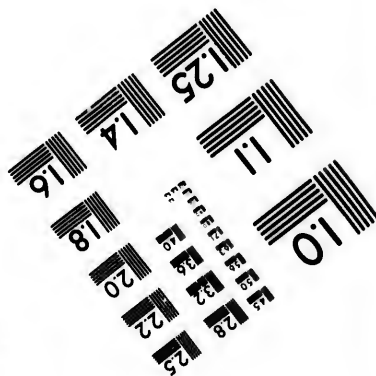
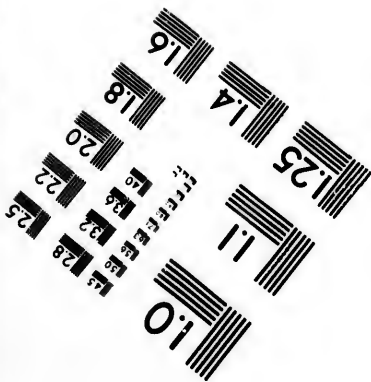
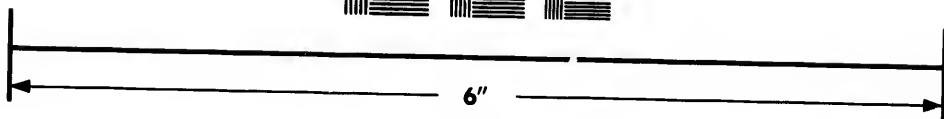
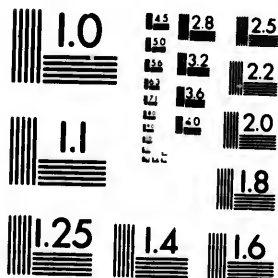


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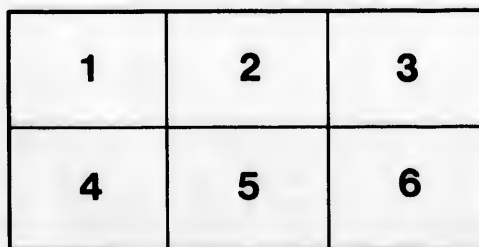
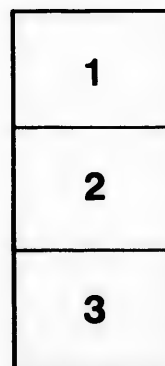
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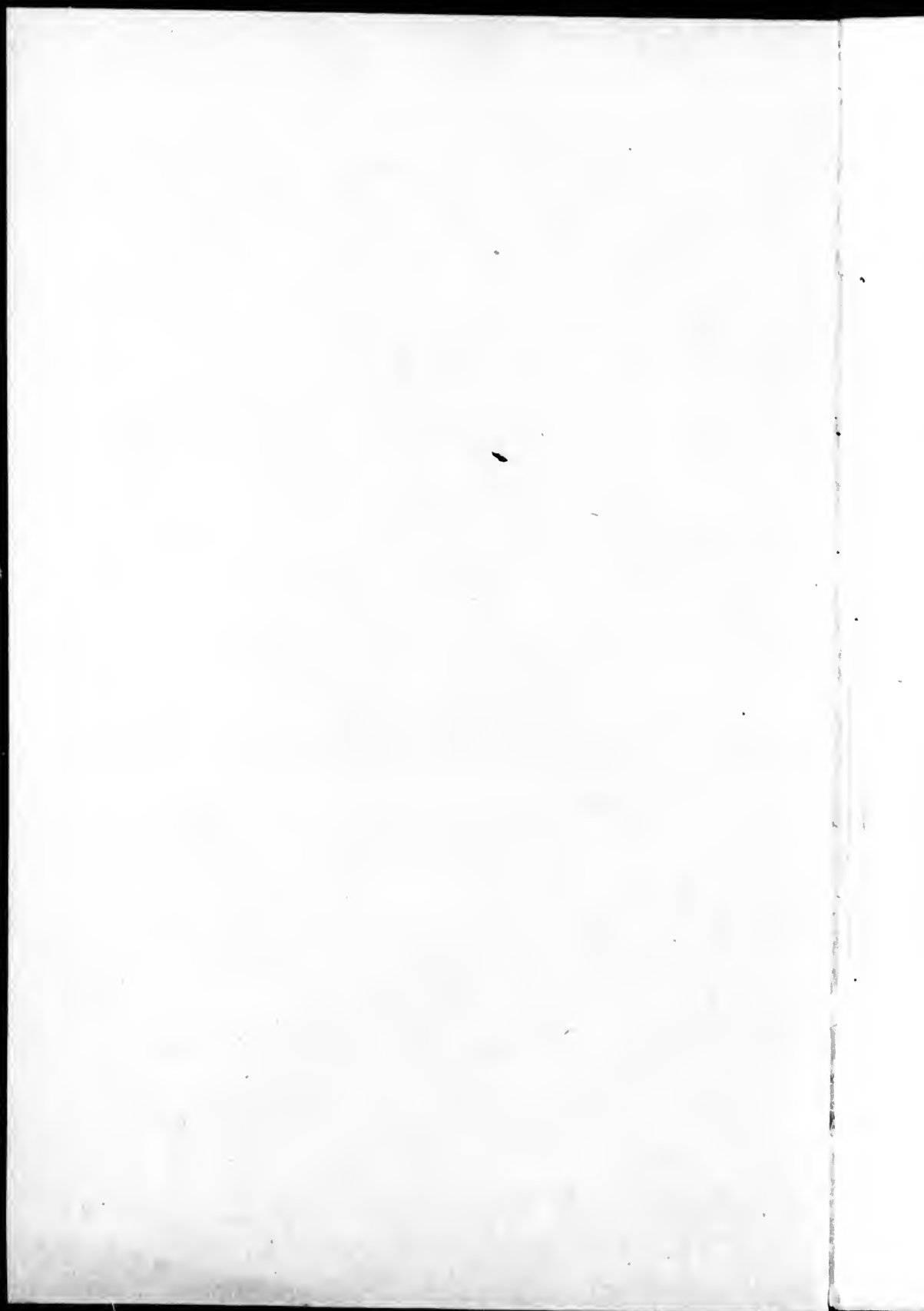
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CONSTITUTION

