Invitation to surgeons, and naturalists, for donations to the Museum ... : of preparations, casts, models, paintings, drawings, engravings, manuscripts, printed books, and chirurgical instruments: also, Directions for preserving animals, and extraneous fossils / [framed principally by John Hunter]. [Ed. by W. Clift?].

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INVITATION

FOR

DONATIONS:

AND

DIRECTIONS

FOR

PRESERVING ANIMALS.

INVITATION

TO

SURGEONS, and NATURALISTS,

FOR

DONATIONS TO THE MUSEUM

OF THE

Royal College of Surgeons in London,

OF

PREPARATIONS, CASTS, MODELS,

PAINTINGS, DRAWINGS, ENGRAVINGS,

MANUSCRIPTS, PRINTED BOOKS,

AND CHIRURGICAL INSTRUMENTS:

ALSO,

DIRECTIONS

FOR

PRESERVING ANIMALS,

AND

EXTRANEOUS FOSSILS.

LONDON:
Printed by R. CARPENTER and SON,
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1826.

ROYAL COLLEGE

OF

SURGEONS IN LONDON.

THE COUNCIL, intending not only to support, in a proper manner, the unparalleled HUNTERIAN COLLECTION; but, also, by correspondent additions, to make it as conducive as possible to the illustration of the structure and economy of animals, the advancement of the knowledge of diseases, the improvement of Surgery, and, by these means, to the national benefit and honour; solicit of Anatomists, Surgeons, and Naturalists in general, DONATIONS, directed " TO

THE BOARD OF CURATORS," of such Preparations, Casts, Models, Paintings, Drawings, Engravings, Manuscripts, Printed Books, and Chirurgical Instruments, as may promote these objects.

The following DIRECTIONS, *framed, principally, by the late* JOHN HUNTER, *are intended to facilitate, and render effectual, the endeavours of such friends to scientific inquiries as shall be inclined to further the designs of the Council, but who are not well acquainted with the Arts of preparing and preserving animal substances for anatomical investigation.*

DIRECTIONS

FOR

PRESERVING ANIMALS

AND

PARTS OF ANIMALS

FOR

ANATOMICAL INVESTIGATION;

AND CONCERNING

EXTRANEOUS FOSSILS.

DIRECTIONS, &c.

OF THE METHODS OF CATCHING ANIMALS; AND OF THE PRIMARY OBJECTS OF ATTENTION IN THEM.

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

Quadrupeds in general, are either caught in traps, or shot; consequently some parts of the body are injured. Birds, also, are usually shot, to the injury of their plumage.

At the time of taking an Animal, it would be proper to collect, on the spot, as many circumstances connected with its history as possible; particularly with regard to food, locomotion, propagation, &c.

Snakes, Lizards, and Reptiles in general, being taken without serious injury, suffer little in their external form: yet, even these may be considerably injured without care; for, as they are commonly obtained in the breeding season, it is possible that the organs of generation, and their contents, as eggs, &c. may be destructively compressed; 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, Fishes, Crustacea, and Insects suffer very little from the manner of being caught.

The softer animals, most of which inhabit the sea, sustain little injury from the mode of their prehension; but, as their shape, and size, admit of considerable

variation, their form may suffer from the manner in which they die.

Animals, without bone to determine their shape or locomotion, yet, having a considerable extent of muscular contraction, vary their figure according to circumstances; of this kind are the Actiniæ, Holothuriæ, Testacea, &c. which should, therefore, be allowed to die gradually in the water to which they are accustomed; whence, dying in a relaxed state, more of their external form will be displayed: but it is desirable to have specimens in the different degrees of expansion, and contraction.

When dead, they are immediately to be put into spirit, to prevent putrefaction; which, otherwise, would soon follow.

A sketch, however slight, or ill executed, of Molluscæ, and others whose form and colour are materially altered by death, or when put into spirit, will greatly assist in rendering a description intelligible. A memorandum of the scale upon which the drawing is made, whether of the natural size, or so many inches

to a foot, affords essential information; the admeasurements, also, of an animal where parts only are preserved, is very necessary. Moreover, the Sex of the individual should be noted, if not expressed by the part preserved.

Animals, of whatever class, which are small enough to be preserved whole, should be kept in that state. Such as are so large that they cannot possibly be brought home entire in spirit, should be divided into those parts which characterize them; but only some of the larger Fishes, Birds, and Quadrupeds, require this treatment.

