



THE GAWDUS

Mineral Deposits Division Geological Association of Canada No. 18 March 1984

MESSAGE FROM THE CHAIRMAN

As you can see in the pages that follow, the Mineral Deposits Division remains a thriving, active group within the geological community at large. Amongst its many activities, I will take the opportunity of commenting on two that represent a subtle shift from established MDD directions.

Late last year, the MDD was approached by Dr. A. Sutherland Brown, Chief Geologist, Geological Branch Mineral Resources Division of B.C. Ministry of Energy, Mines and Petroleum Resources to appoint a member to the new Technical Liaison Committee being formed to give direction and support to the Geological Branch. The concept for this committee arose from discussions between the Committee of Provincial Geologists and the Mineral Exploration Liaison Committee (MELC), a recently formed group being chaired by Dr. J.A. Coope, Past Chairman, MDD. Mr. Robert S. Hewton, Vice-Chairman of the MDD and organizer of the successful field trip to Nevada last October, has agreed to serve as the MDD representative on this committee.

One main objective of the Committee is to provide an efficient link between the exploration industry and the Geological Branch of the BCMEMPR. There is no doubt of the important role that the various provincial surveys can play in stimulating activity within the exploration industry and in improving its operational efficiency. It is hoped that the Technical Liaison Committee achieves its objective in establishing effective communication between these two groups at a time when both require each other's support and direction. The MDD is always ready, as it should be, to respond to requests of this nature in order to establish or improve the liaison between different groups concerned with the Minerals Industry. Geological surveys of other provinces could well examine British Columbia's lead in this matter and determine whether formation of a comparable group in their province could be to their benefit.

The second item I would like to mention is the sponsorship by the MDD of the International Symposium on Sedimentary Copper Deposits being planned for Toronto in 1985. You may wonder "Why copper?", given the depressed state of the industry at the present time. However, this Symposium intends to focus on much larger questions than the occurrence of these deposits, a topic which will be addressed by authors discussing important examples around the world. It is the intent of the Organizing Committee to consider the broader questions of basin framework and evolution, sediment dewatering processes and controls, the physical and chemical constraints placed by the above on release, transport and precipitation of potentially economic cations. Although these topics focus on sedimentary copper deposits,

the principles apply to a much broader spectrum of deposits.

Not only does the Organizing Committee, co-chaired by Dr. J.A. Coope and Dr. A.J. Maldrett, plan an ambitious technical program, but self-financing field trips are also being planned to significant North American localities and to the famed Lubin district in Poland.

To successfully organize and host a symposium of international scope requires not only the organizational and planning efforts of the Organizing Committee, but also the talents and enthusiasm of many others. The Organizing Committee will be contacting people to help in a variety of ways. Any member who wishes to be involved can contact either of the Co-Chairmen who would welcome hearing from you -- successful meetings of this scope do not happen by themselves.

In closing, I would like to remind you of the forthcoming Annual Meeting of the GAC to be held in London, Ontario May 14-16. The MDD is sponsoring two sessions: The Role of Organisms in Ore Deposition (organizers R.W. MacQueen and J.A. Coope) as well as Gold in Iron Formation Sequences (organizers R.J. Shegelski and A.J. MacDonald). The annual MDD meeting and luncheon is scheduled for Wednesday, May 16, 1200-1400. The Conference promises to be a good one. Hope to see you there.

J.A. MacDonald

MDD EXECUTIVE ELECTIONS: Call for Nominations

The Nominating Committee welcomes all MDD members to submit nominations for all positions on the Executive Committee for 1984-85. The positions include Chairman, Vice-Chairman, Secretary, Treasurer, Program Chairman and Publications Chairman plus three Directors for the period 1984-1987. Those members interested in participating in the many MDD activities (field trips, symposia, publications, short courses, newsletter, etc.) on the organizational side should submit their nominations, supported by three MDD members, before April 4, 1984 to:

A.C. Colvine, Chairman,
MDD Nominating Committee,
Ontario Geological Survey,
900 - 77 Grenville Street
Toronto, Ontario M5S 1B3

ROBINSON VISITING LECTURESHIP: Nominations

The GAC Council has approved the Robinson Visiting Lectureship. Recipient's travel expenses will be defrayed by the Howard Street Robinson Fund, established to further the studies of Precambrian and mineral deposits geology in Canada. After some dis-

cussion, Council has stipulated that the recipient of the Lectureship will normally be a young (under forty years of age) Canadian geologist.

