Directions for collecting and preserving animals : addressed by the Board of Curators of the Museum of the Royal College of Surgeons in London to professional, scientific, and other individuals : with an invitation for contributions to the Museum of animal and vegetable productions, fossil remains, anatomical preparations, casts, models, paintings, drawings, or engravings, which may conduce to the illustration of the animal oeconomy in its healthy and morbid conditions.

DIRECTIONS

FOR

COLLECTING AND PRESERVING ANIMALS AND PARTS OF ANIMALS

FOR

ANATOMICAL PURPOSES.

DIRECTIONS

FOR

COLLECTING AND PRESERVING

ANIMALS;

ADDRESSED BY

THE BOARD OF CURATORS

OF

THE MUSEUM OF
THE ROYAL COLLEGE OF SURGEONS IN LONDON

TO

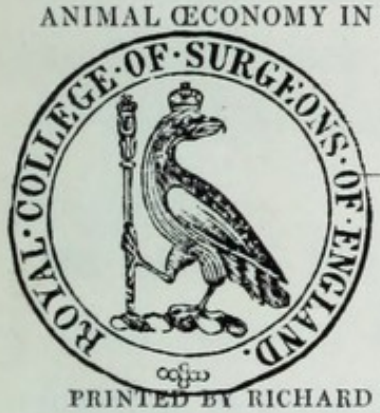
PROFESSIONAL, SCIENTIFIC, AND OTHER INDIVIDUALS,

WITH AN

INVITATION FOR CONTRIBUTIONS TO

THE MUSEUM

OF ANIMAL AND VEGETABLE PRODUCTIONS, FOSSIL REMAINS,
ANATOMICAL PREPARATIONS, CASTS, MODELS,
PAINTINGS, DRAWINGS, OR ENGRAVINGS,
WHICH MAY CONDUCE TO THE ILLUSTRATION OF THE
ANIMAL ŒCONOMY IN ITS HEALTHY AND MORBID CONDITIONS.



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1835.

ROYAL COLLEGE OF SURGEONS IN LONDON.

THE Council being desirous not only to maintain and preserve the Hunterian Collection, but also by suitable additions to make it as conducive as possible to the illustration of the structure and physiology of organized beings, and to the advancement of Surgery and the art of Healing generally, solicit contributions to the Museum from Professional, Scientific, and other Individuals, of such Preparations, Casts, Models, Paintings, Drawings, Engravings, and Chirurgical Instruments as may promote these objects.

The following DIRECTIONS, principally drawn up by JOHN HUNTER, are proffered to facilitate the endeavours of those Friends to Science who may be

inclined to further the designs of the Council, and who may not be familiar with the art of preparing and preserving animal substances for anatomical purposes.

OF THE METHODS OF CATCHING AND PRESERVING ANIMALS.

ALL animals are naturally wild, and in many instances it requires considerable art to catch them. The more perfect animals, which have much progressive motion, require to be taken by means which generally produce some degree of injury to their different parts, and often to their external form; this injury will be in proportion to the difficulty and mode of capture.

Quadrupeds are in general either caught in traps or shot, and consequently some parts of the body are injured; but this is unavoidable. Birds are usually shot, to the injury of their plumage and often of their internal structure.

Snakes, Lizards, and indeed Reptiles in general, are commonly caught without being previously wounded, and therefore suffer less in their external form than birds; but even these may be considerably damaged if care be not taken; for as they are

generally caught in the breeding-season, it is very possible that the organs of generation, and the parts contained in them, as eggs, &c., may be crushed; it is therefore proper to seize them by the neck, and immediately to immerse them in spirit, so as to drown them, or to keep them in a bag until spirit* can be procured.

Turtles, Crocodiles, Fishes, Crustaceans, and Insects are liable to little or no injury to their form or structure from the mode of capture.

The softer animals, most of which inhabit the sea, suffer very little from the manner of catching them; but as their shape and size admit of considerable variation, their form may be much altered from the manner in which they die. Animals without internal hard parts to determine their shape or locomotion, yet having a considerable quantity of muscular contraction, vary their shape according to circumstances; of this kind are the Sea Anemones (*Actiniæ*), Priapi or *Holothuriæ*, Shell-fish, Slugs, Medusæ, &c.: these should be allowed to die gradually in the water they are accustomed to; by which means they die in a relaxed state, and display more of their natural external form: but it is desirable to have specimens in the different degrees of expansion or contraction. When dead they are

* Colourless alcoholic spirit rather above proof is the most fit.

immediately to be put into spirit, for fear of putrefaction, which otherwise rapidly takes place.

A sketch or drawing of Molluscous or other animals of which the form and colour are materially altered by death or when put into spirit, will greatly assist in rendering a description more intelligible. The admeasurements, also, of an animal where parts only are preserved, are very necessary; and the sex should be noted where it is not obvious from the parts preserved.

Animals, of whatever class, which are small enough to be preserved whole, should be kept in that state.

Those which are too large to be transmitted entire in spirit, should be divided into such parts as characterize them. When this division into parts is requisite, it will be necessary previously to take notice of all the external appearances, the number of nipples in the female, and their situation, whether between the anterior extremities, as in the Monkey tribe, Bats, Elephant, Dugong, &c.; or all along the belly, as in the Sow, Bitch, Rat, &c.; or between the hind legs, as in the Mare, Cow, &c. If the female cannot be procured, then examine the nipples of the male; and indeed it is proper to examine every male, for it sometimes happens that these parts are concealed, as in the Horse. It is hardly necessary

to describe the external parts of the female, as, generally, the whole of them may be preserved.

The situation and external appearances of the penis in its natural state must be observed, whether it extends along the abdomen, as in the Dog; or point backwards, as in the Cat, Rat, Rabbit, &c.; whether covered by the common skin, as in the Bull, Deer, Bear; or by a proper skin, and only attached to the belly at the upper side, as in a Dog, Horse, &c. And any other external appearance which cannot be preserved, or where the parts are too large to be kept whole, should be particularly noticed and described.