AND

BYE-LAWS

OF THE

Natural History Society

OF MONTREAL.

WITH

**DIRECTIONS FOR PRESERVING AND FORWARDING
OBJECTS OF NATURAL HISTORY.**

1828.

MONTREAL:

PRINTED AT THE MONTREAL GAZETTE OFFICE.

1828.



CONSTITUTION
OF THE
NATURAL HISTORY SOCIETY
OF MONTREAL.

ARTICLE 1st, The Society shall be called the NATURAL HISTORY SOCIETY OF MONTREAL, and its chief object shall be the investigation of the Natural History of Canada.

2d, It shall consist of an indefinite number of Ordinary, Corresponding and Honorary Members, all to be chosen by ballot. Ordinary Members are those who pay an annual subscription of five Dollars, or a life subscription of ten Pounds. Corresponding Members are those who reside at a distance from the city. Honorary Members can be those only, who are distinguished for scientific attainments.

3d, Propositions for the election of new Members, whether Ordinary, Corresponding or Honorary, shall require to be made in writing and seconded, and the name of the person proposed, together with those of the proposer and seconder, shall be placed in some conspicuous part of the Society's room, till the next Ordinary Meeting, at which the ballot on the proposal shall take place.

4th, The affirmative votes of two-thirds of the Members present shall be required for the election of an Ordinary Member, and those of three-fourths, for that of a Corresponding or Honorary Member, and for the two latter, the votes of twelve Members, at least, shall be necessary.

5th, There shall be elected annually, on the 18th day of May, for the government of the Society, the following Officers: viz. a President, a 1st, 2d, and 3d Vice President, a Corresponding Secretary, a Recording Secretary, a Treasurer and a Librarian and Cabinet-keeper, and likewise a Committee of five Members, which, together with the Officers, shall constitute the Council of the Society.

6th, Corresponding Members shall have no vote, and shall not be eligible to office in the Society, but Honorary Members shall enjoy all the privileges of Ordinary Members, except in voting for the election of Officers.

7th, In the election of Officers and Committees, a simple majority shall be sufficient.

8th, All motions which are not adopted unanimously, shall be determined by ballot.

9th, The Society shall meet on the last Monday in every month, throughout the year, at 7 o'clock, P. M. from the 1st November to the 1st April, and at 8 o'clock, P. M. during the remainder, and at every such Ordinary Meeting, ten Members shall be required to constitute a quorum. Extraordinary Meetings may be held at other times, at which fifteen Members shall be required to be present.

10th, Bye-laws for the government of the Society may be made and altered from time to time, but any intended alteration or addition shall be announced and read one month previous to being submitted to the ballot, and the assent of two-thirds of the Members present shall be necessary for its adoption.

11th, No alteration in the Constitution can be made, but on the written motion of three Members, and after two months notice, and with the assent of three-fourths of the Members present.

12th, Any Member may be expelled by a vote of three-fourths of the Members present at an Extraordinary Meeting called for the purpose.



BYE-LAWS.



OF MEMBERS.

1. All Ordinary Members shall be required to pay their entrance subscription within two months after election, and to sign their assent to the Constitution of the Society. The second, and all subsequent subscriptions, shall fall due on the 1st of May in every year.

2. Ordinary Members shall, on payment of their fee, be furnished with a printed copy of the Laws.

3. No Ordinary Member in arrear for one year shall be eligible to hold office, or to vote, and if, after two years, his debt still remains due, he shall, if refusing to pay, be *ipso facto* expelled.

4. Corresponding Members shall pay no fee— if coming to reside in town, or wishing to become Ordinary, they shall not require a new election, but only the payment of the fees. They are entitled to attend the Meetings of the Society.

5. Honorary and Corresponding Members shall receive a Diploma gratis, to be forwarded with the notice of the Corresponding Secretary announcing their election. Ordinary Members

shall pay to the Treasurer, for a Diploma, five shillings.

OF OFFICERS.