The Lectureship will be awarded by the Mineral Deposits and Precambrian Divisions of the GAC in alternate years. The MDD will award the first Lectureship. Suggestions for a suitable recipient should be forwarded, by April 30, 1984, to either of:

J.A. MacDonald Esso Resources Canada Ltd. 600-1281 W. Georgia St. Vancouver, B.C. V6E 3N6	J.A. Coope Newmont Exploration of Canada Ltd. 33 Yonge St., Ste 370 Toronto, Ont. M5E 1T2
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PUBLICATIONS

The Economic Geology Special Issue on Canadian Ore Deposits is scheduled for publication in August, 1984. Editors of the MDD-supported volume W.J. Wolfe, A.J. Sinclair and D.F. Strong have released the following final list of titles and authors:

1. Geology and Geochemistry of the Chu Chua Massive Sulphide Deposit, British Columbia
P. Aggarwal and B.E. Nesbitt
2. Copper-Zinc Deposits Associated with Basic Volcanism, Goldstream Area, Southeastern B.C.
T. Høy, G. Gibson and N.W. Berg
3. The Logtun Large Tonnage, Low Grade W. (Scheelite)-Mo Porphyry Deposit, South-Central Y.T.
S.R. Noble, E.T.C. Spooner and F.R. Harris
4. Geology, Mineral Equilibria and Isotope Studies of the McDame Tungsten Skarn Prospect, North-Central British Columbia
B.J. Cooke and C.I. Godwin
5. Fracture-Controlled Antimony-Quartz Mineralization, Lake George Deposit, New Brunswick: Mineralogy, Geochemistry, Alteration and Hydrothermal Regimes
R.B. Scratch, G.P. Watson, R. Kerrich and R.W. Hutchinson
6. Mineralogy and Petrology of Iron Skarns in Western British Columbia, Canada
L.D. Meinert
7. Genesis of the St. Lawrence, Newfoundland Fluorspar Deposits as Indicated by Fluid Inclusion, Rare Earth Element and Isotopic Data
D.F. Strong, B.J. Fryer and R. Kerrich
8. Hypogene Alteration at the Berg Porphyry Copper-Molybdenum Property, North-Central B.C.
D.R. Heberlein and C.I. Godwin
9. Oxygen Isotopic Geochemistry of the Sullivan Massive Sulphide Deposit, Kimberley, B.C.
B.E. Nesbitt, F.J. Longstaffe, D.R. Shaw and K. Muehlenbachs
10. Mixing Line Isochrons: A New Interpretation of Galena Lead Isotope Data from Southeastern B.C.
A. Andrew, C.I. Godwin and A.J. Sinclair
11. The Macassa Mine Archean Lode Gold Deposit, Kirkland Lake, Ontario: Geology, Patterns of Alteration and Hydrothermal Regimes
G.P. Watson and R. Kerrich
12. Geology and Mineralization at Equity Silver Mine, Houston, British Columbia, Canada
J.B. Cyr, R.B. Pease and T.G. Schroeter

13. Equity Silver Silver-Copper-Gold Deposit: Alteration Fluid Inclusion Studies
P.J. Wojdak and A.J. Sinclair
14. Genesis of Paleokarst and Stratabound Zinc-Lead Sulphide Deposits in a Proterozoic Dolostone, Northern Baffin Island, Canada
R.A. Olsen
15. The Cantung E-Zone Scheelite Skarn Orebody, Tungsten, Northwest Territories: A Revised Genetic Model
G.A. Mathieson and A.H. Clark
16. Pine Point Orebodies and their Relationship to the Stratigraphy, Structure, Dolomitization and Karstification of the Middle Devonian Barrier Complex
D. Rhodes, E.A. Lantos, J.A. Lantos, R.J. Webb and D.C. Owens
17. Geologic, Fluid Inclusion and Stable Isotope Studies of the Gays River Lead-Zinc Deposit, Nova Scotia, Canada
S. Akande and M. Zentilli

MDD SYMPOSIA

GAC/MAC London '84: May 14-16

The MDD has sponsored two Special Sessions at London '84: 'The role of organisms and organic matter in ore deposition', organizers R.W. Macqueen and J.A. Coope; and 'Gold in iron formation sequences', organizers R.J. Shegelski and A.J. Macdonald.

In addition, the Technical Program contains other events of interest to the mineral deposits geologist - a symposium 'Geochemistry of mineral deposits' organizers R. Kerrich and M.E. Fleet; a Special Session 'Sudbury geology', organizers B.O. Dressler and W.V. Peredery; and several field trips: 'Industrial minerals of southwestern Ontario', May 11; 'Geology of the Sudbury and Elliot Lake mining camps', May 10-13; 'Geology, silver and gold deposits, Cobalt and Kirkland Lake', May 7-12; and 'Surface geology and volcanogenic base metal sulphide deposits and gold deposits of Noranda and Timmins', May 17-23.