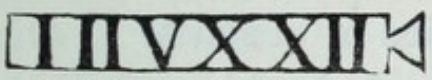
When the examination has proceeded thus far, the dissection is to be begun, by opening the abdomen, &c., to see what internal parts are worthy of preservation.

When the animal is opened for this purpose, it will be proper to take a general view of the viscera in their natural situation; to ascertain the number of lobes of the liver, whether there be a gall-bladder, &c., the situation and form of the stomach, spleen, cæcum, kidneys, &c., also to make such observations upon them as may be thought necessary*; after which the parts may be separated and severally distinguished by appropriate labels.

* See the Table of Notes for Examination of Animals, p. 53.

Animals whose food is not exactly known should have the contents of the stomach and intestines examined, to ascertain, if possible, what food they had last taken: the kind of fæces contained in the colon and rectum should also be noted.

The stomach and alimentary canal of Fishes and other marine animals merit particular examination, as frequently containing not only animals and parts of animals which inhabit great depths, and other situations equally beyond the reach of ordinary observation, but also singularly formed intestinal worms.

Memoranda should be made of the localities from which specimens have been obtained; whether at sea or on land; the period of the year when taken, as material to determine the breeding-season, &c.; the vernacular names, and the meaning thereof, if any, in the language of the country. If there be no name for a specimen, a number should be attached to it, corresponding with that of the description or memorandum respecting it. A wooden tally or label should be attached to each specimen, where several are put into the same bottle; these are easily made with a penknife, thus —  as tallies of sheet lead, parchment, leather, &c. are liable to be defaced or obliterated.

Such tallies are preferable also for dried specimens, as those written with ink are liable to be defaced by moisture or insects during the voyage.

The bottles being numbered, little trouble will be required to keep an account of their contents, which will add greatly to their value. If this be neglected, much confusion and uncertainty may ensue.

A description should be taken of form, colour, &c. while the animal is alive, or immediately after death, before it be put into spirit; which frequently produces a collapse or contraction of parts, and changes or destroys the colours, particularly those which are delicate or evanescent.

OF QUADRUPEDS.

The head should be preserved on account of the teeth; but if too large for a cask or bottle, that part in which the teeth are placed may be cut off; but this will seldom be necessary.

The feet and tail may be kept attached to the skin and dried; or if the skin is not preserved, the feet and tail only, either dried or in spirit.

The œsophagus and stomach should be preserved in spirit, with a portion of the duodenum; and the cæcum, if any, with a small portion of the ileum and

colon. If the animal be not too large, it will be preferable to cut off from the mesentery the jejunum and ileum, which (after their length and circumference, and the nature of their contents have been ascertained,) may be thrown away, and then to strip down from the spine the contents of the abdomen, beginning at the diaphragm, so as to have the liver, stomach, spleen, pancreas, colon, &c., all with their attachments, taken out together as low as the rectum, where it lies in the pelvis, and, after being cleansed and the contents examined, put into spirits.

The heart and lungs may be preserved together, or, if too large, the heart alone with the large blood-vessels.

The contents of the pelvis, viz., the bladder and rectum, with the internal parts of generation both male and female; also the external parts, not separated from the internal, with a large portion of the surrounding skin, should be left attached in their natural state, and preserved in spirit.

If the female parts are in a state of impregnation, the whole are to be taken out as before described, without opening the uterus unless for the purpose of admitting the spirit for the preservation of its contents, where of large size.

The young of very large animals, as Whales, Seals, the Walrus, Elephants, &c., and all abortions, should be preserved entire: but if a young cetaceous animal be too large, the tail may be cut off below the anus, and the body put into spirit; and if this should be too big for one cask, the head may be taken off and preserved in another.

Of a full-grown Whale or other large animal the following parts should be preserved.

The eyes, with the surrounding external skin, their muscles and fat, in an entire mass. The organs of hearing. The brain. Sections of the spinal chord. The supra-renal glands. The ganglions of the sympathetic nerve. The beginning of the aorta and pulmonary artery, for the valves.

The mammæ of the female, with part of the surrounding skin; also the ovaria and uterus. The fœtus, when found in the belly, to be taken out with the whole of the uterus, vagina, ovaria, &c.

The penis of the male taken off as far back as to include the anus with it.

The bones of animals are to be preserved; and, if possible, those of full-grown specimens, both male and female, distinguishing each.

The flesh should be stripped off, and the bones either boiled, or put into a cask with water, and

securely headed in, if the time and circumstances will not allow of maceration.

To preserve the bones of an animal for a skeleton, it is desirable that as much of the flesh should be removed as possible while quite fresh, without cutting or defacing the surface of the bones; and, if opportunity allows, it is advisable to soak them for several hours in water, frequently changed, to separate the blood; and the brain may be broken down and extracted by means of a small flattened stick, otherwise the skull will be discoloured.

The bones should be allowed to remain connected as much as possible, and, when dried in a tolerably straight position: they may be packed in sawdust, or shavings of deal, or any other white wood, which will not cause discolouration.

Besides an entire set of bones, it is desirable that a skull or two, showing the teeth in various stages of growth, be preserved. The teeth to be as perfect as possible, and if any become loose or fall out, they may be fixed in their sockets with strong gum-water or glue, but never with paint or putty; or the loose teeth may be tied up in a piece of linen, and securely attached to the skull.

Delicate specimens of skulls, or sets of bones, should be inclosed in small separate boxes, to pre-

vent their being crushed by larger specimens, and many may then be packed in one large case.

All the parts of one Quadruped should be kept together, and separate from those of another.

OF BIRDS.

Some birds are too large to be preserved entire; therefore it becomes necessary to observe and describe or delineate their external appearances before the parts are separated.

Birds have few internal parts which are necessary to be preserved The heart and kidneys are nearly the same, I believe, in all birds.