1. The President, when in the Chair, shall regulate the order of the Meeting—shall inform the Society of the proceedings since the last Meeting—shall direct the Secretaries to read reports and communications, and to acknowledge the latter when necessary—shall receive and read motions, and cause the sense of the Society to be taken on them—he shall announce to the Society what he may think concerns its interests—he shall keep order, but appeal may be had from his decision to the Society itself, provided it be sustained by a written motion, signed by five Members,—he shall have a vote, and likewise a casting vote.

2. The Vice-Presidents shall be named 1st, 2d and 3d, according to the number of votes in the election of each. In the absence of the President one of the Vice-Presidents shall preside according to precedence, and shall have all the duties and privileges of President.

3. The Corresponding Secretary shall conduct all the Correspondence of the Society—shall announce to Members their election—shall read all communications, made to him, relating to the Society, and shall acknowledge all donations.

4. The Recording Secretary shall take minutes of the proceedings of the Meetings of the Society, and keep a record of them—shall have the charge of all papers belonging to the Society—shall read the report of Committees—shall conduct all ballots and elections (under the directions of the Presiding Member)—and he shall

give notice of the monthly and special Meetings of the Society, at least forty-eight hours beforehand.

5. A Secretary, if necessarily absent, shall depute another Member to fill his place for the evening.

6. The Treasurer shall have the charge of all monies belonging to the Society—shall collect all fees, fines, &c.—shall pay all accounts which have been previously approved by the Council—keep a regular account of income and expenditure, which is to be made up, semi-annually, to the 1st May and 1st November. He shall procure the signature and assent of new Members (at the time of receiving their fees), to the laws of the Society.

7. The Librarian and Cabinet-keeper shall have charge of the Library and Cabinet, and shall be accountable for the Books and Specimens—he shall keep separate Catalogues of the Books and Specimens.

8. The Officers and all the Members of the Council shall be elected in the following manner:—each Member present, having written the names of those he selects for the different Offices, shall place the paper folded and without signature, in the ballot-box: the Recording Secretary shall then examine the Lists, and report to the President or Presiding Member, the number of votes for each person, and the person having the majority of votes for any Office, shall be duly elected to fill it.

OF THE COUNCIL.

The Council (composed of all the Officers, and of the Committee elected at the same time), shall

conduct all the business of the Society, reporting its proceedings at each Ordinary Meeting, for approval. The Council shall have the direction of the Cabinet, and shall cause the Specimens to be properly arranged and labelled. It may purchase or make agreements for Specimens.

The Council shall choose a Chairman, who shall preside at its Meetings, but in his absence any other Member may be called to the chair. Any five Members may constitute a Quorum at any stated Meeting, or after due notice of a Special Meeting. The Chairman or any two Members may call a Meeting, but there shall be a regular Meeting on the Friday preceding the last Monday in each month, for the purpose of drawing up a report of its proceedings. The Council shall refer any thing of importance to the Society itself.

OF COMMITTEES.

I. On the first Monthly Meeting after the Election of Officers, there shall be elected five Members, who shall have the superintendance of the Library, and be called the Library Committee. It shall recommend to the Librarian to procure what Books it may be proper to purchase (provided the price of any one work do not exceed twelve dollars, in which case reference must be had to the Society, and provided also that the amount of money laid out for Books, do not exceed the appropriation made by the Society or its Council). The Library Committee shall report to the Council, any new purchases, before the Friday preceding the Monthly Meeting of the Society. It shall form a Catalogue, to be left with the Librarian. It shall

decide what Books may be taken out, and what not, and on what terms, and shall exact fines for non-performance of the conditions. It shall report to the Society the state of the Library, on the last Monday in April.

2. On the last Monday in April, there shall be elected three Members to form the Committee of Finance. It shall examine the Treasurer's account and report thereon, and likewise report on the income and expenditure of the Society for the last year.

3. On the last Monday in April, there shall be elected five Members to form the Committee of Publication, to whom all the Essays read before the Society, shall be referred, to the end that they may select those that may appear of sufficient value, and cause them to be published.

OF THE CABINET.

The Cabinet shall be in charge of the Cabinet-keeper. It shall include four departments, viz: of Zoology, Botany, Mineralogy and Miscellanies, for each of which a separate catalogue shall be made by the Keeper, wherein each specimen shall be entered, and numbered, to correspond with the number affixed to itself. No Specimen shall be allowed to be taken out, unless with the consent of the Council, or its Committee superintending the particular department to which the Specimen belongs. Duplicate Specimens may be exchanged by the Committees upon receiving an equivalent. Donations to the Cabinet shall be entered in the catalogue of the department to which they belong, and the name of the donor entered opposite to those of the Specimens. Every Member shall have access to the Museum,

at the times that may be appointed for visiting it by the Council, and any Member may introduce visitors. No case shall be opened without the knowledge of the Keeper.

OF THE LIBRARY.

The Library shall be in charge of the Librarian, under the superintendance of the Library Committee.

The Library Committee shall cause catalogues of the books to be kept, and shall determine what books may be allowed to circulate, and what may not be taken out of the Library.

