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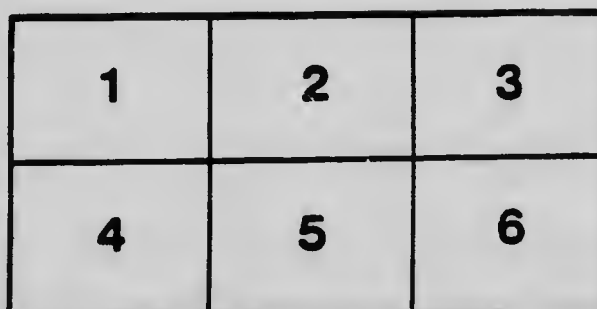
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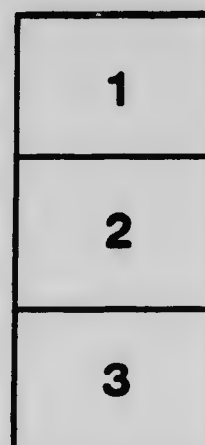
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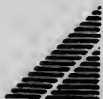
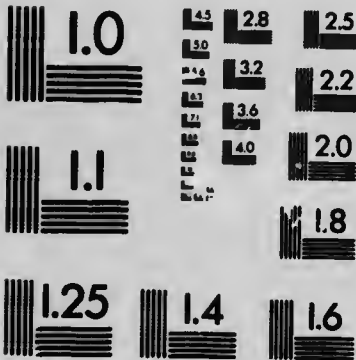
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**A CHEAP CASE FOR SMALL MUSEUMS**

By HARLAN I. SMITH  
Geological Survey, Ottawa

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## A CHEAP CASE FOR SMALL MUSEUMS.

BY HARLAN I. SMITH.

Geological Survey, Ottawa.

For many years we have heard complaints from museum curators and others interested in museums, that there was not sufficient money available for the purchase of specimens, the erection of a desired building, and the making of cases. It is true this complaint was not always, though often, made as a sort of apology for the lack of arrangement and labelling, the presence of dirt, and the failure of the museum to be useful to the community, or even interesting to the average visitor. Some museums spend for specimens thousands of dollars annually, for many years in succession, while their exhibition halls lack sufficient labels of all kinds, and especially the general divisional labels and case labels which are among the first needed to make a museum useful to the public. It is like paying \$5.00 for a volume and not reading it when it were better to buy a five cent book to read. It is known by actual experience that a few hundred dollars invested in lumber, stain and the services of a painter, will remove this main stigma of faulty labelling from a fairly large museum. After all, a museum had better be without many specimens than to be lacking in essential labels. One specimen, such as a diamond or an elephant, may cost more than thousands of equally instructive specimens, such as a piece of coal or a kernel of corn, and will actually use up funds needed to completely label a large part of a great museum or an entire small one. Many institutions waste years in discussing what color, and weight of cardboard, or other material is to be used for labels, and many years pass before any exhibit is adequately labelled, it would be better to attach labels—either written in longhand, or by typewriter, so that the present generation may get useful service from the exhibit. Such tentative labels may be replaced whenever a better kind is decided upon.

Waiting for a fire-proof, or permanent, or larger building is certainly a waste of time. I once knew of a professor who complained that he could not teach a number of interested students because he had no class room, but I believe I can recall hearing of certain great teachers of antiquity, who taught their disciples by the road side, without either class room or place to lay their heads, and this idea also applies to museums, for after all, the whole out-of-doors is the best museum. A corner in every school-house may be a museum; a nook in every Board of Trade building may serve the same purpose; even the Sunday



School room may have its museum. A cheap inflammable building may be a more useful museum building than a fire-proof structure costing millions. In an inflammable building it would not be wise to store valuable material, but in it could be displayed labels, pictures, maps and books illustrated by such cheap and common specimens as elm leaves, squash seeds, broken pebbles, English sparrows, mice, or the skull of a dog. A museum of such specimens, accompanied by appropriate labels, books, maps, pictures and models, might easily be of more service to a community than some existing museums costing say ten times as much.

