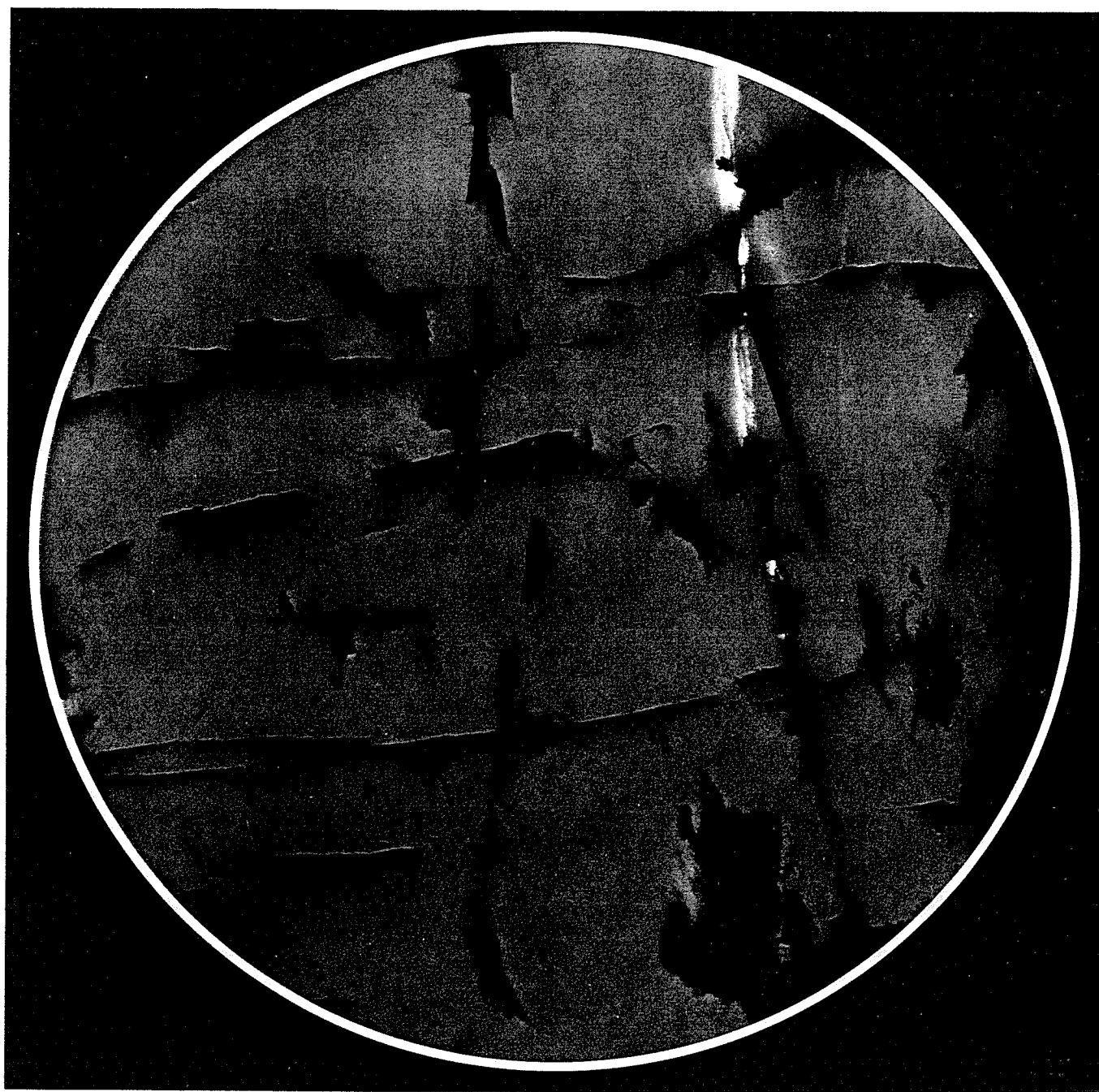


GEOS

Winter/Hiver 1976



Canada's Mineral Collection

(1) Specimens from the Collection are displayed in the Victoria Memorial Museum and Geological Survey of Canada buildings in Ottawa, and are used in a variety of temporary and travelling exhibits