When this separation of parts is requisite, it will be necessary, previously, to notice the external appearances; the number of mammæ in the female, and their situation; whether between the anterior extremities, as in the Monkey, Elephant, &c. or along the abdomen, as in the Sow, Bitch, Rat, &c. or between the hind legs, as in the Mare, Cow, &c. If the female cannot be procured, inquiry should be made concerning the mammæ

of the male; for it sometimes happens, that the male, as the Horse for instance, has no such parts.

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 male organ, in its natural state, must be remarked; whether it be along the abdomen, as in the Dog; pointing backwards, as in the Cat; whether covered by the common skin, as in the Bull; or by a proper skin, and only attached to the abdomen on one side, as in the Dog. Any other external part which cannot be preserved, or which is too large to be kept entire, should be particularly noticed.

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

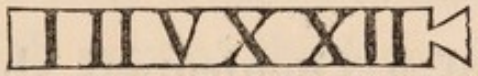
When the animal is opened for the purpose of separation, it will be proper to

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. What be the kind of kidneys, whether conglobate, or conglomerate; their situation, &c. Also to make such other observations upon the different organs as may be deemed necessary; after which they may be divided, and severally distinguished.

Animals whose food is not known, should have the contents of the stomach examined, to ascertain, if possible, what aliment they had last taken; and also of the colon and rectum, to determine the kind of fæces which they may contain.

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 endeavours; but also singularly-formed intestinal worms.

Memoranda should be made of the localities from whence specimens have been

obtained, whether at sea or on land; and 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 be 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 THE TREATMENT, AND PRESERVATION, OF QUADRUPEDS.

The head of a Quadruped should be preserved, particularly on account of the teeth; if too large, 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 be not preserved, the feet and tail only may be either dried, or put into spirit.

The œsophagus, and stomach, should be preserved in spirit, with a part of the duodenum; and the cœcum, if any, with a small portion of the ilium, and of the colon.

But, if the animal be not too large, it will be preferable to cut off, from the mesentery, the jejunum and ilium, which need not be preserved; and then to strip down from the spine the contents of the abdomen, beginning at the diaphragm; so that the stomach, liver, spleen, pancreas, colon, &c. with their attachments, may be taken out together, as low as the rectum where it lies in the pelvis, and, after being cleansed, put into spirit.

The heart, and lungs, may be preserved in connection, if not too bulky; if so, the heart, with part of the large blood-vessels.

The contents of the pelvis, namely, the bladder and rectum, with the internal parts of generation, both male and female; and the external parts not separated from the internal, with a large portion of the surrounding skin, should be preserved together in spirit.

Should the female parts be in a state of impregnation, they are to be taken out, as before described, without opening the uterus; or only sufficiently to admit the spirit for their preservation.

Abortions should be preserved entire. The fetus, when found in the abdomen, may be taken out with the whole of the vagina, uterus, ovaria, &c.

Also the young of large animals, as of the Whale, the Seal, the Walrus, &c. if of a small size; but when of too advanced a growth, the tail or extremities may be cut off, and the body put into spirit.

Of very large full-grown animals, the following parts should be preserved:

The eyes with a portion of the external skin, their muscles, and fat, in an entire mass.

The organs of hearing.

The beginning of the aorta, and pulmonary artery, for their valves.

The mammæ of the female; with part of the surrounding skin.

The organ of the male, taken off with part of the anus; and the testes.

The bones of animals should be preserved; and if possible, be from adult, but not aged individuals; the flesh being

removed, the bones may be either boiled, or, put into a cask, 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 saw-dust, 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, shewing 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 prevent their being crushed by larger specimens; and many may then be packed in one large case.

All the parts of one animal should be kept separate from those of other individuals; except where it is impossible to confound the parts of one animal with those of another.

OF BIRDS.

Before proceeding to separate the parts of Birds, which are too large to be preserved entire, their external appearances should be accurately observed.

Birds have few internal parts of importance, for examination. The hearts and

kidneys of all Birds are presumed to be similar.

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

When many specimens of rare Birds are procured, the heads of a few of them may be taken off and preserved in spirit, for the structure of the bill, tongue, and trachea; the legs and feet should also be preserved.

