Tel., Fax: 420-2-5817390, E-mail: kribek@cgu.cz

http://xrd.cgu.cz/uranium.htm

ACCOMMODATION: Accommodation will be arranged at Hotel ILF***: Single room – USD 65 /night, Double room – USD 91 /night and in students’ dormitory: Single room – USD 20 - 30 /night

MEETINGS CALENDAR:

2002

21-25 July Billings, Montana 9th International Platinum Symposium. Information: Roger Cooper, Lamar Univ. email: cooperrw@hal.lamar.edu Website: www.platinumsymposium.org

17–23 August Davos, Switzerland. 12th V.M. Goldschmidt Conference For info: Prof. A. Halliday, Institut fur Min.und Petrographie, ETH-Zentrum, CH-8092, Zurich Switzerland E-mail: halliday@erdw.ethz.ch

10–11 September, Prague, Czech Republic. Uranium 2002 — Uranium deposits from their genesis to their environmental aspects For Info: Contact Bohdan Kříbek E-mail kribek@cgu.cz or Josef Zeman E-mail jzeman@sci.muni.cz Website: http://xrd.cgu.cz/uranium.htm


16-18 September Novosibirsk, Russia International Conference on Tectonics and Metallogeny of Northeast Asia Website: www.uiggm.nsc.ru/uiggm/geology/admin Email: berzina@uiggm.nsc.ru

18–20 September, Kyiv, Ukraine. Conference on "Metallogeny of Precambrian shields" (see advertisement in this newsletter)

25-28 September Lima, Peru XI Peruvian Geological Congress. Website: www.ingemmet.gob.pe/sgp, e-mail: sgp@inictel.gob.pe
27-30 October Denver, Colorado Geological Society of America Annual Meeting and Exposition, "Science at the Highest Level". E-mail: meetings@geosociety.org, Tel: 1-800-472-1988

2003


16-22 August Oslo, Norway SCANDIUM 2003: An International Symposium on the Mineralogy and Geochemistry of Scandium. Website: www.nhm.uio.no/geomus/scsymp/

Geodynamics and Ore Deposit Evolution

The GEODE scientific programme is built upon five projects, each relating to metallogenic provinces in Europe which contain world class ore deposits. These are supported by projects in South America and the SW Pacific region specifically aimed at providing insights that can be applied to give a better understanding of ore deposit types in Europe and a project to make global comparisons between the world's major VHMS districts. The programme divides into studies of metallogenic provinces in orogenic systems active at the present day and studies of metallogenic provinces from the geological past. Only with modern systems is it reasonable to relate the mineralising processes to the present day large scale stucture and properties of the lithosphere, which are determined from geophysical information, although the lithospheric structure of the Urals orogen does appear to have been preserved since the time it was active.

Find out about GEODE Research Objectives, the Main Projects of GEODE (Alpine–Balkan–Carpathian–Dinaride Chain; Basin Hosted deposits; Fennoscandian and Ukrainian Shields; Southwestern Variscides; Urals and GEODE 'Global' projects, with all contact people and addresses on the GEODE website: http://www.gl.rhul.ac.uk/geode/

New on the website is LODE, a database in which the largest ore deposits in Europe are described in this database to indicate the extent and range of major ore deposits. They have been chosen by the co-ordinators of the five main projects in GEODE.

Global Tectonics and Metallogeny

A bulletin published by the Laboratory of Global Tectonics and Metalogeny, Washington, D.C. in cooperation with the Commission on Tectonics of Ore Deposits (CTOD) of the International Association on the Genesis of Ore Deposits (IAGOD)

Editor: Jan KUTINA, The American University, Washington, D.C. 200016, USA

Global Tectonics and Metallogeny provides a forum for a systematic discussion of selected questions, focusing on factors controlling the genesis and distribution of ore deposits on different scales. Special attention will be paid to the relationships between metallogenesis and global tectonics.

For subscription rates contact Schweizerbart’sche Verlagsbuchhandlung, Johannesstraße 3 A, D-70176 Stuttgart, Germany; fax: (0711) 625005; e-mail: order@schweizerbart.de

Special reduced price for private persons ordering and paying their subscription personally: US$ 81,— plus postage.
(and early part of 2002)

Recent scientific meetings organized by the members of Russian IAGOD group.

1. XIV Russian National Conference on Experimental Mineralogy was held on October 2-4, 2001 in Chernogolovka. The Organizing committee included the following IAGOD members: V.A. Zharikov (Chairman), D.V. Grichuk, G.P. Zaraisky, F.A. Letnikov, B.N. Ryzhenko and I.D. Ryabchikov. The conference contributions were divided into 5 sessions: (1) Magmatic systems under high pressures. (2) Mineral equilibria. (3) Hydrothermal and fluid systems. (4) Kinetics and dynamics of mineral formation. (5) Experiment in solving geological and ecological problems.

2. Seminar “Rhythm and Cyclic Recurrence in Geology as a reflection of General Regularities of Evolution” was held on February 7-8, 2002 in the Vernadsky State Geological Museum (Prof. D.V. Rundkvist – Chairman). 49 oral contributions were presented and discussed.

3. Symposium “Problems of Fluid Flows in the Earth’s Crust and Mantle” was held in IGEM RAS on February 26-28, 2002. It was organized by IGEM RAS and Inst. of Experimental Mineralogy RAS, V.A. Zharikov and N.P. Laverov – Co-Chairmen. 28 oral contributions were presented and discussed, and a quite opposite opinions on possibility of independent (from magmas) fluid flows migration from mantle were expressed.

4. X International Conference on Thermobarogeochemistry (Fluid Inclusion Research) was held in VNIISIMS, Alexandrov city, Russia, on September 10-14, 2001. Prof. F.P. Mel’nikov and Dr. E.V. Poliansky, Co-Chairmen. It was attended by 60 Russian scientists and one from Uzbekistan. Two volumes (of Abstracts and Proceedings) were issued in Russian (some papers with English summaries) before the meeting. The next conference is planned to be held in 2003 at the same place.

Forthcoming meetings in Russia.


3. International Symposium “Mantle Plumes and Metallogeny”, September 4-7, 2002, Petrozavodsk, Karelia, with one field trip before and four trips after the meeting. Contact persons: Andrey F. Grachev in Moscow (grachev@uipe-ras.scgis.ru) and Golubev in Petrozavodsk: golubev@krc.karelia.ru, fax: (7-8142) 770-602, tel: (7-8142) 782-753.

4. International Conference “Deep Structure and Geodynamics of Fennoscandian, marginal and intraplatform transitional zones”. September 16-20, 2002, Petrozavodsk, Karelia. Academicians N.P. Laverov and F.P. Mitrofanov, Co-Chairmen. Contact persons: Kim I. Heiskanen, Director of Geological Inst., Head of Organizing Committee (geology@krc.karelia.ru), Nikolay V. Sharov, Deputy Director (sharov@krc.karelia.ru) and Aelita V. Pervunina, Secretary (aelita@krc.karelia.ru).

New e-mail addresses of Russian IAGOD members:
Alekseyev, V.A. (Russia, Moscow) alekseyev@geokhi.ru
Recent papers of Russian (±other) IAGOD members:


The theoretical base and common types of metasomatic processes are discussed in the light of D.S. Korzhinskii’s theory. Thermodynamics, dynamics, and ideas concerning selforganization of metasomatic processes are developed according to current theoretical level. Results and technics of experimental study of metasomatism are observed. The relation of metasomatism to ore depositions is discussed, and a new concept of formation of ore-concentrating dense salt melts and related light metasomatizing fluids is proposed. The significant part of the monograph contains characteristics of metasomatic rocks, facies, and genetic assemblages with special attention to their geological setting, petrography, mineralogy, physico-chemical conditions and relations to ores. The monograph may be interesting for petrologists, geologists studying ore deposits, and specialists in metasomatism. It can be used as a textbook for students and postgraduate students.


The monograph represents an attempt to consider systematically conditions of formation and principal features of zoning of ore bodies and related haloes for low- and middle-temperature vein-type hydrothermal deposits with the use of thermodynamic computer simulation of ore-forming processes. The main strategy of research lays in equilibrium-dynamic approach when a process is described as a succession of thermodynamically stable steps, though with the use of some dynamic elements. The generalized models of hydrothermal ore-forming systems for vein-type base-metal and uranium deposits are constructed; their consideration includes a realm of initial ore-forming solutions formation and the sites of ore and haloes formation. The book can be useful as a textbook on computer simulation of ore-formation processes.


The book describes a method of constructing thermodynamic models of convective hydrothermal systems with an exogenous source of solutions. On the example of modeling the modern hydrothermal seafloor systems, the book shows the potential of the method in interpretation and prediction of hydrothermal ore formation. A method of constructing isotope-chemical models (on the example of sulfur isotopes) is described. The influence of boiling in the interior of hydrothermal oceanic systems on their metallic productivity is considered. The book is intended for geologists studying hydrothermal ore deposits, geochemists and marine geologists. It also can be useful for students as a textbook on computer simulation of ore-formation processes.