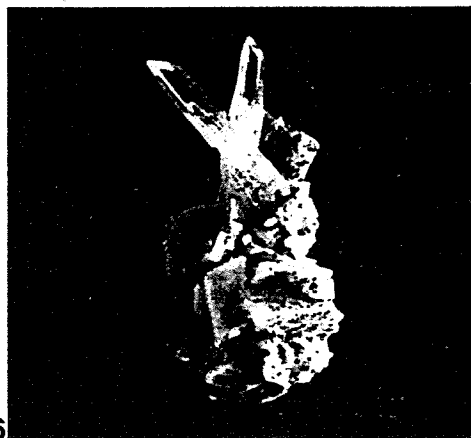
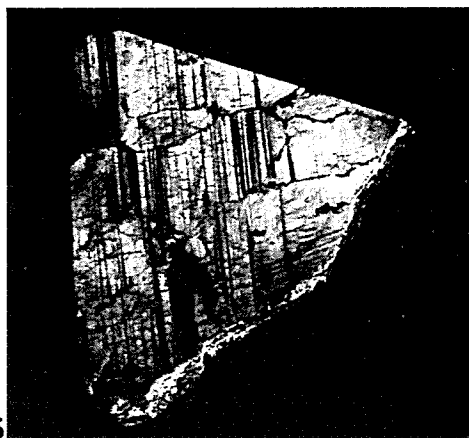
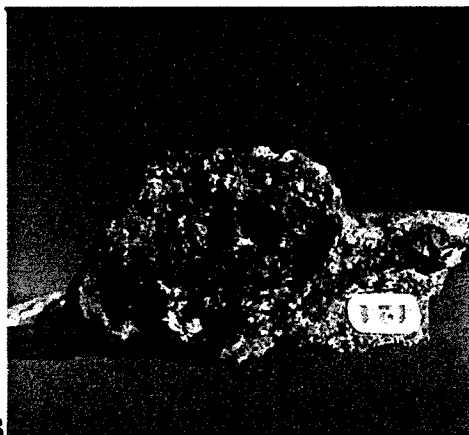
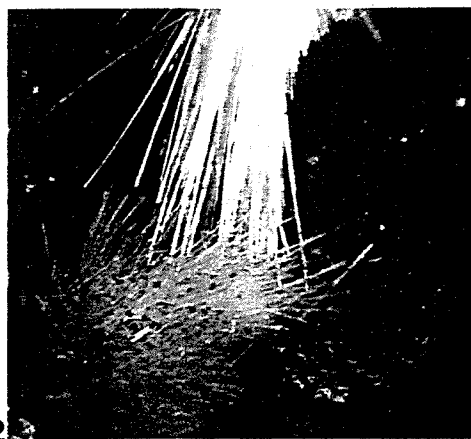
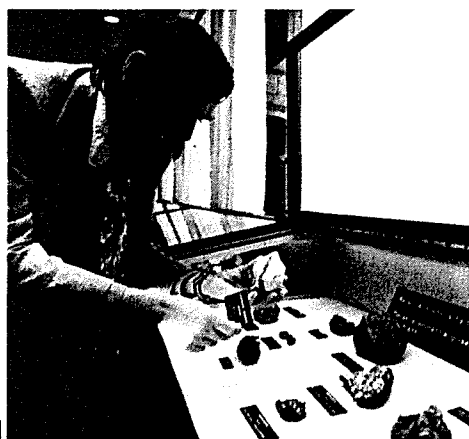
(2) Uranophane from Faraday Mine (Madawaska Mines Ltd.), Bancroft, Ontario. This striking specimen of a secondary uranium mineral illustrates the magnificent mineral forms occasionally encountered in mines and quarries, but unfortunately often lost through normal mining operations. Informing the Curator of unusual mineral occurrences so that they may be preserved is one way the mineral industry can assist in the growth and development of the Collection