OF FISHES; AND REPTILES.

In Fishes, regard should be had to the external appearances, the number of fins, their shape, and situation. The length, breadth, and thickness of the animal, and the relative distances and proportions of as many parts as possible should be recorded.

In very large specimens of the Ray or Shark kind, the abdomen should be opened, and the specimen divided below

the heart, across the superior portion of the liver: by which means the head, heart, mouths of the oviducts, if a female, or testes, if a male, will be 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. If the trunk be too large the body should be cut through, above the pelvis, and the parts contained in the lower portion preserved. If a female, the two oviducts should be detached through their whole length, where they pass along the abdomen on each side of the spine; but kept attached to the pelvis in front, and the whole preserved.

If with young, or eggs, take out the whole of the organs of generation, without opening them. The fetal peculiarities in these animals should be noted: and the stomach and intestines should be saved if any thing peculiar be observable in them. If not of the Ray, or Shark, tribe, take out such parts from the abdomen as are uncommon, or singular.

The eyes of many Fishes are proper objects for preservation.

Separate the heads of such Fishes as have any thing remarkable about the teeth or gills, and are too large to be preserved entire.

If there be small examples of an interesting kind, keep them entire; but still preserve such parts of the larger specimens as are curious.

When Alligators, Crocodiles, Turtles, or Tortoises, are too large to be preserved entire, some parts, as the head, the whole of the viscera stripped down from the neck to the anus, and also the anus, should be preserved.

Small Lizards may be preserved entire.

Snakes may be preserved entire, or in part, according to their size. The heads both of poisonous and innocuous Serpents should be preserved entire in spirit, for the examination of their teeth and fangs.

In regard to Serpents, there is one circumstance with which it is particularly necessary for the Collector to be acquainted: that of being able to distinguish with

certainty between those which are venomous, and those which are not so.

Innocuous Serpents have four rows of teeth on the upper part of the mouth, viz. one row on each side, immediately within the lip, usually denominated the labial teeth; and two shorter rows situate on the palate, termed the palatal teeth. In small specimens it may be necessary to pass a pin along the mouth from behind forwards, to detect them. The head is generally long and slender, differing little from the size of the neck; and the scales on the head much larger than those on the body.

Whereas, in venomous serpents, the labial, or outer rows of teeth, do not exist; the two palatal rows only are present: but towards the anterior part of the upper jaw on each side, just beneath the situation of the eye, are placed the poison-fangs, which are considerably larger and longer than the ordinary teeth, and moveable at their base, so as to fold back like the blade of a penknife. The form of the head is generally short, flat, and broad; and the scales on the head much smaller than those on the body.

There are, however, two exceptions to the foregoing characteristic marks of innocuous Serpents, viz.—the Cobra de Capello, *Coluber Naja*, LIN. which, although poisonous, has *large scales* on the crown of the head:—and the *Bungarum Pamah* of Dr. PATRICK RUSSELL, also poisonous, which has, on each side, three *labial teeth* of a very small size.

On the contrary, the Boa Constrictor, although innocuous, has *small scales* on the crown of the head; which, in every other known instance, is confined to venomous Serpents.

OF CRUSTACEA; 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; or when the object is too minute to admit of other investigation.

In preparing them by drying, great care is to be taken to preserve all their

external parts as perfect, and as expressive of progressive action, as possible.

Lobsters, Crabs, and Crawfish, when dried, should be wrapped in soft paper, and packed in cotton, so as not to allow them any motion in the case, nor to touch one another.

Beetles, Butterflies, Moths, &c. 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 pins should be greased or oiled to prevent the juices of the animal from drying round them, and producing rust, which would render them difficult to be removed from the insect. If the pins were pointed at both ends, they would more readily admit of the specimen being turned.

The specimen should be so securely fixed as to allow of the motion of the box in all directions; and the fastening should be in proportion to the weight of the specimen.

When preserved for anatomical investigation, Lobsters, Crawfish, Crabs, Beetles, &c. may be put into a bottle to-

gether in spirit; or if each class be kept separate, several examples may be packed together.

Butterflies, Moths, and their Larvæ, &c, 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 moving, and the whole should be covered with the lid.

Large eggs, as those of the Ostrich or Emeu, when near hatching, should be preserved in spirit, on account of the peculiarities of the fetus of this class of animals.