The liver, stomach, intestines, ovary, oviduct, &c., may all be taken out as low as the anus, and preserved in spirit.

The bills and tracheæ, with the lower larynx, should be preserved in spirit by themselves; and when many specimens of a rare or curious bird are procured, the heads of a few of them should be taken off and preserved in spirit.

The legs and feet should be preserved, but they may be dried.

OF REPTILES.

When Alligators, Crocodiles, Turtles, or Tortoises are too large to be preserved whole, some parts, as the head, the whole viscera stripped down from the neck to the anus, and also the anus, should be put into spirit. The bones of such specimens are especially desirable. The eggs at different stages of development should be preserved in spirit, as also the young animals.

Lizards are to be preserved whole.

Snakes may be preserved whole, or in part, especially the heads, both of the poisonous and innocuous species, for the examination of their teeth and fangs.

OF FISHES.

In a Fish the external appearances should be attended to, its length, depth and thickness, the number of fins, their shape, where placed, the number of hard and soft rays supporting the fins, &c.

In very large specimens of the Shark or Ray kind, &c., the abdomen should be first opened, then the head taken off by dividing the fish below the heart,

across the upper part of the liver, by which means the mouths of the oviducts, if it be a female, the heart, and head are all preserved together.

The tail, if a thick one, as that of a Shark, may be taken off a little below the anus, and the trunk alone preserved for examination. If the trunk be too large, it should be cut through above the pelvis, and the parts contained in the hinder portion, as the claspers of the male, should be preserved in spirit.

If a female, separate the two oviducts through their whole length, where they run along the abdomen, on each side of the spine; but keep them attached to the pelvis in front, and preserve the whole.

If with young, or eggs, take the whole out in the same way, without opening the oviducts.

The peculiarities of the fœtus in these animals should be attended to.

If not of the Ray or Shark kind, take out such parts from the abdomen as are uncommon or singular.

If fish of the roe-kind, (i. e. Osseous and Cyclostomous Fishes,) then cut transversely through the fish near the lower part of the roe, some way above the anus. This saves part of the roe, with the connexion between it and the anus, the principal parts concerned in generation.

The tail may be cut off some inches below the anus.

The stomach and intestines may be saved, if anything particular is observed in them.

Eyes of fishes are proper objects of preservation.

Separate and preserve the heads of such Fishes as have anything singular about the teeth or gills, and are too large to be preserved entire.

If there should be small ones of the same kind, they are to be kept whole; but still preserve such parts of the large specimens as are curious.

OF CRUSTACEANS AND INSECTS.

Lobsters, Crabs, Beetles, Flies, Butterflies, &c., may be dried, because their external covering is their hardest part, and alters little by shrinking. This is to be done when the external form only is required for examination.

In preparing them for drying, great care is to be taken to preserve all their external parts as perfect and as expressive of the natural progressive action as possible.

Crabs, Lobsters, and Crawfish, when dried, should be wrapt in very soft paper, and then packed in cotton so as not to allow of their being displaced in the case, nor to touch one another.

Insects should be pinned down upon a board or piece of cork, or upon wax which has been melted and poured along the bottom of a flat box: the pin should be greased or oiled, to prevent rust, which would render it difficult to take off the insect. If the pins were pointed at both ends, they would the more readily admit of being turned. The pin must be made so fast in either of these substances as to allow of the motion of the box in all directions. and the fastening must be in proportion to the weight of the animal. To preserve them for anatomical examination they should be put into bottles with spirit.

Lobsters, Crawfish, Crabs, Beetles, may be put into a bottle all together; or if each order be kept separate, yet several specimens may be kept together.

Butterflies, Moths, Bees, should be kept by themselves; for if put into the same bottle with the above, they would be injured.

OF EGGS.

To preserve the eggs of Birds with their nests, each nest should be put into a round box just large enough to contain it. After having made a small perforation at each end of the eggs, and expelled their

contents, some cotton should be laid upon them to keep them from being moved about, and the whole covered with the lid.

Large eggs, as those of the Ostrich and Cassowary, at different periods of incubation, should be preserved in spirit.

The eggs of Turtles, Lizards, Crocodiles, Snakes, &c., should be collected, and similarly preserved at different periods after being deposited, until the fœtus be excluded.

A perforation should be made at each end of the egg, by which the spirit will have access to the inside, and the contents be more effectually preserved.

The eggs of all sorts of insects should be preserved in spirit for the same purpose.

VARIOUS OBSERVATIONS ON THE MEANS OF PRESERVING ANIMALS.

An animal of the firmest kind, in a temperate climate, will generally require a quantity of proof spirit nearly equal to its own weight, to preserve it from putrefaction.

Animals of the mixed kind, neither hard nor soft, such as many of the soft Fishes, require rather more spirit than their own weight.

Soft or watery animals, such as many molluscous and other sea animals, require rectified spirit, and nearly the same quantity as the above. But these are relative circumstances, which will vary according to the climate, and the state of the animal at the time. If the climate be very hot, and the animals are to be kept in that climate for some time, or if the parts are not very fresh, more spirit will be required.

This proportion of spirit should be particularly attended to when parts are large; for a very small animal or part will generally have more spirit added to it than what is here directed, while a large animal or part obtains less.

Animals which I call firm are those of the Quadruped kind, as Rats, Mice, &c.; and indeed Snakes, Lizards, and all Insects (as far as respects the quantity of spirit) may be considered in the same class.

In the mixed kind I would include most sorts of Fish; however, there are many Fish that may be included with the first.

Of the watery or pulpy kind, I reckon Sepiæ, Medusæ, Echini, Starfish, and likewise all those that appear to be gelatinous, for their internal structure is extremely tender.

If the animal is small, as a Rat or Mouse, it may

be preserved by immersing it in its own weight of spirit; but if some spirit is thrown into the abdomen, so much the better.