The map is available as CD ROM, explanatory notes (in Russian)– as a book, both in 100 copies. It is a first published 1:1 000 000 scale Map of Copper, Zinc and Lead Deposits Location in the Urals. Map was made on formational-geoodynamic base. It reflects the location environments of copper, zinc and lead deposits of the following ore-formation families: massive-sulfide, vanadium-iron-copper, skarn-copper, copper sandstones, porphyry-copper, stratiform lead-zinc and copper-nickel ones. Each of these ore-formation families occupies a certain position in the structures and in geological evolution of Eastern rim of the East-European platform, the Urals Paleozoic geosynclinal system and Valerianov volcanic-plutonic belt. Paleopectonic (geodynamic) environments of their formation are analyzed on the base of paleometallogenic sketches for Early Proterozoic, Riphean, Vendian-Cambrian, Ordovician-Silurian-Early Devonian, Early-Middle-Late Devonian, Late Devonian-Early Carboniferous, Early-Middle Carboniferous, Middle-Late Carboniferous-Permian. Directions and goals of geological-prospecting and scientific research works for copper, zinc and lead are defined. Persons interested in obtaining a copy of this book and CD may contact Professor E.S. Kontar’ (kontar@ugse.parad.ru).


A necessity to initiate exploration for oil and gas in the Khabarovsk Territory is substantiated in terms of social and economic aspects. Areas promising for oil and gas have been distinguished on the continental part and adjacent shelf of the territory. Oil and gas potential is evaluated and expected reserves are estimated. The authors drew recommendations for follow-up scientific researches, prospecting and geological exploration works for oil and gas, as well as the concept of their development till 2005 and also as far as 2025.


The ages of tin-bearing intrusive rocks and associated Sn deposits of the Far East Russia vary from Devonian to Miocene with the maximum in Cretaceous. Two types of multi-phase tin producing magmatic complexes (granodiorite-granite and diorite-granodiorite types) are identified in this region. The complexes differ from each other in the style of tin content evolution from early to late phases, and in petrographic composition of the main phase. However, both of them are characterized by similar evolution of $\text{Al}_2\text{O}_3/\text{Na}_2\text{O}+\text{K}_2\text{O}+\text{CaO}$ and $\text{Fe}_2\text{O}_3/\text{FeO}$ ratios and initial ratio $^{87}\text{Sr}/^{86}\text{Sr}$. Both magmatic complexes have the same differentiation trend on AQP diagram. Initial magmatic melts of both magmatic complexes are assumed to have been similar.


A major new mineral resource database is being compiled for an international collaborative project on the mineral resources, metallogenesis, and tectonics of Northeast Asia. The database, that is a new English compilation of data on lode deposits and placer districts of the region, contains comprehensive data on locations, major and minor metals, mineral-deposit models, geological characteristics, and references. The project is being conducted by the Russian Academy of Sciences, the Mongolian Academy of Sciences, Jilin University (China), the China Geological Survey, the Korean Inst. of Geology, Mining, and Materials, the Geological Survey of Japan, and the U.S. Geological Survey.


The metallogenic belt map of Northeast Asia at a scale 1:5 M is constructed on the base of geodynamic (terranes and overlap assemblages) map of the same scale. Metallogenic belts are outlined based on the analyses of geodynamics and metallogeny of each main structural unit.

About 80% of known mineral deposits of different types in Russian Far East were formed during the Mesozoic and Cenozoic. Important metallogenic events are related to consecutive accretion of various tectonic-stratigraphic terranes to North Asian Craton that started in the early Mesozoic. After accretions, the craton margin and accreted terranes were stitched by granitoid batholith belts and overlapped by volcano-plutonic belts. Numerous metallogenic belts are spatially related to these magmatic belts and genetically related to the processes of accretion and subduction.


This paper addresses the problems of ore metal mobilization and concentration and volatile component behavior in the Earth’s mantle. Diamond crystallization and the formation of chromitite bodies upon interstitial melt infiltration in mantle rocks are examples of mineralization processes occurring in the Earth’s mantle. Depending on the formation conditions, mantle magmas can be intrinsically enriched in various ore components (PGE, chromium, and rare metals). Their further concentration occurs in crustal magma chambers as a result of the processes of magma mixing, prolonged crystal fractionation, and the separation of immiscible salt melts (mainly carbonatitic) at late stages of the magma system evolution. In subduction zone regions, ascending flows of deep-derived fluids selectively transport a number of ore metals into the growing continental crust and prepare continental crust material as a source of the material of ore deposits. It is possible that some of these fluids took part in the formation of certain deposits. In hydrothermal ore-forming systems with nonmagmatic sources of metals and solutions, the source of heat energy was most likely represented by magma masses intruded into the upper crust.

Contributed by I.N. Kigai


Some of members of the National Group participated in INTAS-GEORGIA Joint Project 1416 entitled "Elaboration and quantification of metallogenic evolution of Alpine fold systems: the Pontides-Lesser Caucasus sector of the Tethyan Eurasian metallogenic belt". Duration: 1999-2001. Objectives:

- to investigate structure, mineralogy and geochemistry and conditions of formation of some of the more important, and representative, mineral deposits in both the Turkish and Georgian parts of the belt;
- to establish the conditions, timing and chemistry of the hydrothermal systems that formed the deposits;
- to establish the regional structural and paleogeographical factors controlling the distribution of volcanism, plutonism and mineralization;
- to elaborate the reconstruction of the metallogenic evolution of the regions of the East Pontic metallotect, NE Turkey and its prolongation in the Lesser Caucasus using GIS techniques;
- to predict areas with a high probability of occurrence of undiscovered deposits and recommend effective methods for their exploration.

Project participants: Dr. C. Moon (coordinator), Prof. Dr. N.Ozgur (team leader), Dr. S.Kekelia (team leader), Dr. R.Migineishvili (team leader), Dr. V.Gugushvili, Dr. M.Kekelia, Dr. Z.Otkhmezuri, Dr. G.Gotsiridze, M.Asatashvili.

Publications:


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The Chinese National IAGOD Group will hold a workshop on 16th-22nd September 2002, jointly with the 7th National Meeting on Mineral Deposits of China. The title of the workshop of 7th National Meeting on Mineral Deposits of China is the Sustainable Development of Mineral Resource in 21st Century. The contents of the Workshop will include:

1) Geochemical kinetic evolution and metallogeny in major metallogenic belt;
2) Mineral Deposits related to magma-volcanism;
3) Mineral Deposits of SEDEX and VHMS type;
4) Mantle fluid and metallogeny;
5) Non-metalliferous mineral deposits;
6) Mineral Resources of sea flour;
7) New theory, method and technology of exploration for concealed ore deposits;
8) Others

Geological excursion include:
1) Molybdenum deposits of Jinduicheng and Huashan granite;
2) Maanqiao, Shouangwang, Baguamiao gold deposits and metamorphic terrain of North Qinling.
3) Changba PbZn ore deposits
4) Topography of loess in North Shaanxi
5) Zhongtiaoshan copper deposits in Shanxi


The 7th National Meeting of China is a large meeting held once every four years. It is expected that 400-500 participants will attend.

Chairman of the Chinese IAGOD Group, Pei Rongfu, together with other members of China National IAGOD Group participated in the workshop of "Deep Structure of the Earth and Concentration of Metals in the Lithosphere: A Geodynamic Approach" in Washington on September 2001. Details have been reported elsewhere in this newsletter.

Pei Rongfu, together with other members completed a national project "Geological Assessment of Mineral Resources Potential for Hard-identified Concealed Large and Rich Ore Deposits" which has been published by Geological Publishing House of China. The abstract of this project is:

GEOLOGICAL ASSESSMENT OF MINERAL RESOURCES POTENTIAL FOR HARD-IDENTIFIED CONCEALED LARGE AND RICH ORE DEPOSITS

1. Four-hierarch metallogenic mechanism: Metallogenic province is defined as the area in which the metallic ore deposits and their series are concentrated regularly. A metallogenic province means the integration of metallogenic geological setting, metallogenic structural convergence, metallic metallogenic phase and ore deposits with specific texture, that is to say the integration of setting, convergence, phase and ore deposits. The coupling of the above-mentioned factors result in the formation of ore deposits at different levels. The concept of hierarchy metallogenic is similar to that of study on diagenetic evolution and sedimentary cycle in the petrological and stratigraphic hierarchy. The metallogenic history witnesses the evolution from micro-metallogenesis through middle-sized metallogenesis to macro-metallogenetic tectonic background, then the ore-controlling field of useful ore-controlling factors, finally the physicochemical metallogenic phases constraining metallization and formation of ore deposits with certain texture and structure. The identification of four-hierarchy metallogeny and analysis of the northern margin of North China Platform and the area north to it perfect the scientificity, overall view and application.

2. Isopycnic maps of ore deposits (occurrences) used for geological assessment of mineral resources: The ore-concentrated area is brought back by drawing of the known ore deposits (occurrences) on a map. Because the super large ore deposit is based on the huge accumulation of metals, the ore-concentrated area represents the huge ore source and huge accumulation site for ore-forming material. In addition, most super large ore deposits are associated with the same types of small or large ore deposits. Consequently, the analysis on the configuration, intensity, scale and concentration trend of ore-concentrated area is conducive to the strategic prognosis of large or super large ore deposits. In the compilation of isopycnic map of gold deposits in China, the natural points labeling method in which information might lost was not adopted, but the logical variables were set and comprehensive information processing method was adopted to divide the density area into high-middle-low-graded 36 areas. The studies analyzed the coupling relation between structure and regional ore belts, enhanced the comparison between configuration and quantity, and selected the prospects of mineral resources.

3. Orientation of derivative ore deposits and metallogenic path assessment of mineral resources: like the inheritance and variance of biologic multiplication, inheritance and affinity exist in the formation of ore deposits. The new ore deposits inherit the features of the old ore deposits, or the new ore deposits derive from the old ore deposits. Because the old ore deposits derive from mantle or crust, both of them have affinity with mantle or crust. The scientific identification of cause and effect of ore deposits, their evolution path, orientation of those ore deposits with different configuration but affinity is conducive to tracing the other various ore deposits.