The eggs of Turtles, Lizards, Crocodiles, Snakes, &c. when incubating, should also be preserved in spirit, for the peculiarities of the fetus: likewise the eggs of all sorts of insects, on the same account.

A small 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 certainly preserved.

VARIOUS OBSERVATIONS ON THE MEANS OF PRESERVING DIFFERENT ANIMALS.

An animal of the firmest kind, in a temperate climate, may generally be preserved by a quantity of proof spirit equal to its own weight.

Animals which are termed firm, are those of the quadruped kind, as Rats, Mice, &c. and indeed Snakes, Lizards, and all land insects, so far as respects the quantity of spirit, may be considered in the same class.

Some of the soft Fishes, however, may perhaps require rather more spirit than their own weight: yet there are many Fishes which will admit of being referred to the first distinction.

Soft animals, as the marine ones generally, require rectified spirit in nearly the same proportion 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, or if a considerable time shall elapse before they are transmitted to this country, more spirit will be required.

The watery, or pulpy kind, such as Sepiæ, Medusæ, Echini, Asteriæ, &c. from their internal structure being extremely tender, require rectified spirit.

The proportion of spirit should be particularly attended to, when parts are large; for a small animal, or part, generally obtains more than what is here directed, while a large one has less.

If the animal be small, it may be preserved by immersing it in its own weight of spirit; but some spirit thrown into the

abdomen, will further tend to its preservation.

If the animal be large, the thorax and abdomen should be filled with spirit; otherwise, before the spirit can penetrate through the skin, the internal parts will become putrid. A trochar, or syringe, will answer for filling both cavities. Large fishes should be treated in the same way.

In the Molluscæ, &c. the spirit will generally penetrate sufficiently fast, to prevent putrefaction.

Small animals, preserved for their external figure, should be suspended, or placed in the attitudes in which they are designed to be ultimately preserved.

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 it be intended that two or more should be put into the same cask, they

should, however, be kept separate for some time; otherwise they would make too large a mass for the spirit to penetrate sufficiently to prevent putrefaction.

More than one or two may be put into the same vessel, if suspended, as then they cannot press on one another; or they may be put into small wooden boxes, which have been put together with wooden pegs instead of nails, having holes bored in the sides to admit the spirit, and prevent the specimens injuring each other, by coming in contact: in this manner several may be sent in the same cask, or jar.

According to the proposed proportion of animal and spirit, a vessel may be half filled with the former.

Birds are seldom too large to be kept in spirit, in which they should be suspended with care, for the preservation of external appearances. Several may be put into one vessel, but they must not be pressed upon one another.

The mouth of the vessel should be wide enough to let them pass against the direction of the feathers. This precaution is, also,

necessary for the preservation of the extremities of Crustacea, Insects, and Reptiles.

If the Bird were put into a proper position, the feathers being laid smooth, and rolled up in fine linen, the external form might be still better preserved.

If a pipe were put into the mouth of the Bird, and spirit thrown down the trachea, it would pass through nearly the whole body by means of the air cells. Some spirit might, also, be injected by the anus; and into the abdomen, by a small aperture made for that purpose.

Animals of a soft or pulpy texture should be kept separate from those which are hard, more especially if preserved on account of their external figure; and should not be crowded. If possible, they should be suspended: those not firm enough to support their own weight upon threads, should be put into different bottles.

Shell-fish may be put into a vessel in any manner, as the shell preserves them from pressure; but if they died protruding from 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 apex to allow the spirit to enter that end of the shell; otherwise, from the body of the animal filling the mouth of the shell, that extremity of the animal would become putrid before the spirit could penetrate to it.

Snakes should have some spirit injected by the mouth and anus, as they otherwise soon become putrescent, and lose the cuticle about the abdomen: they may then be coiled up in close spiral turns round the inside of the vessel.

Lizards may be suspended by the head.

Of those which are very long, the tail may be bent upon the body, or rolled in spiral turns on the inside of the vessel.

Echini with the spines should be wrapped in cotton, and either put into a wide-mouthed bottle, or into a round box with holes in it, so as not to touch nor press upon the sides; the bottle being then filled with, or the box immersed in, spirit.

For suspension in a barrel, animals may be fixed to cords stretched across its mouth; the top should then be put in, and the spirit afterwards added.