If it is a large animal, as a Dog*, it ought to have the thorax and abdomen filled with spirit; for before the spirit can penetrate through the cutis, the internal parts will become putrid.

A trochar and syringe will answer for filling both these cavities.

Large fish should be preserved in the same way.

In very soft animals the spirit will generally penetrate sufficiently fast to preserve the whole.

Animals preserved for their external figure should be suspended nearly in the attitudes in which they are designed to be kept.

Animals which are preserved merely for dissection, may be put into a bottle or cask without suspension, and even more than one or two in the same vessel, paying strict attention to the strength and proportion of the spirit.

If two are put into a cask at once, they should be kept apart for some time, as they make too large a mass when close together for the spirit to penetrate.

More than one or two may be put into the same

* I call them large animals, because much larger can seldom be brought home whole.

vessel when they are suspended, because then they are not allowed to press on one another.

According to our proportion of animal and spirit, a vessel may be half filled with them.

Birds are seldom so large but that they may be kept in spirit, so as to preserve external appearances; therefore they should all be suspended with some care. Many may be put into one vessel, but must not be squeezed upon one another; and the mouth of the vessel should be wide enough to let them pass both with and against the direction of the feathers.

If the bird was put into a proper position, the feathers made smooth, and rolled up with a fine linen roller, it might still better preserve their external form.

If a pipe was put into the mouth, and spirit thrown down the windpipe, it would pass through almost the whole body by means of the air-cells; and it would therefore be unnecessary to inject any by the anus or abdomen.

Animals of the Lobster or Crab kind may be put into a vessel without suspension, and they should be wrapped up in linen, if preserved in this way, for external form. They should be nearly of the same size, as the larger will break the legs of the smaller if put all together.

Animals of the soft or pulpy kind should be kept apart from others which are hard, more especially if preserved for their external form, and should not be crowded. If possible, they ought to be suspended; but many of them are not firm enough to be capable of supporting their own weight upon threads; these should be put into separate bottles.

Shell-fish may be put into the vessels in any manner, as the shell preserves them from pressure; but if they died projecting out of the shell, they should be suspended in the spirit.

If of the spiral kind, a small piece of the shell should be broken off at the tip, to allow the spirit to enter the posterior parts; for the body of the animal fills up the whole mouth of the shell, and the other end becomes putrid before the spirit can get to it.

Snakes should have some spirit injected by the mouth and anus, as I find they are apt to become a little putrid about the belly, and lose the cuticle at that part; then they should be coiled up in close spiral turns round the inside of a small vessel.

Lizards might be suspended by the tails in long bottles.

In some that are very long, the tail may be bent upon the body, or rolled in spiral turns on the inside of the vessel.

The Echinus, with the spines, should be wrapped up in cotton, and either put into a wide-mouthed bottle, or, for greater security, into a round box, with holes in it, so that it can neither touch nor press upon the sides, and the box immersed in spirit.

If the animals are suspended in barrels, cords should be run across the mouth, to which they may be suspended, and then the tops put in, and the spirit added afterwards.

The barrels should in general be tolerably deep.

OF CHANGING THE SPIRIT.

Animals, or parts, that are put into spirit, should have it changed at the expiration of a fortnight; as the first spirit which penetrates the substance of the part to be preserved, will be considerably lowered and discoloured by the fluids of the animal: perhaps it will not be necessary to change the spirit oftener than once; for by the time above mentioned the first spirit will have united sufficiently with the part, and have checked putrefaction, as far as such diluted spirit can, but will not be sufficiently strong to continue the preservation of the part; however, the time will vary according to circumstances. If in a hot climate, the spirit may require changing

sooner; if in a cold one, later; if the part be soft or gelatinous, the spirit will also require being changed sooner; and if a hard, or firm part, it may be later.

Another advantage arising from spirit sufficiently strong is its own preservation; for when much diluted and joined with the animal juices, it changes from spirit to vinegar, the effect of which is, that the bones of the animal, or parts, are softened so as to be unfit for a skeleton.

If spirit cannot readily be procured, strong brine will in most cases answer the purpose.

A LIST OF ANIMALS

DESIRABLE TOWARDS COMPLETING

THE SERIES OF COMPARATIVE ANATOMY

IN

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS IN LONDON.

The names printed in Small Capitals are of those Animals which are more especially required.

The names marked with an asterisk (*) indicate those Animals of which the Bones only need be transmitted. Of these it is highly desirable to procure Skeletons both of the male and female, with separate skulls of both sexes, for the teeth, sexual differences, &c., and skulls of the young animal for the deciduous teeth, and the changes of form resulting from growth.

Skeletons and skulls of the different varieties of the Human species are objects of particular interest for the Museum. The names of the Tribes, and the localities to which they belonged, should be transmitted with the specimens.

EUROPE.

RUSSIA.

Sables.

*Alpine Hares.

Zocor, or Blind Rat, (*Mus Aspalax*, Gmel.)

Moles, Shrews, and Water-Rats of all kinds.

Bones of the Extinct Elephant, or Mammoth, and of the Rhinoceros from Siberia.

Sturgeon, small specimens in spirit of the rarer species.

Fishes and Invertebrate Animals from the inland seas, lakes and rivers.

Cuttle-fishes from the Baltic.

NORWAY AND SWEDEN.

*Elk.

*Reindeer. A series of horns of different growths.

Lynx.

Swedish Hare.

Lemmings.

Whale-bone Whale, the parts mentioned at p. 14.

Narwhal. The Skeleton; the Head preserved in strong brine or spirits. The skull, especially of a specimen with the *two* tusks projecting.

Capercailzie, or Wood-Grouse. Skeletons of male and female.

*Jerfalcon.

Myxine, or Hag-fish; Cuttle-fishes; Lamp-cockle (*Terebratula*).

SWITZERLAND.

*Chamois.

*Ibex.

Marmots.

*Bearded Vulture.

*Black Vulture.