4. Assessment of mineral resources in the ore-concentrated area: It focuses on the assessment of the initial ore source. According to the types of crust and its relations to supply of ore-forming material, ore sources are divided into four types: final source-ore elements of mantle; initial source-ore-forming elements in the initial crust; intermediate source-ore-forming elements of the mobilized reconstituted crust or sedimentary reconstituted crust. The initial source mostly reflects the characteristics of geochemical blocks and their metallogenic potential. The ore-concentrated area takes the geochemical blocks rich in some metals easy to be leached out as source rocks. The initial source can be recognized by the following ways: at first it should be determined which kind of mafic volcanic rocks and metamorphic rocks represents the initial crust; then the petrologic formation should be geochemically studied; finally, the abundance and concentration coefficient should be determined and the metallogenic potential be analyzed. In general, the higher the elementary abundance and concentration coefficient, the greater the metallogenic potential. It is shown that the eastern Shandong, Xiaoqinling, Jiapigou and Zhangjiakou gold ore-concentrated areas bear higher elementary abundance and concentration coefficient, which lays fundamentals for metallization. As for the large ore deposits, it is needed for the intensive thermal and
tectonic events to mobilize gold for further enrichment. The objects for assessment of ore-concentrated areas are the landmass or active belt-scaled tectonic units. It designates the prospecting orientation of western Shandong, northern Taihangshan and northern Hebei without clear metallogenic scale.

5. Assessment method of metallization by “three-source” hydrothermal solution metasomatism: Source of thermal solution is the main determination of origin and prognosis of ore deposits. Metasomatic hydrothermal solution is defined as the product of interaction between water and rocks, which forms the metasomatic ore deposits. Around such ore deposits are the large area of negative metal halo, which indicates that wall rocks provide ore-forming material for metallization. The negative O isotope of wall rocks within orebodies indicates that it is meteoric water that interacts with rocks. Some orebodies are hosted in the circular or radiate structures in the intrusives. Accordingly, the metallogenic theory points out that three factors, ore-forming material, water and heat are respectively derived from wall rocks, meteoric water and magma. The distribution of ore deposits is controlled by the scale and location of ore source, water source and heat source. The mid-large ore deposits are generally located on the intersection of “three source”. Assessment method of metallization by “three-source” hydrothermal solution metasomatism suites the assessment of map of different scales in areas with different studying-level. Determination of three sources is the key. Since the application of the three-source assessment method in the prospecting of the northern margin of North China Platform, many prospects and targets have been delineated. It has been approved that the industrial orebodies had been outlined in some ore deposits.

6. Rifting-basin-evolution assessment of gold deposits: Based on the analysis on strata and tectonic setting, this method takes the fine-grained gold deposits in Yunnan-Guizhou-Guangxi as the examples to establish a metallogenic model of early extensional depression of NS-trending central settlement and late face-to-face collision of two landmasses. In the early stage, the depression controls the distribution of deep-water area and shallow water area. The contemporaneous faults are developed in the isolated mesa in the basin or around the dome under water where the high Au background value of marginal slope reflects the initial Au enrichment. In the later stage, several large or small nappe structures are formed in the process of face-to face collision along the slide plane of Middle Permian coal horizon and Lower Tertiary shale and siltstone. Gold deposits are located in the front of nape. Gold deposits are generally apt to be located near the central depression, in the intensive strain area of the weak strain area, or in the weak strain area of intensive strain area. The recognition of uplift under water is the key for prospecting of large karlin-type gold deposits.

7. Geochemical prospecting of Pb isotope used for prognosis of deep concealed ore deposits: Unlike the traditional geochemical prospecting method, it is based on the transform data processing to obtain the eigenvalue V1 and V2 of three-dimension topology. The eigenvalue can be used to make intermediate-detailed scale map, classify geochemical blocks, reveal the sharp transition of Pb isotope which represents the controlling boundary of large-super large ore deposits. The sharp turning point of the sharp transition generally represents the location of the ore-concentrated area. On the one hand, the great importance should be attached to the searching of reformed ore deposits on the obvious sharp structural transition, and to the prospecting of thermal sedimentary ore deposits in the foreland basin on the concealed sharp structural transition. On the other hand, the systematic profile of Pb isotope eigenvalue can be used for the prediction of depth of the concealed ore deposits. Based on the systematic profile of Pb isotopic geochemical prospecting, the Pb isotope assessment of mineral resources was developed, the theory of positive deep prospecting-oriented anomaly and diatropism-orientated negative anomaly was put forward. Consequently, the three-dimension location method of ore deposits by Pb isotope was developed, the model of prediction of metallogenic depth and reserves was established. Based on the Pb isotope assessment method, the prospecting strategy of the Tangdan copper deposit in Dongchuan, Daping gold deposit in Yunayang, Longbohe copper deposit in Jinping was worked out. It was successfully approved by drilling engineering in the Longbohe copper deposit. This method can be used in the exploration of ore deposits and prospective prognosis of deep ore reserves in the mining area.

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Report of the Mongolian National IAGOD Group for 2001

Workshops, Symposia:
Symposium “Problems of Mongolian Geology” hold on October 19-20 in Ulaanbaatar, School of Geology, Mongolian University of Science & Technology. Forty-eight presentations related to petrology, mineralogy, neotectonics, ore deposits and metallogeny, hydrogeology and geophysics were discussed. Scientific Journal “Geology”, No. 4 was published in October 2001.
Workshop GOLD 2002 hold on February 25-28 in Ulaanbaatar, Mongolian University of Science & Technology, sponsored by Mongolian University of Science & Technology, Mongolian Geological Society, Mongol Alt Ltd and Ivanhoe Mongolia Ltd. Invited speaker Mr. Douglas Kirwin, vice-president of Ivanhoe Mongolia Ltd presented 5 lectures on epithermal gold-silver, porphyry gold-copper deposits, hydrothermal breccia pipes, iron oxide-copper-gold and mesothermal gold deposits, and economic geology of SE Asia. 75 geologists from School of Geology, Mongolian University of Science and Technology, Mongolian State University, Geological Survey of Mongolia, Geological Information Center and about 10 private companies attended this Workshop. After Workshop geologists visited a new discovered porphyry Cu-Au deposit of Oyu Tolgoi in South Gobi.

Attendance in IGCP and other International Projects:

Published:

Distribution Map of Mineral Deposits and Occurrences in Mongolia, scale 1:1,000,000 with Tables of significant Mineral Deposits and Occurrences (14 sheets), 340 pages, including 417 deposits and 3663 occurrences, with compiled by G. Dejidmaa, B. Bujinkam, T. Ganbaatar, N. Oyuntuya and B. Enkhtuya. Edited by J. Lkhamsuren, G. Dejidmaa, O. Gerel, S. Dandar, Sh. Batjargal, B. Bold-Erdene and D. Batbold. In 2001 were additionally included and described non-metal mineral resources (construction stone, sulfur, salt, precious stones, mineral pigments, quartz, etc.)

Selected publications:


IAGOD National Group of Mongolia: Chairwoman: Prof. Ochir Gerel (Mongolian University of Science & Technology, S. Dandar (secretary, MUST), J. Lkhamsuren (MUST), S. Dashdavaa (SU), Sh. Batjargal (MUST), G. Dejidmaa (Geol. Inform. Center), N. Amitan, (Togs Buiant Ltd); D. Bat-Uulzii (MUST), J. Ganbold (Mong. Acad Sci, IGMR), B. Delgertsogt (Geoinformation Center), B. Munkhtsengel (MUST), Sunjidmaa (MRAM), M. Todbileg (MUST), D. Shahrhuukhen (M & Diamond Ltd), D. Altankhuyag (MRAM), A. Tsend-Ayush (M & Diamond Ltd). A. Gotovsuren (Mongol Gazar Ltd, Mongolia) B. Batkhishig (Tohoku University, Japan), O. Chuluun (MRAM), D.Batbold (MRAM), D. Bold-Erdene (MRAM), H. Gantumur (MRAM), B. Chuluun (MRAM) and S. Oyungerel (MSU), G. Ukhna (MUST)

Contributed by Prof. Ochir Gerel, Dept. of Geology & Mineralogy, Mongolian University of Science & Technology, P.O. 46, Box 520, Ulaanbaatar 46, Mongolia. Tel: 976-11-326425; Fax: 976-11-324121. e-mail: gerel@mtu.edu.mn

Report of the Czech IAGOD National Group for 2001

IAGOD group members participated in the Certificated Postgraduate Training Course GEOCHIM 2001 which was held in Prague and Dolní Rožinka (Czech Republic) from September 4 to 18, 2001. This course was organized by the Czech Geological Survey and IGCP 429. Thirteen participants from Albania, Canada, Jordan, Kazakhstan, Mongolia, Russia and Zambia were trained both theoretically and practically in geochemical exploration methods and their environmental application.

Moreover, IAGOD group members participated in the SGA biennial meeting in Krakow and in the International workshops Phosphorus and Fluorine-rich Granites in Podlesí, Czech Republic and in the International Meeting in honour of Hans Closs (1885-1951) in Bautzen, Germany.

Selected publications:


In press:


Future activities:

The Czech IAGOD group will organize International Workshop: Uranium deposits: From their genesis to their environmental aspects. The workshop will be held in Prague, from September 10 to September 11, 2002. Pre- and post-workshop field trips are particularly focused on visiting uranium-mining districts including the last operated uranium mine in central Europe at the Rožná deposit. Information are available from Dr. B. Kříbek, Czech Geological Survey, Klárov 3, P.O.B. 85, 118 21 Prague 1, Czech Republic (kribek@cgu.cz).