Any Member wishing to take out a book, must apply to the Librarian on the proper days, (to be fixed by the Committee,) and the Librarian shall enter in a book, kept for that purpose, the title of the book and date of borrowing, under the name of the said Members. Any book (except periodical works,) may be kept two weeks, and if not then returned, the Members retaining the book shall be subject to a fine of 1s. 3d. and an additional fine of 1s. 3d. for every succeeding week, to be imposed on the eighth day from the preceding one. Periodical works, which have not been three months in the Library, can be retained only seven days, but those that have been in the Library for a longer time, shall be subject to the same rules as other books.

Books returned at the appointed time may, if not wanted by other Members, be renewed for another fortnight.

No book shall be purchased for the Library, unless it shall treat of some scientific subject, or of some branch of Natural History; but donations of books on any subject, may be received.

Books, when bound, shall have the words "Natural History Society" stamped on their backs.

On the Monday preceding the Meeting of the Society in April, all books shall be called in, and the Library examined by the Library Committee.

Any Member injuring or defacing a book shall be fined, or required to replace the work, or pay its value, at the discretion of the Committee.

Fines shall be paid to the Librarian, and by him to the Treasurer.

No Member shall be allowed to have out a book, while his fine remains unpaid.

OF MEETINGS.

1. An Ordinary Meeting of the Society shall be held on the last Monday of every month throughout the year, at which ten Members shall be a quorum.

2. Special Meetings may be called by the President, or one of the Vice-Presidents, provided they be sanctioned by three other Members, and provided that a notice of the object of the Meeting shall be given at the same time with the notification to attend. At such Special Meetings, it shall require fifteen Members to constitute a quorum.

3. At any Meeting of the Society, the President, if present, shall preside, or if not, any of the Vice-Presidents in order of their precedence, and if they shall be absent, any other Member who may be elected; and the person presiding in the absence of the President, shall have the same privileges.

4. At any Ordinary Meeting of the Society,

the following order of business shall be observed, viz:—

1. The Chair shall be taken at 7 o'clock, P. M. from 1st May to 1st November, and at 8 o'clock during the remaining time, for the transaction of private business, which shall not be protracted beyond one hour.

2. The minutes of the last Meeting shall be read by the Recording Secretary.

3. Reports of Committees shall be announced by the President, and read by the Recording Secretary.

4. Communications and Reports shall be read by the Corresponding Secretary.

5. Report of the Council shall be read by the Recording Secretary.

6. Donations and additions to the Museum or Library shall be exposed on the table and notified by the President.

7. Motions, if any, shall be made, and any Miscellaneous business transacted.

8. New Members proposed at the last Meeting shall be ballotted for; and the names of new Members, proposed for ballot at the next Meeting, shall be announced.

9. The Minutes of the Meeting shall be read, which concludes the private business.

10. Visitors may be introduced by permission of the President.

11. Chair taken for public business.

12. Any Essay presented will be read, and time being allowed for conversation thereon, the Society shall adjourn.

INSTRUCTIONS

FOR

Preserving Objects of Natural History,

RESPECTFULLY ADDRESSED

BY THE

NATURAL HISTORY SOCIETY OF MONTREAL,

TO PERSONS WILLING TO ASSIST ITS LABOURS

AND ADD TO ITS MUSEUM.

As the Society is anxious that its Cabinet should contain a Specimen of every known product of the three kingdoms of nature, it has prepared the following instructions for the use of those who may feel an interest in the Society's prosperity and who may be willing to contribute to its collection. The following instructions are drawn up as shortly and as distinctly as possible.

I. THE ANIMAL KINGDOM.

PREPARING THE SPECIMENS.

OF QUADRUPEDS.

Quadrupeds sufficiently small to be inclosed in a bottle ought to be put into spirituous liquor, but those of dimensions too large to be put into spirits, should be skinned and care taken to leave the bones of the feet and head (from which the brains must have been removed) or if that is not possible, at least send the jaws. Before you begin to skin an animal, fill