(3) An important aspect of the collection is the antiquity of many of its specimens. This one from the Richardson Mine, Ontario's first gold producer, was recently found to be highly radioactive and to contain gold in association with uraniferous hydrocarbon, only the second discovery of this association in the world. The collection of the specimen in 1870 predated the discovery of radioactivity by about 25 years; a re-examination of the specimen has contributed significantly to knowledge about the origin of gold deposits in the region

(4) Topaz from Minas Gerais province in Brazil. Not all the samples in the National Collection come from Canada; this terminated crystal is one of many hundreds of foreign minerals acquired for display and research

(5) Labradorite from Tabor Island, Coast of Labrador, shows the beautiful blue iridescence of Canada's best-known gemstone feldspar

(6) This specimen of quartz and calcite is one of thousands recovered from the Bluebell Mine, Riondel, British Columbia. Its preservation was assured by the foresight of Cominco Limited, who arranged a salvage operation at the mine before its closure in 1971



The origins, display aspects and research significance of the National Mineral Collection



By H. R. Steacy and R. Williams

The National Mineral Collection of Canada celebrates its fifteenth birthday this year, but should really light a hundred and thirty-three candles in recognition of its oldest specimens.

The Collection, which ranks as one of the outstanding active, research and display collections in North America, is built upon older collections of the Geological Survey of Canada and includes specimens collected as early as 1843 by the Survey's founder and first Director, Sir William Logan.

For more than a century the Collection's growth was gradual and intermittent, but in 1961 it was given added impetus by its formal recognition as Canada's National Mineral Collection and by its division into separate display and reference series.

The display series is maintained by the National Museum of Natural Sciences in

Mr. Steacy is Curator with the Geological Survey of Canada, Department of Energy, Mines and Resources. Dr. Williams is Chief, Mineral Sciences Division, National Museum of Natural Sciences.



(7) Procedures to be applied in computerizing the National Collection as part of the National Inventory of Collections are discussed by R. Williams (seated left) and R. Gault, both of the National Museum of Natural Sciences (NMC), H. G. Ansell (EMR), L. Moyd (NMC), and H. R. Steacy (EMR). Computerization will greatly improve the working efficiency of the Collection

(8) Messrs. Moyd and Gault (NMC) and a student from École Polytechnique in Montréal excavating a pegmatite dyke for mineral specimens in a quarry floor at Mont Saint-Hilaire, Québec, a world-famous locality from which many important specimens have been collected

Ottawa, while the reference series is the responsibility of the Geological Survey of Canada. Both agencies work closely together in the development of the Collection as a whole, but the division into separate series enables each agency to apply its respective talents to the Collection and to fulfil its essential obligations.

For its part, the National Museum of Natural Sciences is responsible primarily for the public display of minerals and for related education and extension programs, while the Geological Survey is concerned with mineralogical studies and with the development of a scientific collection for geoscience research. Each agency strives to make the Collection as representative as possible, both systematically and geographically, in order to meet the needs of other government agencies, museums, universities and industry. The Collection includes about 30,000 specimens which are currently being recatalogued into a single, computerized inventory to improve the storage and retrieval of specimen data and overall operating efficiency.

Material for the Collection is acquired by "all legal means", with much collected in the field. In 1975, for example, collections were made from 45 sites in Québec, Ontario and Manitoba and from 29 localities in Baffin Island. Within budgetary limits, specimens are purchased from dealers and collectors, in many cases at major mineral shows in Canada and the United States. Unfortunately, inflation has struck a hard blow at the buyer of mineral specimens and it is not uncommon for display specimens to be priced at several thousand dollars each. Some specimens are becoming as individual as fine paintings and are fetching equivalent prices.