IAGOD group members will participate at the International Meeting in honour of Zdenek Pouba and Jaromír Koutek: Czech Economic Geology at the Beginning of the 21st Century, May 20, 2002. Information available from Dr. Richard Přikryl, Faculty of Sciences, Charles University, Albertov 6, 128 42 Prague 2. (príkryl@mail.natur.cuni.cz).

IAGOD group members will participate at the organization of the, Certificated Postgraduate Training Course GEOCHIM 2002 which will be held in Prague and Rozna from September 4 to September 18, 2002. Information are available from Dr. Jan Pašava, director of GEOCHIM (pasava@cgu.cz).

Report of the Slovak IAGOD National Group for 2001

Conferences 2001:

Members of the Slovak IAGOD group took effectively part at the Congress of the Slovak Geological Society 2001 “Banská Štiavnica – City Upon Volcano” at Banská Štiavnica, on June 27–29th 2001. Together 10 papers have been presented there: The main topics of the conference: 1. Neogene volcanism in central Slovakia, 2. Structure and evolution of the Štiavnica stratovolcano, 3. Character of the Pleistocene volcanic activity, 4. Metallogeny of the Štiavnica stratovolcano, 5. Model of epithermal ore mineralization of the Banská Štiavnica ore district, 6. Banská Štiavnica-Hodruša region - the most significant centre of the mining activities in Europe in the past. As a part of this symposium was realized excursion at the Štiavnica stratovolcano and too the visit of the Hodruša gold deposits was organized. Many experts (cca 160 participants) from Slovakia and Czech republic took part at this symposium. The articles and abstracts of the contributions have been completely published in the journal of Slovak Geological Society - Mineralia Slovaca 33 (2001) No. 3.

Members of the Slovakian IAGOD group actively took part also at the conference "Heavy mineral prospecting and accessory minerals" performed on November 14th-16th 2001 in Banský Studenec near Banská Štiavnica. The aim of the conference was to present the latest results of recent works on the project “Reinterpretation of exploration results of heavy mineral prospecting on the territory of Slovakia”. The conference and the excursions were attended by 80 participants from Slovak and Czech republic, together 22 papers and 6 posters have been presented here.
Regional heavy mineral prospecting in Slovakia brought also new data about distribution of kassiterite, scheelite, wolframite and REE minerals, as well as essentially in clastogenic sediments and allowed to find again the Au placers being already exploited by Celtic miners in the past.

The special volume of Mineralia Slovaca 33 (2001) No. 5 contains the brief communications, papers and posters from the conference.

Current members of the Slovakian IAGOD group (up to December 31\textsuperscript{th} 2001):

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12. Rojkovič Igor Prof. Dr., Department of Geology of Mineral Deposits Faculty of Natural Sciences, Comenius University, Mlynská dolina G, 842 15 Bratislava G, t.: 421/02/796 279, f.: 421/02/729 064, rojkovic@fns.uniba.sk

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Mineralogy for the New Millennium

IMA2002 - Edinburgh 1st - 6th September

18th GENERAL MEETING OF THE INTERNATIONAL MINERALOGICAL ASSOCIATION
1st – 6th September 2002 EDINBURGH, SCOTLAND
AT THE EDINBURGH INTERNATIONAL CONFERENCE CENTRE

Website at: http://www.minersoc.org/

The 9th IAGOD volume contains papers on 13 topics concerning ore deposits: 1) Ore-forming theory for superlarge ore deposits, 2) Structure of ore fields and ore deposits, 3) paragenesis and paragenetic sequence, 4) experimental modeling of metallogeny, 5) kinetics and thermodynamics in ore-forming hydrothermal systems, 6) isotopic and trace element geochemistry of mineral deposits, 7) gold, silver, and uranium deposits, 8) stratiform and strata-bound deposits, 9) skarn deposits, 10) tin and tungsten deposits, 11) ore deposits in mafic and ultramafic rocks, 12) fluorite, and 13) manganese deposits.

Important aspects discussed in this unique volume include the minerogenic (metallogenetic) series of ore deposits, a concept developed especially from investigations of ore deposits in China during the past four decades. The setting and affiliation of giant ore deposits is treated in detail. Genetic interpretations for the formation of ore deposits included: 1) structural controls by cratonic margins, 2) transition zones between cratons and continental margins, 3) intersections of deep-seated mantle-rooted structures, 4) involvement of magmatism and sedimentation on the stable margins of the intraplate, 5) involvement of abundant volatiles and alkali metals, and 6) importance of rejuvenation in the formation of ore deposits.

Other highlights of this volume include: 1) sulfide morphology and potassic alteration in Mississippi Valley ore deposits, 2) multiple generations of sulfide deposition, 3) the roles of liquid immiscibility, and immiscible salt-rich melts, and fluid mixing in ore deposition, 4) magmatic and greisen zonations, 5) REE fractionation in copper, fluorite, and massive sulfide deposits, 6) carbonatite-related fluorite ores, 7) ore fluid controls on trace element contents in wolframite, and 8) origin of reduced sulfur in Kupferschiefer ores.

ALSO STILL AVAILABLE………..


Proceedings of the Sixth Quadrennial Symposium, Tbilisi, USSR, September 6-12, 1982. Volume I. Papers presented at the Symposium on topics related to general problems on the genesis of ore deposits and on studies of the ore geology of specific districts or deposits and on studies of the ore geology of specific districts or deposits. Edited by Tamaz V. Janelidze and Alexander G. Tvalchrelidze.1984. VIII, 544 pages, 210 figures, 59 tables. Cloth 63 Euros. (ISBN 3-510-65095-6)


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Report of the IAGOD Commission on Placer Deposits (COPD) for 2000-2002

The Commission on Placer Deposits (COPD) is a new IAGOD unit created in 2000 at the 31st International Geological Congress in Rio. The background for its creation was determined as the following: Placers are one of the largest genetic groups of the sedimentary mineral deposits. They play also an important role as a sources for many raw materials – more than 70 % of titanium, more than 70 % of zircon, about a half of gold (including metamorphic placers and weathered rocks), about 20 % of diamonds, 70 % of niobium, 50 % of tin, and about 10% of tantalum (including weathered rocks) are developed from placer deposits. 35 minerals occur in placers in economically important contents, and about 25 from them form self-dependent commercial types.

The following activities were carried out over the biennial period of its activity:

2000-2001 - The 12th International Symposium on placer and weathered rocks deposits (RKW-2000) titled “Natural and Technogenic Placer and Weathered Rock Deposits at the Turn of the Millenium”, September 25-29, 2000, Moscow, Russia). 230 participants from 12 countries. 150 oral presentations, more than 65 posters. Two volumes of abstracts - in Russian (442 pages) and in English 237 pages). Three field geological excursions.


The IAGOD PDC took part in the organization of the special meeting “Quaternary Placer Deposits” in the frame of the CanQUA Congress (August 2001, Whitehorse, Yukon Territory, Canada) with the assistance of PDC. The meeting included 10 oral presentations, including 8 on placer deposits, and gathered more than 60 participants.

PDC put forward the proposal to include the special Symposium on placer deposits in the Program of IAGOD Conference 2002 titled “Placers: from sources to sea “.

Some publications on placer deposits issued after the 31st IGC Congress (Rio):


Officers of COPD:

Chairman: Academician Nikolay A. Shilo, Russian Academy of Sciences, Moscow, Russia, Tel. (office) +007 095 230 8427, Tel (home): +007 095 959 0591, fax: +007 095 230 2179

Vice-Chairman: Dr. Jan Krasson, Geoexplorers International Inc., 5701 East Avenue, Denver, Colorado 80222, USA, Tel +1 303 759 274; fax: +1 303 759 0553, e-mail: geoexpl@eazy.net; geoexplorers@geoexplorers.com

Secretary: Doctor of Sciences Natalia G. Patyk-Kara, Inst. of Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry off Russian Academy of Sciences (IGEM RAS),
Report of the IAGOD Commission on Industrial Minerals and Rocks (COIMR)

This new group was formed in 2000 and its activities are beginning to develop. An e-mail newsletter sent out in 2001 set out the aims and objectives of the group, and these are reproduced below. The feedback suggested that the group might organise a new IGCP project with a purpose of assessing the demand for industrial mineral and rocks (IMRs) in the future, matching this with the current availability of raw materials on the world market, and examining the geological environments where future resources are likely to be located. It is a very broad topic and possibly would need to be rather more focussed by specifying individual IMRs or groups with a similar geological setting. It would involve developing a further understanding of the geological processes which creates an industrial mineral resource of the quantity and quality required by the consuming industries. With all IMRs, quality parameters (i.e. the physical and/or chemical properties of the mineral or rock) are critical in establishing whether a resource exists or not. Engineered non-metal based materials are increasing in importance, especially replacing metals in numerous applications. They require high quality consistent IMRs as raw materials. The Chairman will co-ordinate further feedback on this topic and will take it forward to IGCP if there appears to be support. A project of this type will need to involve several organisations in several countries, probably with further additional funding outside IGCP. Ideas and support are welcomed!