GIBRALTAR, MALTA, AND MEDITERRANEAN ISLANDS AND COASTS.

*Monkeys.

*Bustards.

Purple Gallinules.

Cuttle-fishes, *Argonautæ* or *Paper Nautili, Carinariæ*, and all floating Molluscous animals.

Fossil remains.

AMERICA.

YORK FACTORY AND QUEBEC.

Mammals.

*Rocky Mountain Sheep.
*Rocky Mountain Goat.
Prong-horned Antelope.
*Musk Ox.
Grisly Bear.
Beavers.
*Wapiti and other Deer.
Wolverene, or Glutton.
Lynx.
Hares.
Foxes.
Marmots (*Mus bursarius*).
Flying and other Squirrels.
Weasels.
Star-nosed Moles.
Canada Porcupine.
Ondatra, or Musk-rat.
Carcajou or Badger.
Jumping Mouse.

Birds.

Grouse of all species.

Quails.
*Swans.
King Ducks.
Eider Ducks.
Jays.

Reptiles.

Salamanders, Toads, and Frogs, especially the larger species.

Fishes.

Sharks and Rays.
Lampreys and Hag-fish (*Myxine*).

Mollusks.

CUTTLE-FISHES of all kinds.
Shell-fish, with the soft parts.

Insects.

Specimens of *Hornet*, and the nest.

UNITED STATES.

Mammals.

*Virginian and other Deer.
Foxes.
Black Wolves; Prairie Dog.
Squirrels of all kinds.
Water-rats.
Shrews.
Moles.
Fossil Bones of Mastodon, MEGALONYX, &c.

Birds.

*Wild Turkey.
Virginian Quails.

Jays.
Mocking Thrush.
Stares and Troupiales.
Turkey Buzzard.
Canvas-backed Ducks.

Reptiles.

Alligators. Skeletons, Viscera, Eggs, in spirit, with the embryo.
Sirens, or Mud-Guanas.
Kattewagoes (*Menopoma*).
Amphiuma.
Menobranchus.
Lizards, Salamanders, and large Toads and Frogs.

Fishes.

Sharks, Dog-fish, and Rays (ova and impregnated oviducts).
Lampreys and Myxine.
Amia. (Rivers of Carolina.)
Hyodons.
Elops.
Stony Gar-Pike.

Mollusks.

Cuttle-fishes of all kinds.
Shell-fish, with the soft parts.

Crustaceans.

King-Crabs (*Limulus*, Fabr., *Monoculus*, Linn.), in spirit.

WEST INDIES, DEMERARA, CUBA, &c.

Mammals.

Capromys, or Hutias.
Opossums.
Sloths.
Armadillos.
*Agoutis.
*Acouchis.

Birds.

Gallinules.
Whistling Ducks.

Reptiles.

Crocodiles (Skeletons, Viscera, Eggs, with the Embryo at different stages, in spirit).
Turtles (ditto ditto.)
Iguanas.
Blind-Worms.
Snakes; especially the *Fer de Lance* of Martinique.

Fishes.

Sharks.
Rays; especially the Devil-fish (*Cephalopterus*).

Mollusks.

Cuttle-fish of all kinds.
Spirula, with the animal or soft parts.
Pentacrinite or Encrinus, recent specimens.
Soft parts of the *Testacea,* especially of the larger kind; and *Marine Invertebrata* in general.

MEXICO, HONDURAS, VERA CRUZ, &c.

Mammals.

*Deer.

Chiwawa, a small burrowing Dog.

Cayopollin, and other Opossums. Of these animals the impregnated uterus at different stages is more especially desirable; also the young in the pouch at different periods.

*Tiger-cats.

Armadillos.

Tree-Porcupines.

Rats, Moles, and Shrews.

Fossil Bones of Mastodon, Megalonyx, &c.

Birds.

*Ocellated Turkey.

Quails.

Jays.

Reptiles.

Lizards and Snakes of all kinds from Mexico.

Axolotls (Lake of Mexico).

Salamanders, Frogs and Toads, large species, with the eggs and tadpoles.

Fishes, Mollusks, &c. as from the West Indies.

SOUTH AMERICA.

RIO JANEIRO, BUENOS AYRES.

Grison.

Howler Monkey and Lion Monkey.

Sloths. Natural Skeletons of the Adults, both of the Two-toed and Three-toed species, are especially desired.

Vampyre-Bats.

*Agoutis.

Armadillos of all kinds; especially the

Great Armadillo.

Pichichiago (*Chlamyphorus*).

*Deer.

Kinkajou.

Opossums of all kinds; especially the

Cheironectes, or Swimming Opossum.

Hares, especially the Patagonian Hare, or Long-legged Cavy.

Coypu.

*Capybara (the *impregnated uterus*).

Ant-eaters (ditto ditto).

Tree-Porcupines (ditto ditto).

The Fossil Bones of Mastodon, Megatherium, Megalonyx, and of the Gigantic Ant-eater.

Birds.

Rhea, or Ostrich. Skeletons of male and female, full grown. Skeleton of young bird half grown. The young just hatched, in spirit; and the eggs at different stages of incubation.

*Trumpeters, with the wind-pipe.

*Curassows, with ditto.

*Tinamous.

*Penelopes.

*Screamer.

*Cariama.
*Scarlet Ibis.
Jabiru.
Flamingo.
*King Vulture.
Quails.
Humming Birds.
Chaia of Paraguai.
Anhima of Brazil, or Camouche of Cayenne.
Boat-bills (*Cancroma*).
Goat-suckers.

Reptiles.

Alligator. Skeletons of full-grown specimens; the eggs in different stages of incubation.
Surinam Toad (*Rana Pipa*).
Jackie, (*Rana paradoxa*).

Fishes and *Mollusks*, &c., as before mentioned, from U. S. and West Indies.

WESTERN COAST OF SOUTH AMERICA.

SANTIAGO, LIMA, &c.

