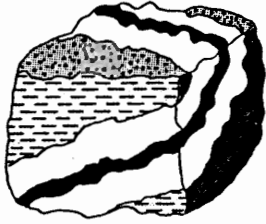


THE GANGUE



Newsletter of the Mineral Deposits Division

Geological Association of Canada

No. 13

May 1982

CHAIRMAN'S REPORT: Division Activities

Activities of the Mineral Deposits Division continue to keep pace with the interests of our membership. Interesting symposia have been organized for the upcoming GAC-MAC Annual Meeting at Winnipeg and the AEG at Saskatoon, and three symposia are planned for Victoria '83. The 1982 Winnipeg annual GAC meeting promises to be unusually attractive for MDD members. The symposium on predictive metallogeny stars an international cast of experts. I predict an excellent group of papers will be presented.

The MDD and Geology Division of CIM have joined forces recently with the Geology Section of Indian and Northern Affairs, Whitehorse to jointly sponsor the symposium 'Economic Geology of the Northern Cordillera'. It will be held in Whitehorse in December, 1983 in lieu of the Geoscience Forum and the cancelled CIM-MDD joint meeting that was proposed for September, 1983. Proceedings will be published on a CIM Special Volume.

The Calgary MEG and the MDD are co-sponsoring a Gold Deposits Workshop in February 1983 that was conceived by R.W. Hutchinson and conspirators from Western Ontario. Although the venue has been changed from Banff to Calgary, the Chairman of the Calgary MEG promises excellent skiing for those bored with gold.

The only 1982 field trip not directly connected to a meeting is the trip run recently to the Copper Mountain-Greenwood, B.C. camps. Ken Dawson reports on the trip in this issue. We all benefit from this type of activity and suggestions are welcome for other field trips.

The MDD executive has been approached by numerous GAC members who oppose the recent increase in annual dues. Two remedies recommended to the MDD executive include: (1) publication of field trip guide books by the MDD as well as other manuscripts, and (2) upgrading The Gangue to a GEOLOG or equivalent type of publication, and possibly including within it some field trip guidebooks. These suggestions involve problems that the current MDD executive are unable to solve. However, I urge you all to remember that nothing escapes changes. Keep your GAC membership alive and seek changes from within, not without.

V.F. Hollister

DUNCAN R. DERRY MEDAL: Julian Boldy wins 1982 award

The Selection Committee for the Duncan R. Derry Medal recently announced that G.D. Julian Boldy of Placer Development Ltd., Toronto has been named the recipient for 1982. Among his many accomplishments, Julian Boldy was responsible for the development of a mercury geochemical technique that led to the discovery of the Delbridge massive sulphide deposit in 1965, and aided in the discovery of the Millenbach and Corbett deposits in 1966 and 1974. He discovered, in 1973, the Reed Lake deposit in Manitoba, now under development by Hudson Bay Mining and Smelting Co. as the Spruce Point Mine. Mr. Boldy will receive his medal at the GAC Annual Luncheon at Winnipeg '82, Monday, May 17 in Pembina Hall Dining Centre.

* * *

An announcement in The Gangue No. 12 concerning the placing of a copy of the Derry Medal in the 'GAC Public Archives' should have read 'National Archives, Ottawa'. The National Archives, which will pay all costs involved, had requested copies of all GAC medals for the National collection.

EXECUTIVE ELECTIONS

The following members have been nominated as Officers and Directors of the Mineral Deposits Division for 1982-83. Since no position was contested, the candidates are hereby declared elected.

Chairman:

J. Alan Coope

Newmont Exploration of Canada Limited
Box 105, Suite 2840
Commerce Court West
Toronto, Ontario
M5L 1E3

Vice-Chairman: John A. McDonald Esso Resources Canada Ltd.
600 - 1281 W. Georgia Street
Vancouver, B.C. V6E 3J7

Secretary: Robert S. Hewton Brinco Mining Ltd.
704 - 602 W. Hastings Street
Vancouver, B.C. V6B 1P2

Program Chairman: Andre Panteleyev B.C. Ministry of Energy, Mines and
Petroleum Resources
Parliament Buildings
Victoria, B.C. V8V 1X4

Publications Chairman: A. Lee Barker Lacana Mining Corp.
Box 354, Royal Trust Tower
Toronto Dominion Centre
Toronto, Ont. M5C 1K7

Directors: (1982-1985) Michael Marchand Zelon Enterprises Ltd.
2238 Sumac Rd. NW
Calgary, Alta. T2K 1F9