It is intended to set up an e-mail newsgroup for COIMR, so that meetings, conferences and other activities relevant to industrial minerals and rocks can be publicised. Hopefully, this will be achieved before IAGOD meets in Windhoek in July 2002. I am sure that there are several national meetings on IMRs held each year, which do not receive much, if any, publicity outside the country where it is held. Yet, it would be attractive to many IAGOD members. One example is the Forum on the Geology of Industrial Minerals held annually in North America (except for 2000, when it was held in UK). This conference is now in its 38th year, yet few people outside North America attend. The 39th Forum on the Geology of Industrial Minerals will be held in Nevada in spring 2003 (see www.industrialmineralsforum.org). Books have been produced from all previous Forums. These are a valuable source of information on a very wide range of industrial minerals and rocks, especially those in North America. Other useful sites for information and events involving industrial minerals are www.smenet.org, www.mineralsuk.com and www.indmin.com.

The aims and objectives of COIMR are:

1. To promote international cooperation in the study of industrial minerals and rocks (IMRs). This includes studying their geology, genesis, mineralogy, geochemistry, physical and chemical properties, procedures for exploration and evaluation, environmental effects and benefits, and the relationships among these aspects and the utilisation of IMRs. Other aspects of their study are not excluded by definition.

2. To provide a mechanism for discussion of IMRs through sponsoring sessions at conferences, workshops and field meetings.

3. To raise awareness of the importance of industrial minerals and rocks in the world’s economy, social development, and environmental sustainability, and to promote academic and other research on IMRs.

4. To form working groups of specialists, which can focus on particular aspects of the study of IMRs and/or concentrate on solving particular problems related to the study of IMRs, as the need arises.

5. To develop and support a network of communication between those interested in the study of IMRs.

6. To provide a pathway through which multinational research projects can be initiated.
The IAGOD Working Group on Skarns

The www-site of the IAGOD Skarn Working Group continues to be the main activity of the group and can be found at: http://www.wsu.edu:8080/~meinert/skarnHP.html This website is designed to coordinate research and interest in skarn. It is continually being updated (most recently in the Spring of 2002) and is a source of much information on skarn deposits, their classification and characteristics. An extensive bibliography accompanies the text and illustrations.

A skarn list server has been established to facilitate discussion among researchers. To subscribe, send a message to: listproc@listproc.wsu.edu.

Contact: Larry Meinert, Chairman of the IAGOD WG on Skarn Deposits, Department of Geology, Washington State University, Pullman, WA 99164-2812; phone: 509-335-2261 (office); 509-335-3009 (secretary); fax: 509-335-7816; e-mail: Meinert@wsu.edu

SOCIETY FOR GEOLOGY APPLIED TO ORE DEPOSITS (SGA)

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Free copies of SGA NEWS for IAGOD Members on request (fax +41-22-3205732; e-mail sganews@sc2a.unige.ch).

The SGA journal is Mineralium Deposita. An electronic edition of Mineralium Deposita is available via the LINK Information Service http://link.springer.de
Report of the Working Group on Thermodynamics of Natural Ore-Forming Fluids

The Working Group on the Thermodynamics of Natural Ore-Forming Fluids started in 2001 in the framework of the IAGOD (International Association on the Genesis of Ore Deposits). Themes under consideration include:

- Experimental study and thermodynamic description of mineral-fluid equilibria over a wide range of temperature (25–1000 °C) and pressure (1–10000 bars):
- Experimental investigations of thermodynamic properties of ore elements
- Properties and specialities of low density fluids
- Properties and specialities of mixed (H₂O – volatile) fluids
- Properties and specialities of H₂O near critical region
- Development of new software for computing equilibria in complex heterogeneous systems.
- Computer modelling of transport and deposition of ore elements under hydrothermal conditions.

The 4th - 6th April 2001 the Fifth International Conference "New Ideas in Earth Sciences" took place within the precincts of the Moscow State Geological Prospecting Academy, Moscow, Russia. During the section on "Physical Chemistry of Natural Ore Forming Fluids" at this Conference, the full range of the problems mentioned above problems were discussed. The list of topics of scientific oral presentations is given below.

1. Akinfiev N.N. Equation of state for aqueous non-electrolytes in the wide range of temperatures and pressures.
6. Dadze T.P. Solubility, transport and deposition of gold in sulfur-bearing systems.
7. Grichuk D.V., Abramova E.E. Exhalation-recycling model of sulfur deposit formation
8. Gushchina L.V., Obolenskii A.A. Sb (speciation and metalliferousity) in hydrotherms
11. Kovalenker V.A. Physical chemical environment of gold and silver ore formation in various epithermal deposits.
13. Laptev Yu. V., Pal'yanova G.A. Influence of H₂O-CO₂ fluids on equilibria in the systems H₂O-CO₂-SO₂ and H₂O-CO₂-NaCl-HCl-Ag at 300-400 °C.
17. Stepanchikova S.A., Kolonin G.R. Complexing of Nd, Sm and Ho in chloride solutions at 100–250 °C
Recent publications of the members of our working group in 2001:


Contributed by Prof. Nikolai Akinfiev

International Geological Correlation Programme

The IGCP was founded in 1972 at the 24th International Geological Congress in Montreal, Quebec, Canada and is therefore now 30 years old! The goal was to create an ambitious global program of scientific collaboration between working scientists, rather than between governments. From the beginning, the program has operated as a joint initiative of the International Union of Geological Sciences (IUGS) and the United Nations Educational, Scientific, and Cultural Organization (UNESCO). The IUGS serves as a scientific guide, while UNESCO handles operational and administrative matters.

Projects are selected and annually reviewed by the IGCP Scientific Board. Visit the IGCP website for more information about the IGCP, a full listing of current projects and details of application procedures at: http://www.unesco.org/science/earthsciences/igcp/

IGCP Projects active in 2001/2002 on issues concerning ore deposit geology:


http://www.nhm.ac.uk/mineralogy/seltmann/IGCP/index.html
"Deep Structure of the Earth and Concentration of Metals in the Lithosphere: A Geodynamic Approach"

With a Discussion on New Ways for Mineral Exploration

An international workshop organized by the IAGOD Commission on Tectonics of Ore Deposits (CTOD) and the Geodynamics Branch of the NASA Goddard Space Flight Center. Held at the U.S. Geological Survey, Reston, Virginia September 18-20, 2001

Conveners: Patrick T. Taylor and Jan Kutina

The 5-year UNESCO-sponsored project “Economic Superaccumulations of Metals in the Lithosphere” (IGCP-354) was tasked to study the origin and relationships between large concentrations of metals in the crust and the deep structure of the lithosphere. This recent meeting extended the discussion of ore genesis to deeper parts of the Earth. Geophysicists, involved with the study of the dynamics of the Earth’s core, the core-mantle-boundary and the structure and processes in the mantle were invited to represent a more interdisciplinary approach. An introductory paper at the 2001 Workshop by J. Kutina and Rongfu Pei presented examples of "mantle-rooted" ore-controlling structures.

This report is a summary of the recent workshop. A more complete report with selected presentation and extended abstracts will appear in “Global Tectonics and Metallogeny”- a journal published by Schweizerbart in Stuttgart, Germany.

I. The satellite altitude magnetic anomalies

Global magnetic anomaly maps (POGO, MAGSAT) – one of the main research topics of the Geodynamics Branch of the NASA Goddard Space Flight Center and collaborating institutions (R.D.Regan et al., 1975; R.A. Langel et al., 1982; P.T. Taylor et al., 1992; J. Ridgway & W.J. Hinze, 1986; and others) is a source of important information:

Using the magnetic anomaly map of South America by Ridgway & Hinze (1986) a prominent change in magnetic amplitude of an east-west belt can be seen in the state of Rondonia in western Brazil. These changes occur where Proterozoic granitic rocks, with associated tin deposits, have intruded along an intersecting north-south structure. Hence, the latitudinal belt should have existed there as early as Proterozoic or earlier. It was determined that changes in magnetic amplitude of the latitudinal belts of magnetic highs and lows could be used to estimate the geologic time at which these belts were formed. The pattern of the latitudinal belts of magnetic
highs and lows is in general agreement with the east-west trending trans-regional, mantle-rooted structural discontinuities revealed by combination of geologic and geophysical criteria. When projected on the surface geology, both the E-W belt of satellite magnetic anomalies and structural discontinuities extend across the boundaries of rock units of different ages in the very heterogeneous upper crust. Consequently, these belts become markers providing information on later processes of evolution, possibly also on changes in the orientation of lithospheric plates. J. Kutina and P.T. Taylor discussed this idea in more detail.

A.V. Pertsov et al. presented a map of preferential location of giant ore deposits of Russia at the intersections of EW-trending structural lineaments with fracture zones of other trends.

2. Regional magnetic and gravity interpretations

T. Hildenbrand and Byron Berger have demonstrated, in their ‘state-of-the-art’ analysis, that regional gravity and magnetic data, as well as high resolution potential-field data can reveal the structures and igneous bodies which control large concentrations of metals (shown by examples from Battle Mountain District in Nevada and Butte District in Montana). Using gravity anomalies, the authors calculated the thickness of both the lithosphere and the magnetic layer presumably related to the Curie point isotherms (noting the thickness has changed in the course of geological evolution). An episodic reactivation of deep-seated zones of fracturing, related to subsequent stages of evolution, has also been revealed.

In another paper, S. Parker Gay demonstrated the use of regional aeromagnetic data to define the fault pattern in the Precambrian basement, calling it “the plumbing system for mineral concentrations in the lithosphere”.

3. Studies of the dynamics of the core, core-mantle boundary and processes in the mantle

Xiaodong Song, extending his 1996 pioneering study with P.G. Richards, gave the latest evidence of a faster rotation of the inner core relative to the outer core and mantle.