Case problems may delay curators not months but years. First there is the discussion as to what kind of a case and how to make it dust proof; what it should be made of, the color the back-ground is to be painted, or whether burlap will be used instead of paint. In this way, while waiting for cases, years go by. People who would use the museum grow old and die. Children who have time in their receptive condition of mind to profit most in the museum grow up and have their time occupied by necessary labor. Their minds become blurted to the useful impressions which they might gain in the museum, and still the museum curator has not secured the case he needs for the exhibit in time to benefit all the classes of people, from the old people to the school children. As a matter of fact, all these people could have gotten the maximum amount of benefit from the museum, had the specimens been exhibited without any case at all, on the wall, on tables, on the floor, or even out in the big out-door world, had there been sufficient and appropriate labelling. Thus the kind of material and color of case seems to have little to do with the usefulness of a museum. I have seen museums with black cases, white cases, reddish cases, yellowish cases and portions of museums with no cases at all, and every one of these had some exhibits that were superior in graphic usefulness to some class of the public than were any other exhibits known to me. No doubt the back-grounds should be carefully considered, certain colors being better than others. Perhaps the relationship of colors or general harmony and the relationship of light and a subdued quietness of color are of extreme importance, but visitors have been in a museum where the cases were entirely white, been interested and obtained useful information some little time before noticing whether the cases were white or black. While black cases may not be advisable, several of our best museums have them, and in some instances one sees the exhibit before it is realized that the case is black. No doubt either a white or a black case may



be very bad in a wrong setting, wrong relations, or if it is not harmonious, and not used wisely.

The museum of the Natural History Society of New Brunswick, located at St. John, has a comparatively small amount of money to spend each year. In this the museum is perhaps fortunate, for in so far as the curator's funds permit, some of the most up-to-date museum methods are actually being put in force. The curator has insufficient help, a comparatively poor building and miserable cases, yet he carries on field research, conducts a lecture course for adults and one for school children, so that two lectures are given each week during the school season. Large parties of young people are taken out to investigate and study in the field; some publications are issued, material collected by school children and sent to him by their teachers is identified, and the teachers of the schools are provided with nature study leaflets suggested by the object sent within twenty-four hours of its receipt. Every school child is interested in what Willie Jones of School No. 2 found yesterday.

In autumn when the Canadian Pacific Railway supplies two cars to be drawn over its lines and side tracked for a few hours, more or less, at each station where an audience may be had, and when these cars are filled with exhibits under the auspices of the Provincial Government of New Brunswick, the curator accompanies the train. One of the cars usually contains exhibits of pigs, chickens and other live stock; other exhibits relating to agriculture consist of bees, nursery trees, cream separators, or whatever the Government experts consider may uplift the agriculturists of the Province. Our curator friend installs material from the museum, supplemented by specimens collected for the purpose. Specimens of birds which benefit the farmer's crops, insects which damage them, are shown, as well as drawings hastily made with cheap materials, but which may be fastened to the walls of the car or held up while lectures are delivered to the rural audiences on subjects which will make their work more successful and pleasant. But more interesting to us in the present connection is the cheapness of the cases which the curator of the above museum has had built as a beginning towards those which he intends to have throughout the museum for the housing of instructive and useful exhibits, his idea being that while these cases are not all he would like to have them, still they will serve the purpose so that the public, old and young, scientist and layman, may derive benefit from the museum until such time as he has secured funds for ideal cases, and has decided what an ideal case is and what color to paint it. But now, he has found that if the school children of to day derive benefit

from the exhibits in these cheap cases, when they are women and men of to-morrow, his museum, though he may then be dead, will not want for ideal cases, an ideal fire-proof building, its own railroad train, or even the most valuable though perhaps not very instructive specimens.

With this inspiration, and having in the Rocky Mountains Museum a need to build at least one case as a sample and install it within three weeks, I designed a cheap case for a small museum or a museum having small funds. A contractor in Ottawa will make such a case for \$10.00 or less, casing a museum for less than one-fiftieth the cost of our finest cases. Any ordinary house carpenter can make such a case. The materials may be obtained wherever window sashes are to be had. All the woodwork may be cut to sizes at the local mill, and this is especially desirable where a large number of cases are to be made, as it will save much of the expense of the carpenter work.

The kind of wood and moulding may be varied according to what is cheapest and most easily obtainable where the cases are being made, care being taken, however, if any moulding is used, to choose that which is simple, dignified, and will not gather dust. It may be desirable to let the size of the glass panels and even of the case depend somewhat on the size of glass that can be obtained.