Peter E. Fox Fox Geological Consultants
410 - 675 W. Hastings Street
Vancouver, B.C. V6B 1N2

Ian A. Paterson Cominco Ltd.
700 - 409 Granville Street
Vancouver, B.C. V6C 1T8

PUBLICATIONS: MDD Guidebook Series

A.J. Sinclair, Editor-in-Chief of the MDD Guidebook Series, reports that progress is well advanced on the first book, the Highland Valley, B.C. porphyry Cu-Mo district, under the authorship of W.J. McMillan. Publication is anticipated this spring or summer. A second in the series, on the Noranda camp, is under active consideration.

Economic Geology Volume on Canadian ore deposits

The MDD has been approached by Brian Skinner of Economic Geology to participate in the editorship of a volume on Canadian ore deposits. A 1984 publication date is planned. Editors and themes are under consideration. Incoming Publications Chairman Lee Barker and Guidebook Editor Al Sinclair welcome suggestions.

MDD SYMPOSIA: Winnipeg '82

A grand total of ten outstanding symposia and sessions of direct interest to economic geologists have been organized for Winnipeg '82 by Program Chairman C.J.A. ... and ... committee. Programs of the two symposia sponsored by the MDD are given below.

MDD Annual Luncheon

MDD members and guests attending Winnipeg '82 are invited to attend the Annual Luncheon on Wednesday, May 19 at 12:00 noon in the Pembina Hall Dining Centre. A business meeting and presentation of annual reports will be held at that time. A cash bar will be open from 11:30 a.m. Tickets, at \$8.00 each, are available in the registration area.

METALLOGENY AND MINERAL DEPOSITS OF THE PROTEROZOIC — I

A symposium sponsored by Mineral Deposits Division, GAC Room 200, Fletcher Argue Building, Tues., May 18. J.M. Franklin, W.D. McRitchie: Chairmen.

- G.H. Gale: Introduction 0800
- 1. F. Campbell: Overview 0805
- 2. H.V. Zwanig*, D.C.P. Schledewitz: Tectonic Framework of the Churchill Province in Manitoba and Northeastern Saskatchewan 0925
- 3. C.B. Ko, S.M. Trevor*: The Westarm Massive Sulphide Deposit 0845
- 4. N.M. Provins: Geology of the Centennial Copper-Zinc Deposit, Flin Flon, Man 0900
- 5. W.T. Fleming: The Anderson Lake Mine, Snow Lake 0915
- 6. J.G. Pearson: Gold Mineralization in the Flin Flon-Amisk Lake Area 0930
- 7. D.V. Braun: Geology of the Thompson Mine Nickel Deposit, Thompson Nickel Belt, Manitoba 0945
- Coffee Break 1000
- 8. D.C. Mundy: Geology of Pipe Open Pit Mine, Thompson Nickel Belt, Manitoba 1015
- 9. G.H. Gale: Metallogeny of the Proterozoic of Manitoba and Northeastern Sask. 1030

10. E.C. Appleyard: Geochemistry and Origin of U/Mo-Bearing Plagioclase in the Wollaston Domain, Saskatchewan 1050
11. P. Ramaekers: Stratigraphic, Sedimentologic, and Diagenetic Factors of Uranium Metallogenesis in the Athabasca Basin, Proterozoic, Saskatchewan 1105
12. P. Laznicka: Realism and the Regional Metallogeny 1125

METHODS FOR PREDICTIVE METALLOGENY

A panel discussion sponsored by Subcommittee of Provincial Geologists, and Mineral Deposits Division, GAC Room 200, Fletcher Argue Building, Tues., May 18.

A. Sutherland, Brown, G.B. Leech: Chairmen

Presentations by panelists: 1400-1600

R.V. Rundquist, VSEGEI, Leningrad, USSR; DeVerle Harris, University of Arizona, Tucson, U.S.A.; D.F. Sangster, GSC, Ottawa, Canada; G. Mannard, Kidd Creek Mines Ltd., Canada

Discussion by: 1600

J. Boldy, Placer Development Corp., Toronto; R.J. Cathro, A. Cathro Associates, Vancouver.

Open Discussion

METALLOGENY AND MINERAL DEPOSITS OF THE PROTEROZOIC — II

Room 200, Fletcher Argue Building, Wed., May 19. G.H. Gale, D.J. Mossman: Chairmen.