its mouth with flax, cotton or any soft substance; if there be any wound capable of letting out the blood, cotton or tow must also be introduced into it. This done, stretch out the animal on its back, and taking precisely the middle of the belly, turn back the hairs to the right and to the left and open the skin in a line from the arch or hollow of the groin to the stomach; you may even prolong the opening as far as the collar bone, but as you require more dexterity, you will be enabled to decrease or shorten it. Great care must be taken not to injure the muscles of the body or the entrails which will fall out and soil the skin; these precautions taken, separate the skin from the flesh both to the right and left of the belly (placing pads of tow, moss, cotton or any soft substance, between it and the body as you separate it, as far as possible towards the posterior part). Disengage the *anus*, which separate carefully from the intestines, so as to display that part in its natural arrangement. Cut the tail anteriorly and then separate each thigh at its junction with the bones of the body. Until this moment the animal has remained on its back, but now lay it on its side, the posterior part to the left and the paws turned towards you. In this position the thighs, being separated, recede towards the right, and give more facility for skinning the back; this part is always the easiest. It is sufficient, for Quadrupeds of a middling size, to take the skin in one hand and the body in the other, and by drawing them in contrary directions, to unskin the body as far as the shoulders. When you have severed their fur, cut the arm or fore leg at the shoulder joint, then disengage or separate it from the body, put it again in to the skin and turn the animal to perform the same with the other side. Continue to unskin the neck, and pass the head from within the skin with the help of a knife. Under the head as far as the end of the nose, taking care to cut the ears as near as possible to the skull; be particularly careful not to injure the eyelids, and not to cut the lips too close. When all this is done, separate the head from the trunk, taking away the muscles in such a manner that all the bones which compose it be naked or clean. Enlarge the hole in the skull by means of a sharp instrument and scoop out the brains.—the handle of a spoon is very proper for this operation.) When the head is well eviscerated, put it back into the skin; then take one of the fore legs and skin it as far as possible, always drawing it towards you and pushing the skin the contrary way; that done, take away the whole of the flesh, carefully preserving the ligaments which unite the bones, then replace the leg in its skin and operate upon the other. Afterwards treat the hind legs in the same way—that is to say, skin them as far as the claws, separate the tendons and ligaments from the muscles, leave them adhering to the head of the knee, then take all the flesh of the bones and turn the leg back in to the skin. At only now remains to skin the trunk which is the most difficult. To enable you to do so, disengage or bend the first two or three joints; fix them strongly with a cord, which fasten to a cramp iron or to a wall hook; pass a cleit stick between the cord which holds the tail and the skin, that is, on the bare joints, which are of course placed within the cord; with a hand on each side draw the stick towards the extremity and the tail comes out of its sheath. After having skinned up the body, thighs, head, and eyes with tow, or other soft substance in the same quantity as the flesh taken from it, and rubbing well the inside of the skin with pepper or any strong aromatic substance which will keep away vermin, and sprinkling some of the same stuff on the outside and arranging the body in a convenient position; the skin is then in a fit state for being packed.

When you can add the perfect skeleton of the same it would be a great service to science by aiding our collection of objects in Comparative

Anatomy. It is not necessary to mount the skeletons, but it is sufficient after having boiled the bones, taken the flesh off, and dried them, to put all those belonging to the same animal in a bag (connecting together and the bones of the same part,) filling it up with moss, wool, shreds of paper or any other soft and dry substance, that they may not bruise each other. Envelope these in paper which are very fragile, and take great care not to lose any.

OF BIRDS.

If you can procure birds, take care to proportion the shot to their size; not to injure the skins. When the bird falls, wipe the blood away as much as possible, and put a little cotton, moss or tow in the neck, that the blood may not run from it and injure the feathers; put any loose of the head; should they be soiled wash the plumage with a sponge and warm water. After the head is cooled and the blood is coagulated, take it by the claws and the tail to place it in a paper, of the form of a hollow cone. These instructions relate to the manner of bringing of birds to this piece of operation. Birds are skinned like quadrupeds. The incision may be made either along the middle of the body or under the wing of a size sufficient to allow the body to pass through. But take care to preserve the feet and head with the same precautions, but they should be more immediately skinned, because when putrefaction takes place, the feathers fall off. In cutting the skin, take care to bend back the feathers that they may not be soiled. Leave the scapula bone near the tail with the skin, otherwise the feathers of the tail would be liable to fall off; also leave the bones at the extremity of the wings. The tongue and eyes are to be carefully removed. It is desirable, if possible, to procure at the same time, the male and female, and individuals of the same species of different ages; for birds alter much according to their age; there are several which have even been taken for different species. It is so very useful to have the nests and eggs. To preserve the eggs, make a little hole at one end, empty it and fill it up again with wax, or leave it empty. The skeletons of those birds too large to be put in spirits, should also be sent. It is useless to stuff the birds. They would occupy too much room, and this operation, which cannot be done well by any one who is not experienced in it, is much better performed when the skins have arrived at their destination. It is sufficient for the skins, the feet, and head, to be well preserved.

OF FISH, REPTILES, &c.

As to *fish*, the species differ, not only according to the country, but even according to the rivers and lakes they inhabit; it is therefore essential that all be procured. Put them into spirits, or when they are too large, send the skin only, merely dried, taking care to preserve the head and fins. Lay the fish, which should be fresh, on its side, and cut out the gills with a pair of scissors; then fill up the cavity with tow, to prevent blood or moisture flowing out; when this is done, with a damp sponge, carefully wipe the sides of the fish, raise the fins, and gently extend them. Then cut two pieces of paper the shape of each fin, but a little larger; rub a solution of gum arabic on one of the pieces, then place it under the fin and spread it out, press the corresponding piece on the top, where it will adhere, and drying in a few minutes, will keep the parts extended. Take a piece of thin silk, or gauze paper, and neatly