The advocating of a cheap case, its manufacture, installation and use, in no way militates against advocating the best and most expensive cases on the market, their manufacture, installation and use, but on the contrary paves the way for them. The museum that waits to be useful until it can have cases costing many hundreds of dollars each will probably wait a long time for financial support. The museum that teaches and otherwise becomes useful to the public with clean, neat, though cheap cases, will gain the sound financial support which it deserves, at least as soon as the children of the present generation grow to positions of authority, and then the cheap cases may be discarded, or, better still, sold or given to a branch museum or a small struggling museum, and replaced by the very best cases to be obtained on the market to be manufactured.

(To be continued).

## A CHEAP CASE FOR SMALL MUSEUMS.

BY HARLAN I. SMITH.

Geological Survey, Ottawa.

(Continued from page 36).

One form and size of this case is practically a simple box, three feet wide over all with a window sash screwed on as a cover. The sides of the case may be 7 feet high. The top and bottom of  $1\frac{1}{4}$  inch material, 1 foot wide, is set in about  $2\frac{1}{4}$  inches, more or less, from the ends of the sides. These four boards constitute the box frame without front or back. A piece  $2\frac{1}{2}$  inches wide and as thick as the window sash, usually  $1\frac{3}{4}$ , or, better,  $1\frac{1}{4}$  is nailed across from side to side at the top and bottom of both front and back to strengthen the frame and to cover the space above and below the top and bottom of the case; the lower one also serves as a support upon which the lower edge of the glass front and glass or wooden back frames may rest. This  $2\frac{1}{2}$ -inch strip only partly covers the edge of the top and bottom, so that the screws holding the front and back may be inserted into the top and bottom, but also so that there may be no crack or space from the front or back into the space left at the outside of the top and bottom of the case. A kicking moulding may then be put across from side to side at the bottom of the case, both front and back but it should not project beyond the sides of the case, as this would prevent several cases being placed close together, side by side. In short, the sides of the case should be flush. A board is next put over the top of the case to keep dust, etc., from gathering in the space outside of the case top, and to give the case finish. This board should project an inch or two in front and behind, but as in the case of the kickboard should not extend beyond the sides of the case except where a case is to stand alone. A moulding may be placed below this top in the corner between it and the  $2\frac{1}{2}$ -inch strip across the top of the front of the case according to taste. The general label of the entire case may then be fastened on this moulding on the  $2\frac{1}{2}$  inch strip or from the cover of the case to the  $2\frac{1}{2}$  inch strip, by means of round headed screws through the middle of the end of the label board. In fact one purpose for having the case extend above the top of the exhibition space, that is above the top of the glass sash, is to provide this space for a case label. On the other hand a case label may be painted directly on the  $2\frac{1}{2}$  inch strip, or the sash.

The front of the case is made of a simple window sash, such as may be obtained in any town where a sash and door factory exists, or for that matter any place where houses are built. It is fastened with round headed screws engaging the edge of the sides and top of the case, the frame resting upon the  $2\frac{1}{2}$  inch strip across the lower part of the case. By screwing the frame on, it is not necessary to go to the expense of hinges and locks. The screw holes may be soaped, waxed, or metal screw sockets may be used if it seems desirable to go to that expense. A screwdriver serves as a key. Moreover, by drawing the screws tight, the case may be made as near dust-proof as is necessary in a small museum. In fact much more fuss is made about dust-proof cases and about getting fine cases than about using them, after fine dust-proof cases are obtained; that is, the curator's energy seems to be used up in getting building, cases, and specimens; then he rests on his oars as a rule, leaving the exhibits without understandable labels, and practically useless. A little attention given to wiping out cases, cleaning specimens and looking to the upkeep of the specimens in most cases would be cheaper and quicker than giving so much attention to dust and insect proof cases. Moreover, going over the specimens say once a year for such a purpose, the curator could hardly fail to note the lack of order and labels, and many things which he would then want to do to improve the usefulness of his exhibit. However, cotton tape or wicking set in a planed groove may be added to exclude dust if desired.