Animals, or parts, which are put into spirit, should have it changed, at the expiration of a fortnight; as the first spirit will be considerably lowered in strength, and discoloured: for although it will have penetrated the substance, and checked putrefaction, it will not remain of sufficient strength to continue the preservation of the part: the time, however, will vary according to circumstances. If in a hot climate the spirit may require to be changed sooner; if in a cold one, later; if the part be soft, or gelatinous, it will also call for earlier attention than if hard or firm.

Another advantage arising from spirit sufficiently strong is, its own preservation; for when much diluted, and combined with the animal juices, it will acquire an acid quality, by which the bones will be softened, and rendered unfit for a skeleton.

The glass or jar containing any article in spirit, may first be stopped with cork; over this should be extended a piece of moistened bladder, or of the recent skin of an animal; the whole of which, when dry, may be coated with resin or wax; but neither resin nor wax should be used to seal the surface of the cork itself; for when that is done, the spirit penetrates and dissolves the cement, and thus forms a varnish which mixes with the spirit, and adheres to the specimen contained in it.

If glass vessels with sufficiently large mouths cannot be procured, glazed earthen jars will answer the purpose; and, to prevent evaporation, they may have externally two or three coats of paint, wax, or pitch, and be packed in tow, cotton, or other soft material, to prevent its being rubbed off.

Glass, or glazed earthen, jars, are preferable to casks; being less liable to discolour the spirit, and thereby injure the specimens, especially those whose size will admit of being preserved in this

manner: but if casks are employed, those made of white wood are preferable.

Where barrels were not to be procured, well made boxes, with white lead introduced into all the joints, have been found to be an efficient substitute.

In preparing to tie over bottles for packing, it is necessary that the bladders should be soaked in water for two or three days, or longer if practicable, as they will then adhere more firmly to the neck.

In lieu of corks, sheet lead may be placed between the first and second bladders. That procured from tea-chests will be sufficiently strong to prevent evaporation for a year or two.

Where spirit cannot be procured, a strong solution of bay-salt, changed as is before directed with regard to spirit, will preserve specimens for a considerable time.

All marine productions, intended to be preserved in a dried state, should be soaked in fresh water, which must be changed several times; and the specimens must, afterwards, be thoroughly dried

before they are packed, otherwise they will continue moist, and become rotten.

To prevent insects, or other dried specimens from being injured, or destroyed by living insects, they should occasionally be touched with pure oil of turpentine, when it can be employed without injuring the specimens. When that cannot be done, the inside of the box may be occasionally moistened with it, or with oil of petroleum. These are more effectual preservatives than camphor. Tallow, inclosed in a piece of muslin within the box, will frequently prevent the attacks of insects.

Animals which are dried, should be so packed as to allow of being aired occasionally; and, if becoming mouldy, should be washed with spirit, and thoroughly dried before they are re-packed.

An acquaintance with the SYSTEM *of* LINNÆUS *would greatly help every endeavour to acquire, or promote, natural knowledge.*

DESIDERATA.

The Cuttle-fish, which has a small horny hook-like process in each acetabular cavity on the tentacula. *Sepia unguiculata.*

The animal part of the Encrinus. *Pentacrinus.*

The shell with the animal of the Watering-pot shell. *Serpula perforata.*

The shell with the animal of the Paper Nautilus. *Argonauta Argo.*

The shell with the animal of the great Nautilus. *Nautilus Pompilius.*

The Blind-fish, or Hag-fish, (allied to the Lamprey.) *Myxine glutinosa.*

The fœtus in utero, or fœtus and placenta, of any of the larger animals, if obtained of a convenient size for preservation in spirit; for instance, the Whale, Walrus, Manatee, Camel, Camelopardalis, Rhinoceros, Hippopotamus, Elephant, &c.

The skeleton, or skull of the Narwhal, with *two* tusks projecting: (this probably occurs in the male animal only.)

The whole animal, or the skeleton of the Gangetic Porpoise. *Delphinus rostratus.*

The whole animal, or skeleton of the Gavial, or rostrated Gangetic Crocodile.

The skeleton of the African Wild Hog. *Sus Æthiopicus.*

The skeleton of the Babyroussa.