cover one side of the fish. The natural gluten which covers the scale, will cause it to adhere firmly. It will firmly dry and form a strong case, by which the scales will be preserved in their natural position while you take off the skin. After the first coat is dry, you can apply one or two more, if necessary, using gum-water to the papers. When they are thoroughly dry, turn the fish on a soft cloth, with the uncovered side upwards; open it with sharp scissors, from the tail to near the nose, along the lateral line, cutting open the cheek to enable you to open the cheek of the opposite side under the bone; for unless this be done, and the cavity be filled with tow or cotton, it will inevitably shrink. To detach the skin from the flesh, begin at the head and work downwards, using a sharp knife in cleaning the flesh from the skin, cutting off the fin bone with scissors. Take away from the skin as much matter as possible, and dust it with pepper, &c. Stuff the skin to its proper dimensions, with tow or cotton, and sew up the opening with a needle and thread. In a few days it will dry, when the papers may be taken off by dauping them with a sponge. Cover in tow and pack in boxes. Serpents may be managed in the same way, or preserved in spirits. It is the same with reptiles. In skinning serpents, take care not to injure the scales; and great caution must be used not to break the tails of lizards. It is desirable to send the skeletons of fish and reptiles which are too large to be put into spirits; these skeletons need not be mounted. It is sufficient to take away the flesh rudely and to dry the bones together thoroughly without separating them. The whole skeleton should be placed in a box with tow, moss, cotton or very fine dry sand. If it be too long, it may be divided into two or three parts.

OF INSECTS.

Insects are very various according to the climate or the nature of the soil, and are the most difficult to procure. If you feel inclined to collect in this branch of Zoology do not confine yourself to the largest and richest in colour, but collect all without distinction. Catch those which are furnished with wings and fly about plants, with small fine nets; those which swim in the water by the same means. Seize those with pincers which live on putrid and disgusting substances and throw them into any kind of spirits to clean them. A multitude of insects nourish themselves on trees; procure the greater part by carefully searching under the old barks of the trunks and by shaking the branches over a cloth or reversed umbrella. Insects may be killed by inverting over them a glass tumbler or other vessel and bringing it to the edge of the table, holding two or three lighted matches under it, or they may be killed by touching their heads with spirits of turpentine or immersing them in spirits of wine. When you take an insect, seize it by the breast and stick it in a box, on cork, or wax, with a long pin. To prevent the injury from the wings continuing to flutter, pin a small strip of paper across them which may remain till they are dry. When the insects are dry put them into small thin boxes, with cork or soft wood, as the cross-cut of deal, at the bottom, pinning them very securely, to prevent their being detached. It is very useful to procure the caterpillar as well as the butterfly. When you find the caterpillar only, it should be put into a box with some leaves of the plant on which it was found, that it may transform itself. A small hole should be made in the box to admit the air. All insects, except butterflies may be put into spirits; it is the best method of sending those which are large and it has the advantage of preserving the interior organs, which

may be examined when there is occasion. As heavy insects may unfit themselves from the cork or wax in the small box and one loose insect may break all the rest, it is a more simple method of preserving those of the beetle kind to place them, when dry, in a box of very fine sand. First put a row of insects on a layer of sand, then cover them with another layer of sand about an inch thick; then place a second row of insects and continue this method until the box is quite full: the sand must be well heaped up, that nothing may be deranged by the carriage. This is also a good method for crabs and such like animals. It is evident that you cannot employ it for butterflies or any other animals of a soft substance. The first ought to be put in boxes—the latter in spirits. Send, in particular, spiders and insects said to be venomous; those which are most destructive, such as ants, &c. and add the nests when they are sufficiently solid for conveyance; the insects to which medical properties are attributed; those which are employed in dyeing or any other useful purposes, and also all productions of insects which may interest by their singularity, and which are calculated to give new ideas of the instinct of these animals. It must be remembered, in collecting insects, to send a branch or leaf of the tree or plant with which they nourish themselves, and send this with a number corresponding to that of the insect.

OF SHELL FISH.

Immediately after gathering the shells, dip them in scalding water, that the animal inhabitants may be destroyed; after which let them remain for two or three minutes to cool; then pick out the animal with a pointed instrument: put them in cold water, in which they may lie till they are taken out to be cleaned. Shells encrusted with extraneous matter, should be allowed to steep two or three minutes in warm water, in order to moisten these substances, and to extract, as much as possible, the marine salts. Brush them well with a soft brush; strong soap may be used, with a piece of woollen or linen cloth, to rub them. Finish them with a soft brush and fine emery or sand, and pack them in cotton. Land shells are particularly valuable. As to crabs and lobsters, note the names under which they are known; those which inhabit the sea-shores, those of fresh water, those which live on land and those which are eaten by the natives. Content yourselves with sending the shell only of those which are of larger size and wash them well in fresh water before you dry them. The smaller kind should be put in spirits; but before you do so it is very necessary to cleanse them in fresh water to free them entirely from the dirt or marine salt with which they are impregnated. Without this, the greater part would be destroyed, even in the spirits.

It is to be desired that every animal which is sent in the skin, in spirits, in the skeleton, &c. should be accompanied by a note, stating precisely the country in which the animal was found; the season in which it was taken; the manner in which it nourished itself; its habits; the name it bore in its own country; if it be useful or destructive; the uses that are made of its skin, its flesh, its fat, &c.; the popular opinions or superstitions which relate to it amongst the natives; these notes should each have a number corresponding to that of the animal to which they relate. It is essential that these numbers should not be written on white paper or on parchment but either painted in oil on wood or metal or stamped on hard substances and fastened with a brass wire or very strong cord, either to the skins enclosed in the cases, or to the bottles, &c. which contain the animals.

OF PACKING ZOOLOGICAL OBJECTS.