Mountain Tapir (from the Andes).
*Vicugna.
*Chinchilla.
Viscaccia.
*Deer.
*Foxes.
Pichichiago, *Chlamyphorus*, a small burrowing Armadillo.

PATAGONIAN HARE (*Cavia Patachonicha*).

Coypu.

RATS (*Octodon*). Abundant in the neighbourhood of Valparaiso.

MANATEE.

INIA, a species of Dolphin or Porpesse, found in the great rivers of South America.

Birds.

CONDOR VULTURE. The skeleton of both sexes; the young birds and eggs.

Californian and other black *Vultures.*

GUACHARO (*Steatornis*, Humboldt). A nocturnal bird inhabiting the cavern of Caripe: it is killed by torch-light.

Fishes.

All those with hard scales from the fresh waters, as the *Osteoglossum, Lepisosteus, Hyodon,* &c.

Mollusks and *Marine Invertebrata* generally.

AFRICA.

ALEXANDRIA, TRIPOLI.

Mammals.

GIRAFFE.

*Fennec.

HYRAX.

*Ichneumon.

Barbary Mouse.
*Gazelles.
JERBOAS.
HIPPOPOTAMUS of Upper Egypt. Skeleton, the young animal in spirit.
*GENETTES.
*Booted Lynx.

Birds.

Abou-hannez, or Sacred Ibis.
Percnopterus, or Pharaoh's Chickens.
BUSTARDS.
*Demoiselles.
*Marabou Cranes.
Sand Grouse.
Francolins.

Reptiles.

CROCODILE, Skeleton of full-sized. Eggs in spirit.

Fishes.

BICHIR (*Polypterus niloticus*).
SUDIS (*Sudis niloticus*).

Mollusks.

Cuttle-fishes of all kinds.
ARGONAUT.
CARINARIA, and all floating Mollusks.
ASPERGILLUM, or Watering-pot Shell, with the animal.
Marine Invertebrata generally.

MOGADORE, SIERRA LEONE, FERNANDO PO, &c.

CHIMPANZEE, or Black Orang. The skeletons and skulls of the full-grown are especially desirable: also the brain, larynx, and impregnated uterus.

Baboons and Monkeys in general. The skeletons and skulls.

Fasciculated Porcupine.

*Antelopes.

GALAGOS, or Gum Animals.

POTTO.

*Genettes.

PANGOLIN, or Manis. The impregnated uterus is very desirable.

All kinds of Porpesses and Dolphins from the great rivers.

Birds.

Touracos.

Plantain Eaters.

Marabou Cranes.

Reptiles.

CROCODILES.

Mud or soft-shelled Tortoises.

Large species of Frog and Toad, with the eggs and tadpoles.

Boa Constrictors.

Salamanders, Chameleons.

CAPE OF GOOD HOPE.

Mammals.

ELEPHANT, Skeleton of a full-grown male. Skulls of male and female. Brain and sections of the spinal chord of an adult. Impregnated uterus. Natural Skeleton of the young Elephant soon after birth. Mammary glands of a suckling female. Sections of the recent skull, containing the Organ of Hearing, in spirit. Jaws of the young animal in strong brine, for the pulps of the growing teeth.

TWO-HORNED RHINOCEROS, the same parts.

HIPPOPOTAMUS, the same parts.

GIRAFFE, the same parts.

ETHIOPIAN HOG, the same parts.

CAPE ANT-EATER, the same parts, more especially the impregnated uterus.

VARIABLE MOLE.

MOLE-RATS.

Ratel.

*Suricate.

Painted Hyæna (impregnated uterus).

AARD WOLF.

*Caffrarian Ox.

*Antelopes. Skulls of males.

*Genettes.

*Servals, or Bosch-kat.

PEDETES, or Spring-haas, (impregnated uterus.)

*HYRAX.

Birds.

Ostrich. Skeletons of male and female, and of the young bird. Eggs and embryo in spirit.

Secretary Bird.

Bustards.

Flamingo.

Crested Guinea-fowls.

Mitred ditto.

Touracos.

*Vultures and *Eagles.

Reptiles.

The female organs impregnated of all the animals of this class are desirable, preserved in spirits.

The Rough or Toothless Snake, *Coluber scaber.*

Fishes and Marine Animals in general.

Spirula, with the soft parts.

Cuttle-fishes of all kinds.

MADAGASCAR, MAURITIUS.

Mammals.

*Macaucos.

Tenrecs.

Cheiromys, or Aye-aye.

Vampyre Bats.

Fossane.

Native Hog (*Sus larvatus*).

Indri.

Vansire.

Birds.

Spoon-bills, with red bill and legs.

Reptiles of all kinds. *Fishes* ditto; especially freshwater species, *Mollusks*, and *Marine Invertebrata*, of all kinds, especially the NAUTILUS POMPILIUS, or Pearly Nautilus, with the animal.

Fossil bones of supposed DODO, from the Mauritius.

ASIA.

BOMBAY.

*Monkeys of all kinds.

*Deer.

MANELESS LION. Skeleton and skull of male and female.

Birds.

Cambay Flamingo.

FLORICAN BUSTARD.

Reptiles, *Fishes*, and *Marine Invertebrata* generally.

CEYLON.

Mammals.

ELEPHANT. Skeleton; skulls of a full-grown male and female. Brain and sections of spinal chord of an adult. Impregnated uterus, and natural skeleton of the young Elephant soon after birth. Mammary gland of a suckling female. Sections of the recent skull, containing the Organ of Hear-

ing in spirit. Jaws of the young animal, in brine, for the pulps of the growing teeth.

Slow Lemur, especially impregnated uterus.

Slender Lemur.

Musk-deer, or Small Deer, the stomachs distended, in spirit; skeletons and skulls.

Birds.

Skeletons and Sternums, of all the indigenous Birds.

Reptiles.

Alligators.

The Snake-lizard. A large Reptile frequenting the great rivers.