The whole animal, or skeleton of the Jerboa. *Dipus. Mus saliens.*

The skeleton of the great Ant-Eater; *Myrmecophaga jubata.*

The skeleton of the aculeated Ant-Eater. *Myrmecophaga aculeata.*

The skeleton of the two-toed Sloth. *Bradypus didactylus.*

The skeleton of the three-toed Sloth. *Bradypus tridactylus.*

The skeleton of the Ursine Sloth. *Bradypus ursinus.*

The skeleton of the Camelopardalis.

The skeletons, or Crania with the Teeth, of the Human Species of all Nations.

OF EXTRANEOUS FOSSILS.

It is judged proper to add a few OBSERVATIONS on Extraneous Fossils; towards

fulfilling the intentions of Mr. HUNTER—to display the agencies of Nature and their effects, in all the modes of animal existence; and, also, as manifested by very interesting parts of his collection, through all the changes of which animal bodies are susceptible.

By extraneous fossils are to be understood, animal and vegetable substances, which, from long residence in the earth, have acquired fossil characters.

The fossilized remains of large animals, which of late years have engaged the attention of Naturalists, have been discovered, chiefly, in parts contiguous to the sea, rivers, or lakes; although sometimes in elevated situations, remote from water.

The changes which occur underground, are generally destructive of all the distinguishing parts of an animal, except bone; whenever, therefore, any soft part, so termed, with its distinctive characters preserved, is found, it is to be treated with the utmost care.

It should be exposed as little as pos-

sible to the air; and in packing should be guarded from attrition, first by the softest paper, then by more resisting materials, as cotton, tow, horse-hair, sponge, &c.

The parts more especially to be preserved for anatomical inquiry, on any occasion, may be understood from the foregoing directions, respecting the organs of various creatures: but it is so difficult to obtain the whole, even of the bones, of a fossilized animal, that every part, in whatever state, may be considered as worthy of preservation.

With a view to the knowledge of the structure and economy of an animal of a tribe extinct, of doubtful existence, or of rare occurrence, it is desirable that every particular relating to the situation in which it is found, should accompany its bones, skin, or other fragments.

Upon the discovery, therefore, of an extraneous fossil, every circumstance which can tend to explain the race of the creature to which it belonged; its primary situation; mode of subsistence, and

of propagation; its instruments of locomotion, defence, &c. ought to be noted.

Also portions of the stratum from the spot in which the fossil lay, and from parts several yards surrounding it, should be collected for analyses.

The following proposed heads of columns would probably be favourable to inquiry on the subject, and to perspicuity in the arrangement of facts.

Place where found—distance from sea, river, or lake—degree of elevation—latitude, and climate—distance from forest, or plain—indigenous trees, and plants—native animals—depth from surface—strata, to the part where found—stratum in which discovered—position or situation in which imbedded—relicks of extraneous fossils observed with it—other discoveries of extraneous fossils in the same place or its vicinity—miscellaneous remarks.

The name of the place, the depth, and the kind of matrix in which an extraneous fossil is found, are the principal points necessary to be determined: but it is hoped that the College will not be

deprived of any extraneous fossil, because, at the time of its discovery, other particulars were not ascertained, or not recorded.

The preceding DIRECTIONS and OBSERVATIONS, are designed, principally, for Travellers of research and public spirit. These SUPPLEMENTARY REMARKS claim the attention particularly of SURGEONS, and other persons conversant with anatomy, zealous for the improvement of the healing art.

As the provisions and resources of Nature, shewn in extraordinary or monstrous formations, assist in explaining her intentions in the ordinary structure of organs, and elucidate the general economy of animals; such productions are of valuable consideration. No occurrence of the kind, therefore, should be neglected. If the whole animal cannot be kept, the parts at least, which have immediate relation to the circumstance of monstrosity, should be preserved.

A sense of the importance of preparations of MORBID PARTS, to the cultivation of the knowledge of diseases, it is expected will appear by liberal Donations. A short and plain account of the case in which a morbid change has happened in any part, would add greatly to the utility of a preparation of the subject.

Brute animals frequently afford instances of extraordinary productions, and of expressions of deviations from the healthy condition and offices of parts; useful in explaining alterations in the human organs, besides advancing veterinary knowledge.

Examples of such productions and expressions, are therefore to be sought for among persons who have opportunities of making observations upon dead animals.

Provision is made in the College, for recording, and handing down, all the circumstances appertaining to every DONATION for the MUSEUM.