Weijia Kuang discussed the interaction between the solid earth and liquid outer core, outlining a promising field of research that includes: (1) Influence of the relative rotation of the inner core on global gravity field variation, noting the inner core is in hydrostatic equilibrium with the solid mantle. Misalignment between the axes of the inner core (elliptical) and the solid mantle can result in gravity variations; and (2) The effect of non-hydrostatic pressure on deformation of the mantle. The non-hydrostatic pressure at the core-mantle boundary results from flow motions in the outer core and varies in space and time. The (inelastic) mantle responds to the pressure in the form of deformation.

Edward J. Garnero studied deep mantle structure of shorter wavelengths (100 – 1000 km) revealing a thin (5 – 50 km) ultra-low velocity zone (ULVZ) at the core-mantle boundary where compression and shear velocity waves may be reduced to 10 and 30 %. This ULVZ may represent a large magma chamber and a source of mantle plumes. Alternately, the ULVZ might be related to core-mantle reaction.

Fenglin Niu and Lianxing Wen researched the seismic structure of uppermost 100 km of the inner core and their results revealed a difference in seismic velocity and Q structure between “the eastern hemisphere” (40°E – 180°E) and “the western hemisphere” (180° W – 40° E), the ‘eastern’ having faster isotropic velocities and higher attenuation.

4. Other studies

L.M. Cathles, S.V. Cherkasov and N.A. Vishnevskaya have used deep seismic sounding, earthquakes and nuclear explosions to calculate convective models related to three episodes of igneous intrusions in the Yenisei Ridge metallogenic province of Siberia. They defined zones of seismic transparency in the vertical section, coinciding with zones of density variations, and defined places favorable for large gold concentrations.

Jeff Wynn and co-workers have demonstrated, with an example from southeastern Alaska, that a combination of ground and airborne geophysical data can be used to develop a matrix of geophysical signatures for geologic mapping and they used their method in difficult, inaccessible or covered areas to define lithological boundaries and zones favorable for the world-class mineral deposits.

V. Hanus J. Vanek and A. Spicak have demonstrated that metallic ore deposits in the continental wedges overlying convergent plate margins are not distributed randomly, but preferentially concentrated in a pattern of seismically active fracture zones.

A study of seismic anisotropy of the continental mantle lithosphere, performed by V. Babuska and J. Plomerova in the Bohemian Massif and the French Massif Central, has revealed major lithospheric domains with different seismic anisotropy. Suture zones, developed along the boundaries of these domains, partly rejuvenated, served as important pathways for the ascent of mantle fluids and volcanic activity.
Shear wave anisotropy, based on teleseismic data, which has been used in the study of upper mantle structure in the Tibet Plateau and neighboring regions (Mei Jiang et al.) indicated the possible presence of anisotropy materials at depths below the upper mantle.

S. Kravchenko and N. Kochneva reported success in mineral exploration in the Northern Siberian Platform by mapping mantle convection cell boundaries using seismic methods and finding ridges of up to 15 km high on the MOHO boundary.

C.B. Archambeau focused on the Basin and Range Province in the western United States, using gravity data, heat flow and crust-mantle seismic velocities, he found a correlation between the extent of low compression wave velocity zones, heat flow and Bouguer gravity anomalies to be indicative of partial melting in the upper mantle. The author calculated the depth of partial melting in the mantle, assuming that the continent is decoupled from the rest of the mantle at a depth of about 150 km and drifted over an ancient East Pacific Rise convective zone.

Two major metallogenic case studies were presented. Rongfu Pei showed a 3-D map of China illustrating how deep mantle roots were involved with the subsequent development of metallic zones having exceptionally large ore deposits. The other metallogenic study was by I. Kh. Khamrabaev, I. Sidorova and co-workers from Uzbekistan, they indicated a relationship between major ore deposits with deep lithospheric structure and, separately, the geothermal conditions in the super-large gold concentration at Muruntau.

**List of workshop papers**

[Titles as used in final submission for publication]

Jan Kutina (USA) & Rongfu Pei (P.R.of China): The role of deep lithospheric structures in the genesis and distribution of giant and super giant concentrations of metals in the crust. Review of the main data generated by the IGCP-354.

Thomas G. Hildenbrand & Byron Berger (USA): Regional structures related to mineral deposit clusters in western United States, based on magnetic and gravity interpretations.

S. Parker Gay, Jr. (USA): The use of regional, but detailed, aeromagnetic data to define the fault pattern in Precambrian basement, the plumbing system for mineral concentrations in the lithosphere.


Thomas G. Hildenbrand & Byron Berger (USA): Structural model for the Battle Mountain District based on magnetic and gravity interpretations.

Vladislav Babuska & Jaroslava Plomerova (Czech Republic): Major boundaries in the continental mantle lithosphere detected by seismic anisotropy and their role in accumulation of metals in the crust.


Mei Jiang, Hui Qian & Yingjun Ma (P.R. of China): Teleseismic anisotropy and corresponding features of the upper mantle in the Tibet Plateau and neighboring areas.


Xiaodong Song (USA): Inner core superrotation: recent observations and future challenges.

Fenglin Niu & Lianxing Wen (USA): Difference in seismic velocity between the eastern and western hemispheres in the top of the earth’s inner core.

Weijia Kuang (USA): Multidisciplinary studies of deep Earth: From geodynamo to geodesy.

Ed J. Garnero (USA): The structure of Earth’s dynamic deep mantle and core-mantle boundary region.

Paul D. Lowman, Jr. (USA): Terrane accretion vs. re-working: An evaluation based on geology of the Sudbury area.


L.M. Cathles (USA), S.V. Cherkasov & N.A. Vishnevskaya (Russia): Convective modelling based on geophysical imaging of deep crustal intrusions – A new foundation for mineral exploration?

Vaclav Hanus, Jiri Vaneck & Ales Spicak (Czech Republic): Deep lithospheric structure and hypogene metallogeny at convergent plate margins.


Jeff Wynn, Susan Karl, Bruce Smith, Anne McCafferty, & Jon Doucette (USA): Using ground and airborne geophysical methods to constrain geologic mapping, and identify new mineral prospective zones in southeast Alaska.
A.E. Egorkin (Russia): Upper mantle structure below the Siberian kimberlite field.
Friedemann Freund (USA): Electric charge carriers in crustal rocks and what they may tell us about the solid Earth.
A.A. Polikarpov & I.P. Sidorova (Uzbekistan): The heat conditions of Muruntau gold field’s interior, Kyzylkum desert, western Uzbekistan.
Jan Kutina & Jeff Grossman (USA): Geochemical health hazards above the intersections of orogenic belts by deep-rooted structural discontinuities, and in areas adjacent to orogenic belts: Example from the Appalachians.

Written contributions

Laurence Robb (South Africa): Time, episodicity and the generation of world class ore deposits.
Charles Archambeau (USA): Passive seismic tomography: 3D imaging in tectonically active regions.
Charles Archambeau (USA): A dynamic mantle-lithospheric interaction model for mature stage continental tectonics: Implications for the Basin and Range Province in the western U.S.
Gennady G. Kochmasov (Russia): Coherent structurization of Earth’s geospheres from core to atmosphere and lithospheric weakness zones favorable for concentration of metals.
S.G. Skolotnev & A.E. Fedorov (Russia): The cube features in the Earth’s structure.

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Contributed by Jan Kutina

Episodes - International Geoscience Newsmagazine

Episodes is the quarterly science and news journal of the International Union of Geological Sciences (IUGS). It focuses on the publication of results of scientific research and other information addressing issues of interest to the global earth-science community. Special emphasis is given to topics involving geological aspects of population growth and economic development and their resulting impacts on or implications for society. As the principal publication of the IUGS, Episodes also carries information about IUGS scientific programs and activities. Contributions of the following types of manuscripts are here solicited: 1 scientific articles 1 conference reports 1 news and views 1 letters to editor, book reviews 1 information on training courses (esp. those geared to participants from developing countries) 1 noteworthy new publications 1 including national or regional geologic maps. Episodes also invites photos or other images for the front cover. Photos must be of high technical quality and tell an interesting geological story. A colour transparency and one-colour print (at least 9 cm x 12.6 cm) are required for submissions, which should be supplemented with a short explanatory paragraph (no more than 100 words).

All IAGOD members are urged to support 'Episodes'. Guidelines for contributors are published annually and are always available at the IUGS web site: http://www.iugs.org/iugs/pubs/epiguide.htm. The annual subscription is US$24.00, which includes air-mail postage.

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The Joint 7th Biennial SGA-SEG Meeting
**24-28 August 2003, Athens, Greece**

The 7th Biennial SGA Meeting "Mineral Exploration and Sustainable Development" will be held in Athens, Greece (August 24-28, 2003). Athens is the historical capital of Greece, a scientific and cultural centre and the Host City of the Summer Olympic Games in 2004.

The meeting will be organized by the Society for Geology Applied to Mineral Deposits (SGA) in cooperation with the Institute of Geology and Mineral Exploration, Athens Technical University, University of Thessaloniki and Geological Society of Greece (Section of Economic Geology and Geochemistry).

Under the general theme "Mineral Exploration and Sustainable Development" the organizers would like to bring together economic geology scholars and professional exploration and mining geologists to discuss current issues on ore geology, exploration and sustainable development. Participants are kindly invited to offer papers for oral and poster presentations. There is an opportunity to have meetings and sessions of ongoing and planned Projects and Working Groups. Proposals for conveners and topics of sessions are welcome.

Several pre- and post-meeting field trips will be organized and the participants will have the opportunity to visit different metallogenic provinces of Greece and neighboring countries.