The Python, or Boa; the impregnated oviducts.

Fishes.

All freshwater species.

Mollusks.

Cuttle-fishes; the Pearl Oyster and the Pearly Nautilus, in spirits. Marine Invertebrata generally.

Specimens of the Sea-Mantis (*Squilla*) in spirit, with its ova and young.

MADRAS AND CALCUTTA.

Mammals.

Asiatic Lion. Skulls of both sexes, and skeleton.

Arctonyx, or Sand Hog.

Pangolin, or Manis; especially impregnated uterus.

One-Horned Rhinoceros (same parts as are desirable from the Elephant).

PANDA, or CHITWA.

*CHIRU ANTELOPE.

CHICKARA, or 4-horned Antelope.

*The Sloth-Bear.

*Isabella Bear of Nepaul. (The impregnated uterus of any species of Bear is very desirable.)

Bandicoot Rats.

FLYING SQUIRRELS.

Musk Deer of Thibet.

*Squirrels.

Musk-Rat, or Musk-Shrew.

SOUSOUS, or GANGETIC LONG-NOSED PORPESSE, (*Delphinus Gangeticus.*)

Fossil Bones of the *Mastodon*, &c. from the banks of the Irawaddi.

Birds.

Adjutant. Eggs at different stages of incubation, in spirit. Natural skeletons of young.

Cyrus Crane.

Stanley Crane, or Demoiselle.

Jungle-fowl.

BUSTARDS.

Vultures.

Ducks and Teal.

Reptiles.

Gangetic Crocodile, or GAVIAL. Skeletons of full-sized specimens. Eggs in spirit.

Alligator. Ditto ditto.

Cobra de Capello. Impregnated oviducts in spirit.

Fishes and *Mollusks* in general; especially the Cuttle-fishes of all kinds. *Nautili* and *Argonautæ* in spirits.

SUMATRA, JAVA, BORNEO, &c.

Orang-utan. Skulls of this species at different stages of growth, especially the skulls and skeleton of the full-grown or great Orang. Also the viscera of the same; and more particularly the impregnated uterus.

Long-armed Apes, Ungka Ape, &c., the same parts.

Indian Tapir, same parts as from the Elephant.

Civets and Genets.

Sumatran Rhinoceros. Skeleton and skull of both sexes; impregnated uterus. Natural skeleton of the young animal.

*Babyroussa.

Flying Squirrels.

Panda.

Benturong.

Mydaus, or Skunk.

Tupaia.

Gymnura, or Rat-tailed Weasel.

Delundung (*Prionodon*).

*Rimaudayan Tiger.

Pangolin, or Manis.

Tarsier.

Flying Macauco (*Galeopithecus*).

Flying Fox (*Pteropus*).

Opossums.

DUGONG. Especially the skulls of an ascertained male and female; impregnated uterus.

Birds.

CASSOWARY. Skeleton of male and female, natural skeleton of young. Eggs, with embryo, in spirit. Newly hatched young, in spirit.

Horn-bills (*Buceros*); especially the HELMET HORNBILL.

Crown Pigeon.

*TWO-SPURRED PEACOCK.

Java Swallow, and specimens of the edible nests, with the eggs.

Reptiles.

Alligators, Skeletons of, and eggs.

Pythons, or Boas. Skeletons and impregnated oviducts.

Water-Snakes.

Fishes, especially freshwater species.

Mollusks. Cuttle-fishes. Pearly Nautilus, in spirit. Paper Nautilus, ditto. The *Teredo giganteus* seu *palmulatus*. Mollucca Crab, in spirit. Marine Invertebrata generally.

CHINA, JAPAN, KAMTSCHATKA.

All the wild or native species of every class of animals from these countries are objects of scientific interest.

The Large Pipe-fish (*Syngnathi*), in spirit.

The *Cuttle-fishes* of all kinds, especially the *Calamary*, from which the China ink is manufactured.

AUSTRALIA.

Mammals.

Water-Mole (*Ornithorhynchus*).

Porcupine (*Echidna*). Of both these animals, the impregnated uteri at different stages. The young in spirit. Skeletons of both sexes, and of the bristly and spiny species of Echidna. Entire specimens in spirit.

Kangaroos, especially the

Rock Kangaroo, with the bushy tail.

Striped Kangaroo.

Wallabee, Walleroo, and Bush Kangaroos.

Kangaroo Rats.

Bandicoots (*Peræmeles*).

Opossums of all kinds.

Flying Opossums.

Wombat.

Koala. Skeletons and skulls, with the teeth perfect.

Dasyurus. All the species of these Carnivorous Opossums.

Dog-faced Opossum, or Hyæna, of Van Diemen's Land, (*Thylacinus Harrisii*).

The impregnated uteri, at different stages, of all the above species are of the greatest interest. Skeletons and skulls are also particularly desirable.

Seals.

Dugongs.

Water-Rats, Mice, Shrews, and Bats, ought without exception to be preserved in spirits and transmitted for examination.

Fossil remains.

Birds.

The Emeu (*Rhea*).

Skeletons of the male and female, full-grown.

Skeleton of a young Emeu, half-grown; young ones just hatched, in spirit; eggs at different stages of incubation, in spirit.

Lyre-Pheasant (*Menura*). Skeletons of male and female, and of young. Trachea and trunk of male and female in spirit.

Megapodius of New Zealand. Skeleton of male and female. Larynx, trachea, and trunk, with viscera, in spirits.

The same of the Great Wattle-bird, *Glaucopis cinerea*, Forster, from New Guinea.

The same of the Little Wattle-bird, *Philedon carunculatus*.

Skeletons of the Large-billed Cuckoo (*Scythrops*), and of the Laughing Jackass (*Dacelo*), male and female.

Skeletons and viscera, in spirits, with trachea, of all the Honey-Birds feeding on the *Eucalypti*. (*Meliphagidæ*, Vigors.)