The frame should be cut down on the outer sides and ends as much as is consistent with sufficient strength to hold the glass, but of course it cannot be cut down to less than the  $\frac{3}{8}$  of an inch necessary to cover the edges of the sides and top of the exhibition case, to which it is screwed. The glass should be in the largest pieces obtainable, up to the full size of the frame, and where more than one piece of glass is required preference should be given to running the mullions horizontally so that they may the more often fall opposite a horizontal shelf edge instead of vertically across the line of vision. It is hardly necessary to say that the glass should be of the best quality which the museum can afford, and certainly should be free from blebs and other blemishes. If it is sufficiently heavy, there will be no need of disfiguring signs requesting visitors not to lean on the glass.

Shelves may be cut about  $\frac{1}{8}$  of an inch shorter than the top and bottom of the case, so that they may be moved easily and may rest upon round headed screws, or, still better, on screw eyes turned horizontally in the sides of the case, one at each corner of the shelf. When it is necessary to raise or lower the

shelf these screws are easily changed and the holes may be puttied up and touched with color, although if left they will no more disfigure the case than the ordinary ratchets used for holding shelves at various heights. The case may be stained or painted with a dull finish, certainly not a very glossy varnish, perhaps preferably with a thin wash, to give it a somewhat neutral color in harmony with that of the walls of the building in which it is to stand.

The back of the case, it seems, should certainly be put on in the same way as the front, so that if it is ever desirable to turn the case at right angles and have glass upon both front and back, the back may be removed and a glass frame similar to the one in front may be put on as easily as one would open and shut the case to put in or take out a specimen. If the back is to be solid woodwork, which is perhaps desirable where heavy things are to be hung from it, care should be taken that it is built so that the expansion and contraction due to changes in the weather or the heating of the building may not strain the rest of the case, and the boards should run up and down or crosswise rather than either diagonally or possibly even in panels, so that they may not be optically disagreeable in connection with the exhibit. Perhaps as good a way as any would be to let the back of the case be a frame with compo board instead of glass, as the compo board could be replaced at any time glass was desired, and meanwhile would serve very well as a background to exhibits or upon which to hang exhibits that were not too heavy. A diaphragm set back against the rear frame would serve for heavy objects and be desirably smooth or could be covered with burlap, paint, paper, or what not, as desired.

When the case has glass front and back, that is, when the exhibit is to be viewed from two sides, or when it is not desirable to use the full depth of the case for the exhibit on hand, a diaphragm about  $\frac{1}{8}$  of an inch shorter and narrower than the inside of the case may be inserted at any distance from the front of the case, and held in place either with round headed screws through the sides of the case or with small angle irons or  $\frac{1}{8}$ -inch cove, in front and behind the diaphragm at the corners, or oftener according to taste and the amount of strength desired. This method of fastening the diaphragm allows it to be adjusted or removed in a very few minutes with practically no waste and no unsightly scars which could not be retouched with putty and colored, or which if not retouched would be no more unsightly than the complicated and expensive diaphragm holders usually used.

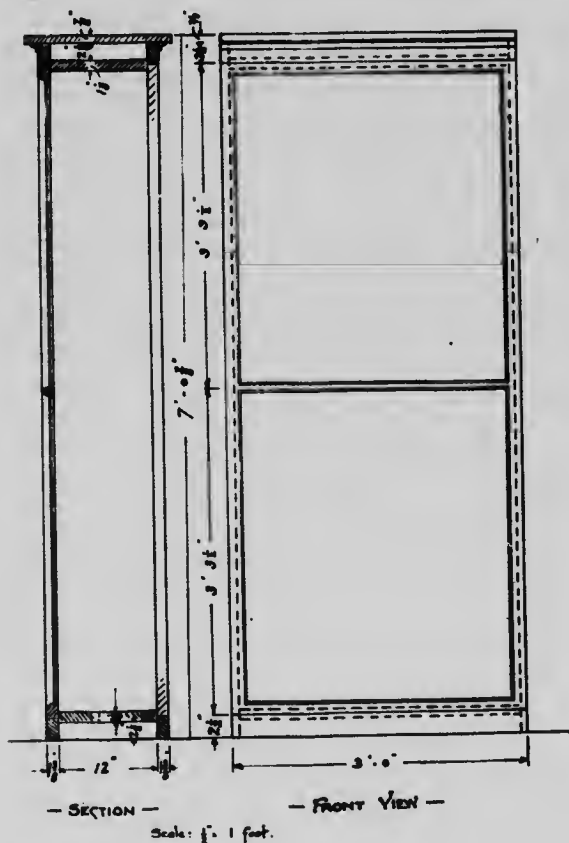
The cases should be made in uniform sizes or multiple sizes like sectional book cases, so that they may be moved about and