1. M.G. Mudrey Jr.*, G.B. Morey: Non-Ferrous Base Metal Deposits and Metallogeny of Lower Proterozoic Rocks in the Lake Superior Region, U.S.A. 0800
2. R. Rowe: Stratigraphy of the Crandon Massive Sulphide Deposit 0825
3. W.N. Pearson: Stratiform Copper Deposits in the Huronian Supergroup, North Shore Region of Lake Huron, Ontario 0840
4. D.J. Mossman*, G.A. Harron: The Case for Palaeoplacer Gold in the Huronian Supergroup 0855
5. J.M. Franklin*, W.N. Pearson: Metallogeny of the Keweenaw (Mid Continent) Rift Zone in the Lake Superior Region 0910
6. R.M. Tyson: Sulfide Mineralization in the Duluth Complex: a Product of a Re-mobilized Sedimentary Sulfide 0945
- Coffee Break 1000
7. D. Francis*, A. Hynes, J. Ludden, J. Bedard, S. Nadeau: Magma Evolution and Metallogeny in a Proterozoic Rift Zone 1015
8. R.J. Wardle: Metallogeny of the South-Central Labrador Trough 1040
9. A.B. Ryan*, C.F. Gower, S.S. Gandhi: A Synthesis of the Regional Geology and Metallogeny of the Central Mineral Belt, Labrador 1100
10. D.F. Strong: Proterozoic Influences on First, Second and Third Order Mineralization Events in North Atlantic Borderlands 1120
11. J.J. Lefebvre*, L.E. Patterson: Volcanic Activity in the Zairian Copperbelt in Connection with Sedimentation, Tectonism and the Cu-Co Stratabound Mineralization 1140

Ninth International Geochemical Exploration Symposium

The symposium, co-sponsored by the AEG and MDD will be held at the Centennial Auditorium, Saskatoon, May 12-14, immediately preceding the GAC Winnipeg '82. A highlight of the meeting is the MDD Special Session on 'black smokers' and ancient analogues, organized by J. Alan Coope, and an evening movie and slide show of submarine hydrothermal activity. Other sessions include: uranium geochemistry and hydrogeochemistry, geothermal energy, geostatistics and lithogeochemistry.

Victoria '83

The Program Committee of the GAC Annual Meeting in Victoria, May, 1983 has approved two MDD-sponsored symposia: 'Gold deposits of the Canadian Cordillera' convened by A. Panteleyev and 'Tin and tungsten deposits of the Canadian Cordillera' convened by K.M. Dawson and J.A. Coope. Suggestions for papers are invited by the convenors.

DIAND-CIM-MDD Joint Meeting, Whitehorse, 1983

An ambitious three-day symposium 'Economic geology of the northern Cordillera' is planned for Whitehorse in early December, 1983. The meeting, which replaces the Geoscience Forum and a previously cancelled CIM-MDD meeting slated for September 1983, is sponsored jointly by the Geology Section of DIAND, the CIM Geology Division and the MDD. J.A. Morin of DIAND is General Chairman, W. Petruk represents the CIM and K.M. Dawson, the MDD. A wide range of gen-

ral and specific topics related to economic geology will be covered. First call for papers will be issued in the July CIM Bulletin.

Gold Workshop, Calgary

A workshop on gold deposit models will be held in Calgary February 14-16, 1983. The workshop, conceived by R.W. Hutchison, will be jointly sponsored by the MDD and the Calgary MEG. For more information contact Nestor Papish, 5639 - 60th St., NW, Calgary, Alberta T3A 2A6.

Gold in the Churchill and Superior Provinces of Central Canada', Winnipeg

A joint MDD-CIM symposium on gold in the Superior and Churchill Provinces is being organized in conjunction with the CIM Annual Meeting in Winnipeg, April 17-20, 1983. W.D. McRitchie and J.H. Gale are organizing the symposium for the MDD, in conjunction with M. Wright of the CIM Geology Division. Field trips are being planned.

BOOK REVIEW: 'The Discoverers' A 50-year history of the Prospectors and Developers Association

The Prospectors and Developers Association is celebrating its golden anniversary in 1982. At the annual Convention, held in the Royal York Hotel in Toronto in March, the Association published an impressive, well illustrated, 317 page volume called "The Discoverers" to mark its 50-year history.

The general scope of the book covers the history of the Association, stories of some of the more notable mining camps in Canada, and brief biographies of a number of the more prominent personalities involved in the P.D.A. and the exploration industry over the past 50 years.