Skeletons and viscera of the *Podargus*, and of the *Glareora* or Sea-Partridge.

Skeletons, sternums, and viscera of the Sheath-

BILL (*Chionis*) from New Zealand; also of the APTERYX, from the same country.

Skeletons of the PENGUIN (*Aptenodytes Patachonica*), and the young of the same preserved in spirit.

Skeletons and viscera of the Tropic Bird (*Phaëton*).

Skeletons and viscera of the Frigate Bird (*Tachypetes*).

Sternums of these and of any other birds are worth preserving where the other parts cannot be saved.

Head of a large *Albatross*, beak sawed off anterior to nostrils, cranium laid open to expose the brain, and immersed in strong spirits. Specimens in spirit of the young Albatross.

Reptiles.

Skeleton, nuchal scales, and viscera in spirit of the *Crocodile*, stated to frequent New Zealand and the Western shores of Australia; also of any Turtles or Crocodiles about the Australian coasts.

Eggs of the same in spirit, for the embryo.

Snakes, Lizards, Salamanders, and Frogs.

Skeletons of Jew-Lizard, Scincus, Hooded Lizard (*Chlamydosaurus*). Eggs of the same in spirit, oviducts impregnated of the viviparous kinds.

Fishes.

Head of the Port-Jackson Shark (*Cestracion Philippii*), in spirit; ditto entire of a small specimen. Heads with teeth and tail of Skates, Rays. All the Lampreys, Eels, and fishes of that tribe. The *Pegasus*, a large species of *Hippocampus*, with

ova in the pouch; males and females of these at spawning-time.

Mollusca. All Cuttle-fishes; NAUTILI with the soft parts; and floating or Pteropodous species.

The CLAVAGELLA may be detected by its ejecting water from the holes of corals or rocks; the ASPERGILLUM, or Watering-pot Shell, by its tube projecting above the sand at low water.

Terebratulæ, and whatever Shell-fish, &c. can be brought up with a *dredge* are likely to be new and interesting.

Ascidiæ, Nereis, Amphinome, Sand-Worms, Leeches, Actiniæ, and other *Zoophytes, Holothuriæ,* &c.

Phasma, or Spectre insect, in different stages.

Crustacea generally, both from Fresh and Salt water.

POLYNESIAN ISLES.

Mammals.

*Papuan Hog.

Deer of Marianne Islands.

BABYROUSSA.

Phalangers or Opossums.

LEONINE and ELEPHANTINE SEALS. Head entire of the males, in brine or spirit. Skeletons of both sexes.

SPERMACETI WHALE, the parts specified at p. 14.

Birds.

APTERYX of New Zealand, and animals of every class from this island, are likely to prove objects of great scientific interest.

MEGAPODIUS.
BIRDS OF PARADISE.
Tropic Bird.
Frigate Bird.
Reptiles, Fishes. All the animals of these classes from the Islands of the Pacific are likely to be objects of scientific interest.
The Hag-fish, or Parasitic Lamprey, of the South Seas (*Heptatrema*).
The Sword-fish (*Xiphias*). Skeleton and skull.
Mollusks. The SPIRULA with the animal; the PEARLY and PAPER NAUTILI, Cuttle-fishes of all kinds, and Floating Marine Animals.
INSECTS, in different stages of metamorphosis; with the ova. Large species preserved in spirit.
LERNEÆ, or parasitic animals adhering to fish.
PLANTS. The flowers of such as show the sexual organs distinct and separate, as the Palm, &c.

Specimens of any rare or interesting Animal, or Fossil, not included in the preceding list, will equally entitle the donor to the thanks of the College.

With respect to Fossilized Remains, it is desirable that the following particulars connected with their discovery should be noted, viz. place where found—distance from sea, river, or lake—degree of elevation, latitude, and climate—distance from forest or plain—depth from surface—strata to the part where found—stratum in which discovered—position or situation in which imbedded—nature of the fossils associated with it.

No. 18

Notes of Dissections performed at

Animal's Name

Sex Age Weight

Length of body, from extremity of jaws to root of tail

——— of head of tail

Situation of testes

——— of preputial orifice

——— of vaginal orifice

——— of anus

——— and number of mammæ

Abdominal muscles

——— ring

Stomach
- simple
  - length — greatest circumference
  - *Observations*
- complex
  - number of sacs — relative size
  - *Obs.*

Omentum

Mesentery

Intestines
- length — greatest circumference
- —— of small — —— of small
- —— of cæcum — —— of cæcum
- —— of large — —— of large
- *Observations*

Anus glands

Cloaca

Liver { situation; number of lobes; weight; *Observations.*

Gall-bladder, size — situation

——— structure

Bile, enters intestine

Pancreas { form; situation; its secretion, enters intestine

Spleen { situation; form; weight

Lungs { situation; length — breadth, right — left; weight; number of lobes, right — left; structure, air cells, &c.

Branchiæ

Heart { situation; weight; length — breadth; shape and structure

Venæ cavæ

Aorta, primary branches

Trachea, number of rings — structure

Larynx

Pharynx

Epiglottis

Thyroid glands

Salivary glands

Tongue length papillæ

Nostrils

Eye-lids

Eye

Pupil, form

Lachrymal gland

Ear

Brain, weight form, &c.

Spinal cord

Supra-renal glands

Kidneys { situation; form length breadth; weight of both; papillæ, number and form

Ureters terminate

Urinary bladder { situation; size; shape

Testes { size; structure

Vasa deferentia terminate

Vesiculæ seminales { size; structure; terminate

Prostate { size / structure / terminate

Cowper's glands { size / structure / terminate

Penis length muscle

Urethra

Ovaries { situation / size / shape / *Observations*

Uterus { length of cornua / —— of Fallopian tubes / —— of body / position

Vagina

Oviduct { length / form / termination

Peculiarities of muscles

———— air-sacs

———— glandular organs

Morbid appearances

Calculi

Entozoa

Epizoa