reassembled, for instance, by placing two 3-foot cases side by side to harmonize with a 6-foot case, and so on, or by placing two cases 6 inches deep back to back, to approximately harmonize with a case 1 foot deep. Cases should never be fastened to the walls of the room in such a way that when they are moved the room is disfigured, requiring replastering, repainting of the replastered part, and then, as so often happens, repainting of the entire room because it is discovered that the patch of new painting does not match the whole because of its freshness. A little forethought along these lines will save a large portion of the funds of museums which might be used for other purposes, instead of being thrown on the junk heap.

If it is desirable to let light in one or both sides of the case they may be made like the front and back, but then care must be taken that the frame is large enough to hold the screws necessary for supporting any shelves used. If a diaphragm is used,

the screws to hold the rear corners of the shelves may be inserted in the diaphragm.

These general plans may be varied, the cases may be made of various heights, various widths, and various depths. They may be built with higher or lower bases and tops; or again shorter cases may be built and placed upon tables or pedestals; cases may be super-imposed or hung upon a wall. Very large cases might



be made on this same principle, by substituting frames with glass in place of the wooden sides of the cases, it being only necessary in such cases to carry the sides up and down from the top and bottom of the frame in the same manner that the front and back is carried up and down. If the case is so large, as for habitat groups, that it is necessary to have more than one frame, a mullion to which to screw the frames may be inserted between the top and bottom of the case where necessary, but this should not project sideways beyond the wooden frame. By this means the amount of wood exposed to view is kept at a minimum, whereas in many cases such as we often see, the mullion is exposed to view and the frames are on each side of it, making three thicknesses of wood to obscure the exhibit instead of only two. If desired, a moulding can be screwed over the crack where the frames meet, and if fastened to one of the frames that frame may be taken off first in opening and closing the case, which will save the trouble of unscrewing the moulding.

In the simple cases the front and back sashes may all be made the same size; where the cases are not very deep and sashes are used in the sides, it will of course be necessary to have a smaller size of sash for the sides; but if the cases are very large this will not be necessary, although it will make any attempt at a square case as much longer than it is wide as twice the thickness of the sash, unless the frame at each corner laps the same direction.

One of the simple forms of these cases three feet wide by one foot by seven feet, was made, with the exception of the frame and glass, by two carpenters, during the time which they could take from other work in a single day while assisting in reorganizing the Rocky Mountains Park Museum. It was thought that the frame and glass could be put on later. The case was wanted immediately and an exhibit was installed in it as soon as it had been given a coat of stain. This seemed a fair test of the cheapness, ease and speed with which such cases could be made available.

The specifications which have been made by Mr. P. A. Taverner to accompany this description are for a somewhat more complicated and slightly more expensive case, and consequently a number of the dimensions and methods of construction are slightly different.

#### SPECIFICATIONS.—BY P. A. TAVERNER.

##### MATERIAL—LUMBER.

All material in case to be of clear, white pine, whitewood or other material most readily obtainable in locality, in clear lengths free from large or unsound knots or shakes.



All exposed work may be in oak or other wood to match fittings already installed.

#### SASH.

To be  $1\frac{3}{8}$  inch thick of common stock pattern—rails and styles 2 inch wide from glass to jamb, and of sizes as shown.

#### TOP AND SIDES.

May be of  $\frac{7}{8}$  stuff with  $\frac{3}{8}$  inch by  $1\frac{3}{8}$  rebate along sash jamb or may be built up of two thicknesses of  $\frac{1}{2}$  inch stuff. The inner lining being of matched stuff well cramped together and blind nailed.