Over much of its history the P.D.A. did not keep very meaningful records. The many contributors to the book have, however, done a very creditable job of researching old records, old newspaper files and retelling some of the remarkable stories that led to discoveries and the establishment of mines and mining communities all across Canada. The excitement of Blind River, Highland Valley, Red Lake, Athabasca, Labrador Trough, Thompson, Yellowknife, Lynn Lake, Athurst-Newcastle, Beaverlodge and many other camps is all there together with some history of bush flying and airborne geophysics. Featured are accounts of the exploits, determination and imagination of a long list of personalities, prospectors and mine-finders with familiar names like Cryderman, Jowsey, LaBine, Springer, Mosher, Byrne, Rankin, MacMillan, Lindsley, Barnes, Watts, Aho, Derry, Joubin, Holyk, Keevil, Hirshhorn, Knight, Mills and White.

It's an impressive record of Canadian achievement that will generate pride and satisfaction in all who follow and benefit from the contributions of these stalwart predecessors. Essential non-technical reading for those of us who visit and study the famous and important deposits in our mining camps and a bargain at \$19.95 (plus mailing and handling costs of \$1.55).

Copies of "The Discoverers" are available from - Prospectors and Developers Association at Suite 219 - 159 Bay Street, Toronto, Ontario M5J 1J7

J. Alan Coope

FIELD TRIP REPORT: MDD-Cordilleran Section trip to Copper Mountain and Greenwood, B.C., April 30-22, 1982

Participants in the Copper Mountain-Greenwood trip were treated to an inside view of two old British Columbia mining camps in differing stages of rejuvenation. Under sunny skies, the 43 participants toured by chartered bus from Vancouver to Princeton on the first day, on to Grand Forks-Greenwood the second, and returned by essentially the same route on day three. The tour was ably led by Keith Fahrni whose many years of experience in the region with Granby provided the group with insights into the mineral deposits along the route, as well as the regional geology. Keith was assisted by Neil Church, George Addie and Gerry Rae from the B.C. Ministry of Mines, and consultants Robert Longe and James Fyles.

Newmont's open pit mining operations at Ingerbelle, near Princeton, have been phased out, and now all ore is mined from pits developed in the vicinity of Granby's old Copper Mountain underground workings to the east across the Similkameen River. The Copper Mountain camp's alkaline porphyry Cu deposits, particularly Ingerbelle, also possess mineralogical characteristics of skarn deposits. Ore is hosted predominantly by volcanic rocks of the upper Triassic Nicola Group which have undergone pyrometamorphic alteration to a silica-deficient, iron-rich skarn mineral assemblage by reaction with the differentiated alkaline Copper Mountain and Lost Horse stocks.

Enroute to Greenwood a brief stop was made at the Hedley viewpoint to view the old Nickel Mine-Hedley Mascot camp. The Au-As skarn deposits in upper Triassic limestone currently under testing by G.M. Resources.

In the Greenwood district, visits were made to the Phoenix and Greyhound Cu-Fe skarns which, with other old deposits in the camp, have been consolidated by Kettle Valley Resources Ltd. Their regional exploration program is based upon a reinterpretation of the genesis of the skarn deposits by G.R. Peatfield and K.L. Daughtry: stratiform 'protore' beds that may occupy the basal part of the mid-Triassic Brooklyn limestone hostrock were upgraded pyrometamorphically by late Mesozoic intrusions. Robert Longe of Mine Quest presented evidence for the model to the tour group in a lively after-dinner session in Grand Forks. In addition, Boyde

Hardwicke, consultant and ex-manager of Phoenix, presented some entertaining photographs of the camp in the early 1900's.

On the return trip, a visit was made to the Skomac mine of Robert Mines Ltd., a recently re-vised small AgAu (PbZn) vein deposit in Paleozoic argillite. Neil Church provided a lucid explanation of the geology here, and again at the final stop at the Dusty Mac deposit, a gold and silver-bearing silicified zone in Eocene felsic volcanoclastic rocks near Okanagan Falls.

A tour guidebook, compiled by K.C. Fahrni and authored by Fahrni, B.N. Church, V.A. Preto, W.H. Mathews and J.W.H. Monger has been published by the GAC Cordilleran Section. Copies are available at Geological Survey of Canada, Maps and Publications, 6th Floor, 100 West Pender St., Vancouver, B.C. V6B 1R8. Cost \$9.00, cheques payable to Receiver General of Canada.