Specimens for the Collection are also acquired by exchanges with private collectors and institutions on a world-wide basis and, often, it is only by exchange that rare and display-quality specimens can be obtained. Both the Museum and the Survey maintain large exchange collections, resulting from their field programs. Additionally, the Museum retains a mineral collector at Mont Saint-Hilaire, Québec, specifically to make as representative a collection as possible from this important site, now one of the world's classic mineral localities. This trial arrangement, made possible through the co-operation of the quarry operators, has not only provided excellent exchange material but superb specimens of serandite and other rare minerals that are being used in a variety of research and display programs.

The Collection is the recipient of gifts of mineral specimens from private organizations and collectors. Tax allowances are available for such donations and information about this may be obtained from both agencies. The Collection looks particularly to the Canadian mining industry for its continued generosity and support.

Why a National Mineral Collection? The reasons are manifold, particularly for a country such as Canada which is so well-endowed with minerals and for which the mineral industry means so much. Mineral exposures are impermanent, for specimens deteriorate through weathering or are lost through quarrying operations or when mines are abandoned. There is thus an obligation to collect specimens as they become available in order to preserve examples of our mineral heritage for the education and enjoyment of present and future generations of Canadians. The fact that so many important specimens exist in today's collections from occurrences which are no longer accessible is a tribute to the foresight of previous curators.

There is also a need to assemble examples of all known minerals to assist in identifying the same minerals when they are found in Canada, and to provide a reference base for the work of other mineralogists and geologists. The National Mineral Collection includes about 1,700 different minerals which represent nearly three-quarters of the recognized mineral species. Extending and improving this representation is an important function of the curators.

The maintenance of a systematic and geographic collection of Canadian world minerals is also necessary to comply with information and specimen requests from other government agencies and museums, universities and industry. Specimens are supplied for a variety of research programs that have included studies on the colour of minerals, defining the age of minerals, and discovering clues for finding new ore deposits. Over the past three years the Collection has complied with about 400 individual requests and supplied more than 1,200 specimens to accredited research programs.

Specimens in the Collection range from mere 'specks' to pieces weighing several hundred pounds, and from drab lumps to crystals of exceptional beauty. There are some illustrative contrasts. For example, two apatite specimens are highly prized, one weighing 550 pounds (249 kg) and the other a mere half ounce (14 gm). The first, recovered from a former phosphate mine

near Buckingham, Québec, is believed to be the largest apatite crystal ever recovered intact from any deposit. The latter, from near Bancroft, Ontario, is a 66 carat gem apatite, probably the largest faceted apatite in the world. The dogged determination of past collectors is represented by a 165 pound (75 kg) nugget of native copper collected in the Yukon Territory and carried for miles over arduous terrain to assure its preservation. The hidden value of many, rather ordinary-looking specimens is evident by one collected 40 years ago near Madoc, Ontario. A recent re-examination of this specimen led to the discovery of eight, new, lead-antimony-arsenic minerals from the same occurrence, one appropriately named madocite. The specimens, too, are not without their lore and legends. A large nugget of native gold currently on display at the National Museum of Natural Sciences was found by the RCMP in a burned-out shack in northern British Columbia, apparently the object of a fatal argument between two prospectors. Of particular scientific value are the type specimens. These are one-of-a-kind specimens on which the properties of the minerals were first determined and reported. As such, they are international standards, loaned out only in exceptional circumstances.

Public interest in minerals has grown enormously in recent years as is evident from the growing attendance at Museum exhibits and Mineral Shows and by the increasing numbers of mineral collectors. Satisfying this public interest is a major objective of the Collection, mainly carried out through programs of the National Museum. Specimens are permanently displayed at the Victoria Memorial Museum Building and at the Geological Survey Building, and are used in a variety of temporary and travelling exhibit programs.

The National Mineral Collection is now an established working collection contributing to research in the earth sciences and to a greater public appreciation of Canada's mineral heritage. Canadians may participate in the development of their Collection by providing information on new mineral occurrences and through recognizing the Collection as a permanent repository for mineral specimens and gemstones. □