The first circular will be available under the following address: [www.igme.gr/sgaconference.html](http://www.igme.gr/sgaconference.html)

Contact address: 7th SGA Biennial Meeting, Secretary: Dr. Demetrios Eliopoulos, Institute of Geology and Mineral Exploration, 70 Messoghion Str., GR-115 27 Athens, Greece, Fax: 0030 - 1 77 73 421, e-mail: Eliopoulos@igme.gr

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**INTERNATIONAL SYMPOSIUM**

The organizing committee, representing the State Geological Survey of Ukraine and the National Academy of Sciences of Ukraine, in co-operation with the GEODE Program, has the pleasure to present the 2nd Circular of the International Symposium “Metallogeny of Precambrian Shields”

The Symposium will be held in Kyiv, Ukraine, on September 18 - 20th, 2002. The symposium will include technical and poster Sessions, a pre-symposium workshop as well as pre- and post-symposium field trips to mineral deposits of interest and typical bedrock complexes. The meeting is designed to create a forum for a broad debate on the most significant advances in the geology and metallogeny of Precambrian Shields.

**The second circular can be viewed at [http://www.geofuel.lviv.net/MISCEL/MPSsymp.htm](http://www.geofuel.lviv.net/MISCEL/MPSsymp.htm)**

For general enquiries including registration, accommodation and further program information please contact:

<table>
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<tr>
<th>Scientific Responsible Committee Member</th>
<th>Symposium Secretariat</th>
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<tbody>
<tr>
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32nd International Geological Congress, Florence, Italy, August 20-28, 2004
In collaboration with and under the sponsorship of the IUGS

From the Mediterranean toward a Global Renaissance
Geology, Natural Hazards and Cultural Heritage

The first circular for the next IGC is available on the website: http://www.32igc.org/

IAGOD have proposed several symposia and workshops, including:

SYMPOSIUM "Mineral deposits and tectonics of Central Asia".
SYMPOSIUM "Heterogeneous ore-forming systems: geological, fluid inclusion and physico-chemical evidence, genetic models and application to ore prospecting".
SYMPOSIUM "Metamorphosed and metamorphogenic ore deposits - The role of metamorphic fluids" (WGOM)
WORKSHOP "Super Accumulation of Metals in Lithosphere" (CTOD)

More details in the next newsletter.

Report of the IAGOD National Group of Kyrgyzstan for 2001

Chairwoman: Rosalia J. Jenchuraeva (Corr.Member of NAS, Prof., Institute of Geology National Academy of Sciences, 30 Erkindik, 720481 Bishkek, Kyrgyzstan; tel. 996 (312) 66 26 80; Fax: 996 (312) 62 00 47; E-mail: djam@freenet.kg; rodjen@netmail.kg;

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Kim, Vlas (KMMI),
Litvinov, Pavel (KOC),
Maksumova, Rena (IG NAS),
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Recent papers:

INVITATION

The 2004 Interim IAGOD Conference presents an opportunity to bring together the geologists from all over the world in Vladivostok, one of the major cities of the Russian Far East. This area known for its tremendous mineral wealth ranks among the most geologically interesting territories of the Russian Federation, whose geological history has been conditioned by the interacting Pacific and Eurasian plates. Ancient geological structures of Asia and young structures of the Pacific Belt, that is the transit zone from continent to ocean, are present here.

The proposed program comprises pre- and post-conference field tours, scientific and social programs, rock, map, and publication displays, and trade exhibition. The program presents an opportunity for delegates to visit several famous large and unusual ore deposits of the Russian Far East and Pacific Rim.

FIELD EXCURSIONS

**Trip 1**: Dalnegorsk ore district: polymetallic (Pb, Zn, Ag) and boron skarns, tin-sulfide veins, and coastal belt granitoids. (Details: accommodation at a hotel in Dalnegorsk-town, 35 people, bus or plane (?) transportation).


**Trip 3**: Geology, magmatism, and gold deposits of South Primorye (Sergeevka) (Details: accommodation in the city of Nakhodka or at «Avangard» camping area, 35 people, bus transportation).

**Trip 4**: Gold deposits of the Russian Northeast "Kolyma Golden Ring" (Details: accommodation in the city of Magadan, 25 people, plane transportation).

**Trip 5**: Konder deposit: alkali-ultrabasic rocks of the Konder intrusion and the related platinum and gold placers. (Details: accommodation in Nelkan or Konder villages, 25 people, plane transportation).
International Union of Geological Sciences

The International Union of Geological Sciences (IUGS) is one of the largest, non-governmental, non-political, and non-profit making scientific organizations in the world. It addresses earth-science problems of broadly international scope through its own activities and those co-sponsored with other agencies. IUGS encourages the highest levels of international co-operation and participation in its activities, many of which deal increasingly with the Earth and human welfare. Since its founding in 1961, IUGS has been a member of ICSU (International Council for Science, http://www.icsu.org).

Activities

IUGS undertakes day-to-day work through its Commissions, Subcommissions, Task Groups, Joint Programs and its Initiatives. The Union is the scientific sponsor of the quadrennial International Geological Congress and advises and assists the organizers in formulating the scientific program for this event.

Commissions and their component subcommissions address topics requiring long-term study. Existing Commissions include Environmental Planning, Global Sedimentary Geology, History of Geological Sciences, Igneous and Metamorphic Petrogenesis, the handling of Geoscience Information, Stratigraphy, Systematics in Petrology, Geological Education and Training, and Tectonics.

Task Groups deal with topics needing immediate action or short-term studies. They are appointed directly by the Union and deal with: Decay Constants in Geochronology, Global Geosites, Global Continental Geochemical Baselines, Fossil Fuels and Public Affairs.

Joint Programs are sponsored by IUGS and other organizations. Existing programs in collaboration with UNESCO are: the International Geological Correlation Programme (IGCP), Geological Applications of Remote Sensing, and Mineral and Energy Deposit Modelling. The ICSU Scientific Committee on the Lithosphere (SCL) was born as an inter-Union initiative between IUGS and the International Union of Geodesy and Geophysics.

Two new Initiatives were established by the IUGS Executive Committee in 2002: The Initiative on Medical Geology, and the Initiative on Geoindicators.

Accomplishments of IUGS

As the broadest ranging international forum for the geological sciences, IUGS has established an effective and highly respected global network for communicating across disciplines, across political and geographical boundaries, across levels and gaps of knowledge. This has led to countless examples of improved resolution of scientific problems, establishment of better standards and techniques, more enlightened definition of fields requiring future scientific inquiry - in short, the strengthening of the scientific base on which geological research rests and without which geoscience cannot be effectively applied toward improving human welfare.

Find out more on http://www.iugs.org

IUGS Executive Committee (2000-2004)

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IAGOD COMMISSIONS & WORKING GROUPS

Commission on Tectonics of Ore Deposits (CTOD)

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Working Groups of CTOD

WG1: Global Tectonics & Metallogenesis
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Secretary: Peter LAZNICKA
Vice-Chairman: D.V. RUNDQVIST (Russia)

WG2: Structure of Ore Fields & Ore Deposits (currently inactive)

WG3: Statistical Treatment of Tectonic & Mineral Deposit Data (currently inactive)

WG4: Tectono-Magmatic Activation (DIWA)
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V.G. MOISYENKO (Russia)
Yukinori FUJITA (Japan)

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IAGOD Newsletter 2002

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Commission on Ore-Forming Fluids in Inclusions (COFFI)
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Vice Chairman: Ronghua ZHANG,
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Secretary: Joseph BRISKEY
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WG1: Working Group on Physical Chemistry (currently inactive)

WG2: Working Group on Isotope Geochemistry (IGWG)
Chairwoman Secretary
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Secretary: Natalia G. PATYK-KARA, also IGEM RAS, identical phone and fax numbers; e-mail: pkara@igem.ru.

Vice-Chairman: Jan KRASON, USA.

Commission on Thermodynamics of Ore Forming Fluids
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Djamila Aitmatova, (Inst. Physics & Rock Mechanics NAS), Bakirov, Apas (IG NAS), Bogdetsky, Valentin (CVP), Kabaev, Omorkul (MRI), Kim, Vlas (KMMI), Litvinov, Pavel (KOC), Maksumova, Rena (IG NAS), Nataly Maluyukova (Kyrgyz Mining and Metallurgical Institute, Bishkek), Alexander Mikolaichuk (Inst. of High Temp, Russian Acad. of Sc., Bishkek), Valentin Nikonovor (State Agency on Geology and Mineral Resources of Kyrgyz Republic, Bishkek), Kubat Osmonbetov (Kyrgyz Mining and Metallurgical Institute, Bishkek), Nikolay Pak (Institute of Geology National Academy of Sciences, Bishkek), Orunbay Shamshyev (Osh Technic Univers., town Osh), Gennady Savchenko (State Agency on Geology and Mineral Resources of Kyrgyz Republic, Bishkek), Sorokin, Timofey (Institute of Geology National Academy of Sciences, Bishkek), Vitaly Stavinsky (Kyrgyz Mining Association, Bishkek), Iskander Turdueev (Institute of Geology National Academy of Sciences, Bishkek), Iltyzar Usmanov (Institute of Geology National Academy of Sciences, Bishkek), Viktor Yakimov (ME&ES), Alexander Yarkov (“Kyrgyz Altyn” State Concern, Bishkek), Tourat Usubaliev, (Kumtor Operating Company, Kumtor Mining).