#### DIAPHRAGM TO BE SUPPLIED ONLY WHERE DESIRED.

To be of  $\frac{7}{8}$  inch stuff fastened together with flush end styles well nailed to prevent warping. All should be covered, both sides with burlap or other covering material, or paneled according to decoration or other scheme of museum. Diaphragm to be held upright and in place by 1 inch by 1 inch by  $\frac{1}{8}$  inch iron angles screwed to top and bottom of case on either side of diaphragm. For three-foot cases there should be two pairs of such angles, top and bottom, and for six-foot cases there should be three such pairs. Diaphragms may be moved to any situation in case by changing position of angles.

#### SHELVES.

Shelves for light specimens may be supported by screw eyes inserted in ends and diaphragm or mullions as indicated on drawings, turning them flatways and allowing them to project enough to engage shelves. For heavy specimens, iron brackets—stock sizes, or Shrosbree specimen hangers may be used whenever needed. If a coarse burlap is used over diaphragm, screws may be put in and removed as many times as necessary without causing disfiguring scars on the surface.

#### BASE OR MOPBOARD.

To be stock 6 inch base of whatever design may be desired and may be readily obtained at local lumber yard or mill.

#### SIDES.

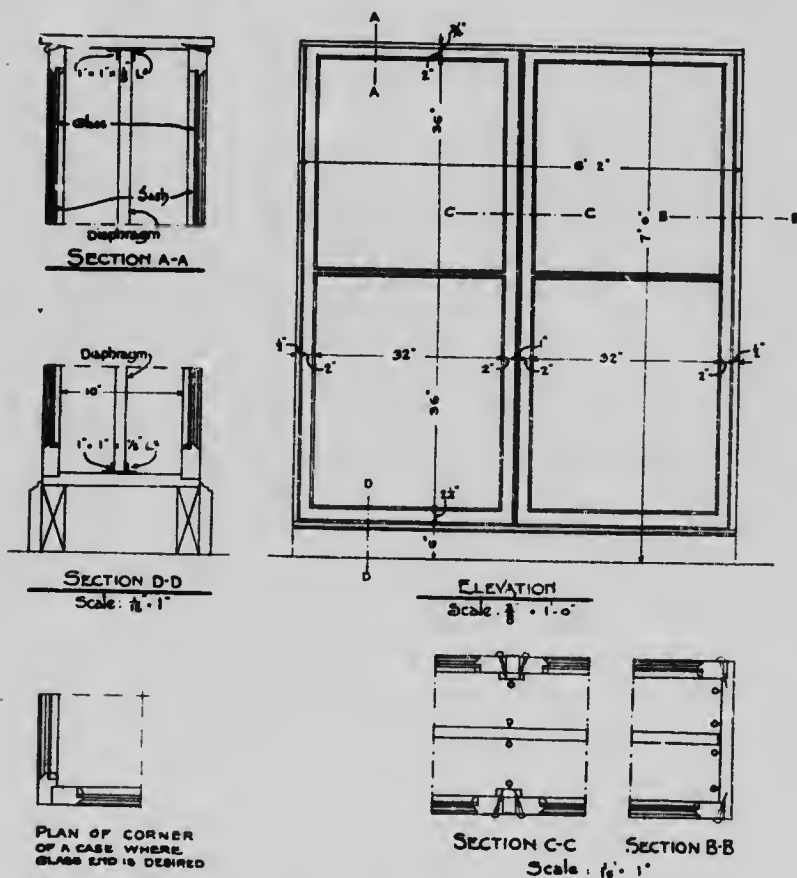
All sides of cases to present perfectly flush surface, so that two or more cases may be butted together to appear as one case without unsightly or dust catching spaces between.

Cases may be made in units of either 1 or 2 sash. A 1 sash case will then be just half the length of the 2 sash cases and will line up with them in series. The sashes are to be fastened in place by  $2\frac{1}{2}$  inch brass, round headed screws, driven through the sash into the frame behind. With this method

neither locks or hinges are necessary, and all can be constructed by an ordinary carpenter without special joinery skill.

#### GLASS.

To be the sizes shown and of as good quality as procurable under the circumstances. The principal faults to be looked for being color, waves, bubbles or flaws.



### A CHEAP CASE FOR MUSEUMS

DESIGNED BY HARLAN I. SMITH

WITH

PLAN AND SPECIFICATION BY P. A. TAVERNER

GEOLOGICAL SURVEY, CANADA