We have previously only alluded to the preparing of the *Specimens* with which our friends may be willing to favor our Museum, but we must now speak of the method of packing these objects, so that they may arrive in a good state of preservation.

When you pack the skin of an animal, commence by shaking away the insects already lodged; it will then be sufficient to pass all over the inside of the skin with a brush dipped in spirits of turpentine. Pack the skin lightly in cotton or any soft substance impregnated with turpentine, camphor, or any such article. Then place the skin in the case, which cover all over with pitch to defend it from damp, and to prevent the air from getting in. For want of spirits of turpentine, use a decoction of very bitter and aromatic herbs, with which wet the skins before you enclose them, and besprinkle them internally and externally with pounded tobacco, pepper or allspice. The same precautions are used for birds; each bird must have a little cotton inside it, not to give it entirely its form but to prevent the different parts of the skin from touching. It should then be placed in a paper bag well closed and the bags put into a case covered with pitch. The above methods are simple and easy and take but little time. As to the preservation of animals in spirituous liquors, of all vessels, glass bottles are the best, for whatever precautions are taken, a portion of the liquor will evaporate through the pores of wood; square bottles are to be preferred, if easily had, because they arrange better in cases. The perfect preservation of the animal depends on the quantity of the liquor, the manner of placing them in the bottles, and the method of sealing the bottles. Gin, Rum, Brandy, in short all spirituous liquors are equally good, but those which are least coloured are preferred. Before you put the animal in the liquor take away all the fat and free it from all dirt which would soil it; then take precautions that it may not touch the bottom of the vessel; without this it not only sinks down but becomes corrupted: or if sufficiently strong to bear it, a thread may be passed through the cork and through the object so as to suspend it, and thus you may place several animals in the same vessel either by the side of one another or at different heights; they will float in the liquor without touching, and the mucous substances which detach themselves from them, fall to the bottom of the vessel, or you may content yourselves by placing each animal in a kind of net or bag; tie these bags to the cork and they remain suspended in the vessel. Make a little incision in the belly of animals with vertebrae or central column of the skeleton, that this liquor may penetrate into the interior of the body. Camphorated spirits are good because the camphor augments the preserving quality of the liquor without adding to its force. It is requisite to add to the liquor after the animal has been in it some days, to ensure its preservation: this precaution is especially necessary for those which are most susceptible of corruption. Then seal the bottles; you should have a stuff easily prepared, which dries and acquires all its solidity even in the moment of employing it; on which the spirits has no effect, and which perfectly adheres to the glass. The following will do: common rosin, yellow wax, and red ochre, or pounded brick, in the portions according to consistence, and it may be applied by a linen or a stick, or if to a small phial, by immersing its neck. Cork stoppers are preferable to all others, because those of glass often break from various causes. It is useful again to cover the bottles thus closed with a piece of linen, firmly tied, and imbued with liquid pitch, and for large bottles, to support the cork with a strong piece

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of string which by being fastened to the circumference of the bottle, forms a cross above the cork. Bottles thus prepared, may without inconvenience, be turned over in all directions, exposed to all the tossings of the tempest, or transportation, and support the strongest heat without the liquor escaping.

II. VEGETABLE KINGDOM.

The treasures of this kingdom are not less important or interesting than that of the animal, and its objects though more numerous, are more easily procured and transported. All plants which are destined for preservation, ought, as often as possible, to be gathered in flower and in fruit. When the plant is small take it entire, even with the root ; when it is large, cut branches about 12 to 15 inches long. The easiest method and one of the best is to use an old book suited to the size of the plant. Place the plant with the parts sufficiently spread out on a leaf and close the book upon it. Then put over it a piece of wood as large or larger than the book on which the weight is to be placed, and the whole to remain so in a dry place for five or six days. Several plants, if not very thick, may be put into the same book and pressed at the same time, taking care to put them in different parts of the book. After they are dry they may be easily kept in a book, and any notices, written on paper, and affixed to them by a hole in the paper and passing the stalk through it. When no book large enough is at hand, put the plants well extended between leaves of common news-paper or blotting-paper, using similar pressure as above, which must not be removed till they have become dry. It is generally sufficient for their perfect drying, that the specimens should be separated by several sheets of brown paper. In humid countries and seasons, it is desirable to accelerate their drying by an artificial heat. For that purpose, place a number of plants between two plants, separate from each other by two or three sheets of paper, and place this packed in a stove or oven, after the bread is taken out ; this quick method does not even alter the colour. When they are dry, change the paper. There are some plants which are very watery, and which continue to vegetate in the herbaria several months after they have been placed there. When these plants are gathered in the state in which you wish to preserve them, plunge them for a minute into boiling water, then put them between two leaves of brown paper, they will afterwards dry quickly, as the action of the boiling water will have destroyed the life of the plant. You will take notice that in drying out any plant for drying, you will put it into such a position as will at least shew to advantage the form of the flowers, leaves, &c. without putting it into any unnatural position. Grasses, which should always be gathered in flower and fruit, need no further preparation than drying and not pressed. To suit them to the size of the book or parcel that is to hold them they may be doubled two or three times ; mosses, likewise, need no further preparation than mere drying and may be packed by rolling the heap of moss in a paper inclosing the necessary notices of its locality, time of gathering, abundance, &c. &c.