The MDD Annual Luncheon will be held in the Commonwealth Ballroom Centre of the Holiday Inn Tower, at 12:00 noon Wednesday, May 16. The Luncheon will be followed immediately by the MDD Annual Meeting. Reports will be given by your outgoing executive, and the incoming Executive Committee will be introduced. New business from the floor is welcomed.

International Symposium on turbidite-hosted gold deposits: Fredericton '85

A symposium jointly sponsored by the GAC Mineral Deposits Division and the Provincial Geologists' Committee on "Turbidite-hosted Gold Deposits" will be held at the May 1985 GAC/MAC Annual Meeting in Fredericton, New Brunswick.

The symposium is international in scope involving papers on deposits in Australia, New Zealand, Africa and North America. This will include current ideas on both historically important mining camps (e.g. Victoria and Meguma goldfields) and recently discovered deposits. The intent of the meeting is to document the different types of turbidite-hosted gold deposits and to evaluate both syngenetic and epigenetic models of deposition, including structural and chemical controls and the concept that the

present distribution of gold may result from poly-genetic processes.

The technical sessions will concentrate on deposit descriptions, regional setting and sedimentary facies, structural analysis, petrology and phase equilibria, rock and isotope geochemistry and geothermometry.

About 75 per cent of the presentations are by invited speakers. Prospective authors are asked to submit abstracts by October 1984. Authors are required to submit manuscripts by January 1, 1985, for review prior to the symposium. Papers will be published in a special symposium volume.

Co-organizers of the symposium and special volume are Professor Simon Haynes of Brock University, St. Catharines, Ontario L2S 3A1, and Dr. Duncan Keppie of Nova Scotia Department of Mines and Energy, P.O. Box 1087, Halifax, Nova Scotia B3J 2X1. Inquiries should be addressed to either Dr. Haynes or Dr. Keppie.

FIELD TRIPS

Detour Lake, May 1984

The GAC Mineral Deposits Division and the Toronto Geological Discussion Group are planning a one-day field trip to Detour Lake for May 1984. Tentative plans are to leave Toronto by charter aircraft and return the same day. Although details have yet to be confirmed, those interested in attending please write to:

Mr. Ray Goldie
Richardson Greenshields Canada Ltd.
130 Adelaide St. West
Toronto, Ontario M5H 1T8

1985 Japan Field Trip - 2nd Announcement

Planning of the JAPAN FIELD TRIP is continuing, with probable trip dates of April 13-27, 1985. The trip schedule is being organized by Dr. Tetsuro Urabe, University of Tokyo, and will try to include visits to Kuroko, skarn, Besshi, epithermal and hot spring deposits. The MDD has invited the Society of Mining Geologists of Japan to assist in this endeavor and MDD will organize a reciprocal trip in western Canada for SMGJ.

The total cost for the trip, which includes transport, accommodation and breakfast-lunch meals, is estimated at CAN \$2500 round trip from Vancouver. Participants from elsewhere in North America could take advantage of group "add-on" fares. Some may wish to extend their Japan visit or travel to other points.

Fifteen geologists have registered for the trip; space is available for approximately 20 more participants.

For further information contact Jeff Franzen, Billiton Canada Ltd., 460-601 West Cordova Street, Vancouver, B.C., V6B 1G1, Telephone (604)669-5535.

CONFERENCE REPORTS

Computer Applications in Mineral Exploration, 1984

The first of a new type of conference, on Computer Applications in Mineral Exploration, was attended by five hundred and twenty-six delegates on January 9-11, 1984, at the Sheraton Centre, Toronto, Canada. The meeting was jointly sponsored by the Toronto Geological Discussion Group, the Toronto Branch of the CIM, the Canadian Exploration Geophysical

Society, the Mineral Deposits Division of the GAC and the Association of Exploration Geochemists. The computer theme provided common ground to unite the geologists, geochemists and geophysicists in a technical meeting and an environment for discussion and interchange that has not been generally attainable elsewhere.

The objectives of the conference were to allow members of the exploration community the opportunity to become familiar with the computer facilities presently available both in-house and through service organizations. While a day-and-a-half of excellent talks were presented, primary emphasis was given to two days of displays and hands-on demonstrations prepared by various service companies and government organizations.

Attendees included 35 exhibitors, 475 delegates and 50 students. The high attendance in general and the presence of representatives from the U.S.A., Europe, Australia and South America attests to the timeliness of the conference theme. The Organizing Committee - Dave Jones, Sandy Colvine, Pat Sheahan and Victor Wierzbecki, under the Chairmanship of Terry Bottrill - are to be congratulated for their foresight and organizing abilities and thanked for their efforts in arranging the well accepted conference.