IAGOD National Group of Georgia (6 members)
Chairman: Dr. Ramaz R. Migineishvili (Geological Institute of Academy of Sciences, Erkindik 30, 380093 Tbilisi. Tel. (home): 995-32 393596; e-mail: ram_migi@yahoo.com).
Dr. Vaja I. Buadze (Tbilisi), Prof. Vladimir I. Gugushvili (Tbilisi), Prof. Sergo A. Kekelia (Tbilisi), Dr. Maren A. Kekelia (Tbilisi), Prof. Alexander G. Tvalchrelidze (Tbilisi).

IAGOD National Group of Mongolia (33 members)
IAGOD National Group of Mongolia: Chairwoman: Prof. Ochir Gerel (Mongolian University of Science & Technology, S. Dandar (secretary, MUST), L. Khambasuren (MUST), S. Dashdavaa (MSU), Sh. Batjargal (MUST), G. Dejidmaa (Geol. Inform. Center). N. Amitan, (Togs Buiant Ltd); D. Bat-Ulzii (MUST), J. Ganbold (Mong. Acad Sci, IGMR), B. Delgertsogt (Geoinformation Center), B. Munkhtsengel (MUST), Sunjimdmaa (Mineral Resources Authority of Mongolia), M. Todbiileg (MUST), D. Sharchhuukhen (M & Diamond Ltd), D. Altankhuyag (MRAM), A. Tsed-Ayush (M & Diamond Ltd). A. Gotsosuren (Mongol Gazar Ltd, Mongolia) B. Batkhishig (Tohoku University, Japan), O. Chuluun (Mineral Resources Authority of Mongolia), D. Batbold (MRAM), D. Bold-Erdene (Mineral Resources Authority of Mongolia), H. Gantumur (MRAM), B. Chuluun (Mineral Resources Authority of Mongolia) and S. Oyungerel (MSU), G. Ukhna (MUST), O. Chuluun (Mineral Resources Authority of Mongolia), D. Batbold (Mineral Resources Authority of Mongolia), D. Bold-Erdene (Mineral Resources Authority of Mongolia), Kh. Gantumur (Mineral Resources Authority of Mongolia), B. Chuluun (Mineral Resources Authority of Mongolia), H. Enkhtuvshin (Harrods Minerals Mongolia Ltd.), S. Oyungerel (National University of Mongolia, Faculty of Earth Science, Dept. of Geology & Mineralogy), G. Ukhna (Dept of Mineral Exploration, MUST).
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Bystrica), Kněsl, Juraj (B. Bystrica), Michálek, Jozef (Bánská Bystrica), Radovan, Martin (Spišská Nová Ves), Rojković, Igor (Bratislava),

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**IAGOD National Group of Tajik Republic** (9 members)
Chairman: Dr. Vladislav E. Minaev (P.O. Box 198, Dushanbe 734025, Tajikistan; tel: +992 372 243658; fax: +992 372 510037; e-mail: geol@ac.tajik.net, minaev@cada.tajik.net)
Bahtdavlatov, Rahmonbek D. (FHA); Djangiev, Azim I. (MIMB); Hudobakhsheva, Sharifa (KSU); Volnov, Boris A. (TGG); Lutkov, Valery S. (GI TAS); Matveeva, Irina N. (GI TAS); Minaev, Vladislav E. (GI TAS); Revazov, Boris A. (GI TAS); Fayziev, Abdoulkhak R. (GI TAS).
Explanations: FHA: Focus Humanitarian Assistance, Dushanbe-Khorog; GI TAS: Geological Institute of the Tajikistan Academy of Sciences, Dushanbe; KSU: Khorog State University, Khorog; MIMB: Ministry of Industry, Mining Branch, Dushanbe; TGG: Tajikglavgeologia, Dushanbe.

**IAGOD National Group of Uzbekistan** (15 members)
Chairman: Prof. Bahtiar Isakhodaev, Tashkent (mineral@cu.uz)
Vice.Chairman: Prof. I. Golovanov, (Tashkent) (im_golovanov@yahoo.com)
Antonov, A.E. (Tashkent), Babajonov, A.A. (Tashkent), Babayev, K.L. (Tashkent), Divaev, F.K. (Tashkent), Djuraev, A.D. (Tashkent), Islamov, F. (Tashkent), Juraev, A. (Tashkent), Kozlov, V.V. (Tashkent), Mansurov, M.M. (Tashkent), Pankratyev, P.V. (Tashkent), Savchuk, Y.S. (Tashkent), Shayakubov, T.S. (Tashkent), Smirnova, S.K. (Tashkent)

IAGOD Council invites also other national groups to join IAGOD!

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**Report on activity of IAGOD CTOD WG5**

“Remote Sensing Methods for Tectonic and ore Prospecting” during 2001

Discussions and workshop meetings
Scientific reports of WG5 members and colleagues:

1. 5th International Conference “New ideas in the Earth’s Sciences”, Moscow, April 2001:
Antipov V.S., Danilov V.V., Klepikov A.S.: Infrared anomaly detected by satellite mapping around copper ore district in Southern Ural.


3. 15th International Airborne Remote Sensing Conference and Exhibition, San Francisco, California, September 2001:

Surin V., Popova T. Antipov V.: Possibilities of the field photometry method for a study of burnt areas.


Turchenko S.I., Vostroknutov E.P., Brusnichkina N.A.: Computer prognoses of PGE mineralization on a base application of expert system to remote sensing data.
Antipov V.S.: On perspectives of geological remote sensing detection and evaluation of oil, gas, and ore potential resources in Uzbekistan Republic.

5. Bilibin’s memory lectures. St.-Petersburg University, November 2001:


6. 8th International Mining-Geological Forum “Natural resources of FSU countries”, November 2001, St.-Petersburg, Russia:

Turchenko S.I., Vostroknutov E.P., Brusnichkina N.A.: Computer modeling of platinum ore clusters within black shale riftogenic formation by using of expert system and remote sensing data.

Plans and special research for 2002 and next year are:

1. Special section of research: Remote sensing application to regional geological and metallogenic studies, monitoring and environment protection.
2. Developing of Internet-telecomunicative technology using of remote sensing data NOAA AVHRR and MODIS for mineragenic prognoses.
3. Creation of structural-geological remote sensed models of the metallogenic taxons for Pt, Au, Cu, and Ni-Cu deposits.
4. High-level education program: seminars and learning of modern methods of the computer processing remote sensing data for geological mapping and ore deposits prognoses.

Abstract


Pertsov A.V, Antipov V.S., Galperov G.V., Turchenko S.I. Remote Sensed Institute for Geology (NIKAM), St.-Petersburg, Russia

Structural deciphering of space image, that have been composed from NOAA AVHRR images of EROS Data Center within spectral bands at 580-680 and 720-1100 nm, of the territory of Russian Federation (RF) allowed to reveal transregional, partly global, deep-rooted lineaments extending from 3000 up to 8-10 thousands km in latitude, longitude and diagonal directions over Russian territory and neighboring countries. These lineaments suggest significant heterogeneity of upper crust, its also approach to deep lithosphere layers and were inheriting from position of old fault-lineament systems which origin were linked with tectonic processes evolved over Precambrian to Paleocene. Some of these structural discontinuities are poorly expressed in surface geology, but can be detected by magnetic and gravity anomalies. The lineaments, when projected over surface geological frame, extend across boundaries of crustal blocks, modern stress provinces or across allochtonous and folded terranes. The distribution of lineaments in RF territory is uneven: maximum concentration of complex
constructed combinations of differ directed lineaments are observed within sector limited by 80-140°E (region of East Siberian plate and its folded frame) in compare with East European and West Siberian plates. Besides, latitudinal global lineaments are typical for Russia within Northern hemisphere limited by 60-64°N, which can be similar to 38-24°S known in USA and Australia (Kutina, 1999).

The mentions lineaments can be correlated with global system of upper crustal stretching caused by age-long earth’s rotation and accordingly fluctuations of deep geospheres rotation. The existence of transregional lineaments, possible touching sublithospheric mantle horizons, can be explain by an uplift of seismic low-speed high-temperature masses come from core/lower mantle boundary which in one’s turn caused upwelling of giant streams - plums of hot lower mantle substance. These phenomena are fixed by global seismotomographic investigations, which show the role of mantle convective cells and possible motions of lithospheric plates over latter as well as the role of such “mantle-rooted” channels in metallogenesis. That kind geodynamic approach can explain coinciding of large and superlage concentration of metals as mineral deposits (heterogeneous in genesis, mineral substance and age of forming from Precambrian to Paleocene) to the ore clusters located within places of the crossing transregional lineaments differ directions. More then 30 such kind mineral deposits (Au, Ag, Pt, REE, U, Sn, Pb, Zn, Cu, Ni, Cr, Fe and diamonds) of Russia and some neighboring countries are overviewed in presented investigation.


**Contributed by S. Turchenko (Secretary WG5 CTOD)**

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The next IAGOD newsletter will be published in the Spring of 2003

All contributions are welcome!
Please send to Nigel Cook (Nigel.Cook@ngu.no)
by 15th March 2003 at the latest
Join IAGOD

IAGOD MEMBERSHIP BENEFITS

- Participation in an international association focussing on ore deposits studies
- Work in the IAGOD Commissions and Working groups
- Preference and reduced registration at IAGOD symposia, workshops and meetings, and at IAGOD co-sponsored congresses
- the annual IAGOD newsletter
- member discounts on IAGOD publications

Institutional members may order copies of the IAGOD fieldguide books and monographs produced under the auspices of the IAGOD Council at the same conditions as individual IAGOD members (excludes Proceedings volumes published by E. Schweizerbart'sche Verlag)

Institutional members can delegate their geologists and experts at the same conditions as individual members to participate in IAGOD field meetings and excursions

For further information on IAGOD membership, contact:

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