On each packet of plants of the same species, put a note indicating the name the plant bears in its own country, the height of the country above the level of the sea, if known ; in short the same notes which are re-

quired for animals. It is also useful to notice the heights of the plant, the colour of its flowers and the odour they exhale, as these cannot always be learned from dried specimens.

Herbals, when they are perfectly dry, should be packed in cases covered with pitch to defend them from mice and insects; and it will be prudent to add a little cotton imbued with turpentine or any aromatic substance.

The fruits of trees may also be sent, the dried in cases with tickets which indicate the branch or specimen to which they belong; the pulp should be put in spirits, in separate phials. Gums, resins and other excrements of trees, should also be sent in the same manner; and also packed similarly to the herbals with similar notes.

As seeds may enable us to propagate plants not before known; they will be very acceptable. They should be gathered when perfectly ripe, and well wrapped up (with a paper giving the name, locality, properties, &c. of the plant which produces), to keep them from the least exposure to damp. You cannot take too much care of assuring yourself of the ripeness of the seeds as it is useless to send seeds not arrived at maturity.

Plants which are used in medicine, and are used by the inhabitants for healing purposes, and all vegetable poisons should particularly be sent, with notices of their properties attached.

It is also desirable to send specimens of useful woods. These specimens ought to be about four inches long, and if possible, the usual width of the tree; also a longitudinal and transversal cut of the tree, but it is most essential to put a number on the wood, corresponding to the branch of the tree in the herbal, for botanists are still ignorant to what trees several of the woods belong which are made use of by the natives or used in the commerce and trade of the country.

III. MINERAL KINGDOM.

Minerals form the third kingdom of nature and are equally interesting and equally useful as the productions of the other two kingdoms. In collecting fragments or specimens of rocks, minerals, volcanic productions or fossil organised bodies, it is most essential to note their stratification well, that is to say, the nature of the place in which they are found, and their relative position with the minerals which environ them. In detaching specimens from the mass, take care to leave round the principal metal or crystal, if such is the nature of the mineral, either portions of the other metals or minerals which are associated with it or of the stony substances which often accompany it, especially those which are crystallized. If you find earths which contain the remains of organized beings, such as the bones of animals, shells, impressions of fish and vegetables, collect, with care, specimens of their different bodies, having them enveloped in a portion of the earth or stone in which they were fixed. In case you should find any traces of volcanic origin, procure specimens of the different substances thrown up by explosions, some of which are in a state of stone, others similar to glass, others in a state of scoria or lava.

A ticket should be fixed to each specimen indicating the name of the country where it was found, the spot from which it was taken, and when.

Wherever warm or mineral waters are found, care should be taken to fill phials with them, which should be well corked and sealed. A note of

the place where found, the time and their probable cause, should accompany each phial.

In some places foul or highly impregnated gases arise from the bowels of the earth; these can be taken by placing a small tube or pipe over the place where the gas issues; this tube leading into the mouth of a reversed phial, filled with water, will then conduct the gas, and by the accession of gas, the water becomes displaced. It should be then well corked and sealed.

It would be useful to collect the sand of small rivers, especially those which carry metallic spangles with them, but the sand must be taken as far from their mouths as possible.

In some countries, solitary masses are found, to which the people attribute a singular origin; take fragments of them; some of them may have fallen from the sky, others may have been transported by the revolutions of the Globe. Those which have been positively known to have fallen should be also noticed. A note mentioning the probable size of their masses, when and where found, should accompany them.

In gathering the fragments of rocks, mines, volcanic productions, fossil organized bodies, the most essential thing is to notice their bearing, that is to say, the nature of the soil where they are found, and their position relative to the minerals which environ them. You need not trouble yourself with large specimens; as pieces from $\frac{1}{4}$ to 3 inches, and $\frac{1}{2}$ inch thick are sufficient. Take large masses only when they contain a fossil animal.

To pack the specimens, cover them first with moss, or soft substances; then roll them in paper; and over that brown paper, inclosing within the packet the note descriptive of the mineral. Arrange carefully all the specimens in a case, close upon one another, filling the interstices well with moss, &c. so that the whole forms a mass, which nothing can disturb. The case should be covered with pitch, to defend it from air and damp. When the cases are filled, closed and covered with pitch, they should be kept as steady as possible, not tumbled over carelessly, and should not on any account be opened or unpacked, until they reach their destination, as there is always a risk of their being broken or injured.

Addresses, weapons, utensils, manufactures, or productions of the natives will always be highly acceptable to the Society. To each article should be attached a small note stating the use of each article, how and where made, and any other information concerning it, that may prove useful.

We shall always feel grateful, even for the slightest favors and acknowledgements, but at the same time we would hint, that the more attention you can afford to our instructions, the more you will realize our views for the benefit of science and our country. These instructions have been compiled for the use of those who have not hitherto devoted themselves to the study of Natural History, but it is hoped they may prove neither prolix, nor obscure.

We shall always gratefully return, while in our power such duplicates as you may desire, to enrich your own Cabinet, if you have commenced any.

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H. HILL, *A. C. G.*

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MONTREAL, March, 1822.



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