Topics covered in the technical sessions were:

1. Bibliographical and information databases
2. Satellite imagery processing
3. Geophysical field techniques
4. Data presentation - graphics
5. Geochemical techniques and processing
6. Geological modelling, integrated systems

The general conclusions of the conference, to which most speakers made some reference, were:

1. There are many ways to computerize a company.
2. Successful computerization requires a clear idea of the tasks that are to be handled by the computer and the availability of software to handle the tasks set.
3. Only after determining the availability and applicability of software should criteria for the hardware be considered.

It is clear that CAME 1984 was a successful attempt to keep the exploration community abreast of advances in computer software and hardware. Exposure to the range of services presently available was appreciated by everyone. The efforts of the speakers and exhibitors are acknowledged with thanks.

Copies of the seventy-six page Program and Extended Abstracts volume are available for CAN \$10.00 (prepaid, postage and packing included) from:

Patricia Sheahan
Konsult International Inc.
44 Gemini Road
Willowdale, Ontario M2K 2G6

At the present time the Organizing Committee is considering suggestions for a similar meeting in 1985, possibly in Vancouver, and probably again in Toronto in 1986. Your comments to members of the Committee would be welcome.

Neil Gow

Mineral Deposits of the Northern Cordillera, Whitehorse, December 5-7, 1983

The symposium 'Mineral deposits of the northern Cordillera' was the highly successful outcome of discussions between officers of the MDD and the CIM

Geology Division initiated in the spring of 1981. Both groups recognized the need to provide a forum for and to publish the recent advances in geological knowledge of northern Cordilleran mineral deposits.

The initial organizers V.F. Hollister (MDD) and W. Petruk (CIM) welcomed the generous offer of J.A. Morin of the Exploration and Geological Services Division of Indian and Northern Affairs Canada to host and locally organize the symposium in lieu of their 1983 Geoscience Forum. Jim Morin served as General Chairman and headed up a Program Committee of J.G. Abbott (INA), I.A. Paterson (Cominco) and W.D. Sinclair (GSC) that assembled an outstanding group of speakers on a broad range of geological subjects.

The uniformly high quality of presentations in part reflected the structuring of sessions around several deposit types and selection of authors who could call upon several years of accumulation of exploration data to give either authoritative review papers or in-depth descriptive treatments of specific deposits. Deposit types covered in this manner included shale-hosted PbZn deposits of Anvil and Howards Pass districts, stratiform PbZnAgBa deposits at Macmillan Pass and Cirque, barite deposits, coal measures, Mo, W and Sn deposits, and lode Au-Ag deposits. The papers benefitted not only from the authors' obvious expertise, but also from their preparation of the topics as manuscripts for publication as a CIM Special Volume.

The six half-day sessions were very well attended by the two hundred and twenty delegates, including a poster session supported by most authors which encouraged a spirited exchange of ideas.

The social events, under Social Chairman Kate Grapes (INA) maintained the tradition of Whitehorse hospitality. The conference banquet was addressed by CIM President Peter Young and his wife Patricia, INA-Yukon Director of Mineral Resources A.C. (Cam) Ogilvie, and Director-General, Northern Affairs Program-Yukon Murray Morrison. Delegates had two opportunities to soak and socialize at Takhini Hot Springs, plus participate in hockey, cross-country skiing and raquetball.

The success of the meeting was due largely to the untiring efforts of Jim Morin and Kate Grapes. The excellent cooperation between the GAC, CIM and INA in organizing this symposium indicates that similar joint ventures will be undertaken in the future.

Ken Dawson

Cordilleran Geology and Mineral Exploration - Status and Future Trends

GAC Cordilleran Section Symposium, Vancouver, February 20-21, 1984

The annual symposium of the Cordilleran Section departed from its traditionally thematic approach to Cordilleran geology to take stock of our current knowledge and to examine some concepts that are likely to influence geology and mineral exploration in the future.

Cordilleran Section President R.I. (Bob) Thompson brought together a diverse and stimulating group of authors whose twenty papers dealt not only with the concepts that have enhanced our present understanding of Cordilleran geology and metallogeny, but also with ideas, trends and constraints that probably will affect its future.

The keynote address by J.O. Wheeler, one of four excellent papers on tectonics, set the symposium theme with a re-examination of the Columbian and

Pacific Orogens in light of terrane tectonics. G.A. Davis traced the evolution of Cordilleran structural concepts from Warren Hamilton's landmark 1969 paper on accretionary processes in California to the interpretation of current COCORP seismic profiles.