K.M. Dawson

ANNOUNCEMENTS: Canadian Arctic mine tour

The Alaska Miners Association, Inc. is running a tour of mines in the Canadian Arctic July 6-12, 1982. Itinerary includes meetings with government and local officials at Whitehorse and Yellowknife plus the following mine visits: July 6 Whitehorse Copper, July 7 Pine Point, July 8 Con or Giant, July 9 Lupin (Contwoyto L), July 10 Nanisivik, July 11 Polaris. Send \$US 100.00 deposit to Canadian Arctic Trip, Alaska Miners Association, 509 W. Third Ave., Suite 17, Anchorage Alaska 99501, Tel. 907-276-0347. Full cost \$US 2,000.00 includes travel, meals and lodging, and must be received by June 21/82.

Circum Pacific Council for Energy and Mineral Resources

Slated for Aug. 22-28, 1982, the program of this conference will feature more than 100 prominent scientists and statesmen ensuring an update on the energy and mineral resource potential of the Circum-Pacific region. Chairman is M.T. Halbouty.

Members of GAC-MDD are invited to submit suggestions for technical papers or to submit technical papers for presentation.

A veritable smorgasbord of geological field trips is available. Special workshops are offered on - petroleum resource assessment; application of plate tectonic theory to resource evaluation; fractures in geothermal reservoirs.

Conference brochures available from A.A.P.G., P.O. Box 979, Tulsa, Oklahoma, U.S.A. 74101.

Applied Ore Microscopy short course, 11th annual, Rolla, Missouri, Oct. 4-8, 1982

Five days of lectures and laboratories. Includes a wide variety of applications of the reflecting microscope to ores, exploration, beneficiation, and other industrial problems. Registration \$650. For further information, contact Dr. Richard D. Hagni, Department of Geology and Geophysics, University of Missouri-Rolla, Rolla, MO. 65401, phone 314-341-4657.

Penrose Conference, "Hydrodynamics and Geochemistry of Ore Generation in Sedimentary Environments" (May 20-25, 1982, Millstone Lodge, Gravois Mills, Missouri. FOR DETAILS: W.C. Kelly, Dept. of Geological Sciences, University of Michigan, Ann Arbor, Michigan 48109, U.S.A.

Symposium, "Gold '82", University of Zimbabwe, Salisbury, Zimbabwe (May 24-28, 1982). FOR DETAILS: The Organizing Secretary, Gold 82, Institute of Mining Research, P.O. Box MP 167, Mount Pleasant, Salisbury, Zimbabwe.

I.G.C.P. Projects 91 and 161, Nickel Sulphide Field Conference III, Western Australia (May 24-June 3). FOR DETAILS: Tony Naldrett, Dept. of Geology, University of Toronto, Toronto, Ontario, M5S 1A1.

A.A.P.G., S.E.P.M., C.S.P.G., Joint Conference, Calgary, Alberta (June 26-July 1). FOR DETAILS C.S.P.G., 612 Lougheed Bldg., 604 First St. S.W., Calgary, Alberta, T2P 1M7.

Penrose Conference, "Origin of Fluids and Metals in Porphyry and Epithermal Mineral Deposits", Holiday Inn, Dillon, Colorado, U.S.A. (Aug. 8-13, 1982). FOR DETAILS: James LeAnderson, Dept. of Geological Engineering, Colorado School of Mines, Golden, Colorado, 80401, U.S.A.

Fifth Symposium, "Prospecting in Areas of Glaciated Terrain", St. John's, Newfoundland (Aug. 23-27, 1982). FOR DETAILS: Peter Davenport, Newfoundland Department of Mines and Energy, P.O. Box 4750, St. John's, Newfoundland, A1C 5T7.

Third International Kimberlite Conference, Clermont-Ferrand, France (Sept. 8-11, 1982). FOR DETAILS: The Secretary of the Third International Kimberlite Conference, Laboratoire de Tectonophysique, Universite de Nantes, 2 rue de la Houssiniere, 44072 Nantes, France.

Geological Society of America, Annual Meeting, New Orleans, Louisiana (Oct. 18-21, 1982). FOR DETAILS: G.S.A. Headquarters, 3300 Penrose Place, Boulder, Colorado 80301, U.S.A.

ACKNOWLEDGMENT: The Gangue gratefully acknowledges assistance from Brinco Mining Ltd. and the Geological Survey of Canada in typing, copying and mailing this issue.