Two papers on metallogenesis of accreted Cordilleran terranes by K.M. Dawson (Canadian Cordillera) and W.J. Nokleberg and others (Alaska) emphasized the classification of mineral deposits as pre-, syn- or post-accretion of the host terrane. A third paper on metallogeny, by A. Panteleyev and T. Hoy, reviewed recent advances in metallogenic interpretation of Cordilleran deposits.

Of the nine outstanding mineral deposits papers, probably greatest interest was generated by descriptions of three recent discoveries: Windy Craggy CuCo massive sulphide by J.B. Gammon and T.E. Chandler, the Red Dog stratiform PbZnAgBa deposit by R. McMichael and others, and the Tillicum Au skarn by W. Roberts and J. McClintock. The beneficial influence of genetic deposit modelling and current plate tectonic theory was evident in most of the mineral deposit papers.

In a notably prognosticative paper, B.J. Skinner focussed on recent advances and perceived limitations in geochemical and geophysical exploration, and predicted future exploration success with biogeochemistry, vapour geochemistry, downhole geophysics, deep seismic surveys and deep drilling.

A well received pre-symposium short course was given by K.R. McClay of the University of London, the Cordilleran Section's first Charlie Noy Visiting Lecturer. The one-day course taught the application of structural geology to the interpretation of stratiform shale-hosted base metal deposits.

The highlight of the social program was an entertaining illustrated lecture by Lloyd 'Kiwi' Gallagher, Deputy Leader of the Canadian Mount Everest Expedition. A presentation of a handbag was made to Miss Mary Akehurst of the GSC by President Bob Thompson in recognition of her service to the Section. The three hundred delegates went away informed and stimulated by another high quality Cordilleran Section symposium.

Ken Dawson

ANNOUNCEMENTS

Annual Meeting of the Newfoundland Branch, GAC: April 5 and 6, 1984

The Newfoundland Branch of the GAC is holding its Annual Meeting in St. John's, April 5-6. The theme of this year's meeting is "Volcanoes and their Ores: A Newfoundland Perspective". The program includes a half-day session on modern sea floor hydrothermal systems and associated massive sulphide deposits. At the request of MDD members in St. John's the MDD is sponsoring Dr. John Edmunds, Professor of Marine Geochemistry at MIT who will address the meeting on modern massive sulphide deposits. The MDD will take advantage of Dr. Edmund's St. John's visit in sponsoring a second address to a meeting of the Atlantic Geoscience Society in Halifax on the evening of April 3. The MDD wishes the Newfoundland Branch every success in their Conference.

For information contact Garry Quinlan, Dept. of Earth Sciences, Memorial University, St. John's, Nfld., A1B 3X7, Tel. (709) 737-7568.

Association of Exploration Geochemists, Regional
Symposium, Reno, Nevada, March 25-29, 1984

"Ore Deposits of the North American Cordillera".
Papers with Field Trips; Contact: Chester E.
Nichols, Symposium Chairman, P.O. Box 9777, Reno,
Nevada 89507.

GEOLOGY SEMINARS

University of British Columbia

Wednesday, March 21, 12:30-1:30 p.m.

Geophysics & Astronomy Room 260

Joint Geophysics and Geology Seminar

R.M. Clowes, Dept. Geophysics & Astronomy, UBC

"Update on Lithoprobe: Geoscience Studies of
the Third Dimension."

Thursday, March 22, 12:30 p.m., Room 330A

J. Getsinger, Dept. Geological Sciences, UBC

"Geothermometry, Geobarometry and Dating of the
Snowshoe Formation, N.W. of Quesnel Lake, B.C."

Thursday, March 29, 12:30 p.m., Room 330A

W.G. Ernst, Pacific N.W. Distinguished Lecturer

Department of Earth and Space Sciences

University of California, Los Angeles

"Phanerozoic Metamorphism and Accretion of Northern
and Central California - The Terrane Concept
Revisited."

McMaster University

Monday, March 19, 4:00 p.m., S.S.C.-102

Dr. Chris Hale, Dept. Earth & Planetary Sciences

Erindale College, University of Toronto

Mississauga, Ontario

"Paleomagnetism of the Komati Formation in the
Barberton Mountain Land (Transval):
Paleomagnetism as an Aid in Unravelling
the PreCambrian"

Eleventh Annual Applied Ore Microscopy Short Course:
April 16-20

Department of Geology and Geophysics, University
of Missouri-Rolla, MO 65401. Richard D. Hagni,
Course Director. Registration fee \$US 750. For
information contact Dr. Hagni at above address or
telephone (314) 341-4657.

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