

Skeletons may be roughly prepared by skinning the animal and removing all the viscera, together with as much of the flesh as possible. The bones should then be exposed to the sun or air until completely dried. Previously, however, the brain of large animals should be removed by separating the skull from the spine, and extracting the contents through the large hole in the back of the head. In case it becomes necessary to disjoint a skeleton, care should be taken to attach a common mark to all the pieces, especially when more than one individual is packed in the same box.

Skulls and skeletons may frequently be picked up, already cleaned by other animals or exposure to weather. By placing small animals near an ant's nest, or in water occupied by tadpoles, or small crustacea, very beautiful skeletons may often be obtained. The sea beach sometimes affords rich treasures in the remains of porpoises, sharks, whales, large fishes, and other aquatic species.

§ VII. PLANTS.

The collector of plants requires but little apparatus; a few quires or reams of unsized paper, of folio size, will furnish all that will be required. The specimens, as gathered, may be placed in a tin-box, or, still better, in a portfolio of paper, until reaching home. Here they are to be spread out carefully between sheets of the paper, and these laid one on top of the other, with several sheets between each. The pile is now to be placed between two boards, and subjected to a pressure of fifty pounds or less. This may be given by weights, or by means of two straps, one at each end. In travelling, the straps will be found most convenient. The papers must be changed every day, and, when perfectly dry, transferred to fresh sheets. It will be found very convenient to have a number of blank labels, with strings attached, by which they may be fastened on a specimen when collected, as soon as notes of locality, color of flowers, date, &c., are made upon it.

In many instances, old newspapers will be found to answer a good purpose both in drying and in keeping plants, although the unprinted paper is best—the more porous and absorbent the better.

While on a march, the following directions for collecting plants, drawn up by Major Rich, are recommended:—

Have thick cartridge, or envelope paper, folded in *quarto* form, and kept close, and even by binding with strong cord; newspapers will answer, but are liable to chafe and wear out; a few are very convenient to mix in with the hard paper as dryers. This herbarium may be rolled up in the blanket while travelling and placed on a pack animal. The specimens collected along the road may be kept in the crown of the hat when without a collecting-box, and placed in paper at noon or at night. Great care should be taken to keep the papers dry and free from mould. When there is not time at noon to dry the papers in the sun, they should be dried at night by the fire, when, also, the dried specimens are placed at the bottom of the bundle, making room on top for the next day's collection. A tin collecting-box is very necessary; plants may be preserved for two or three days in one if kept damp and cool. It is also convenient in collecting *land-shells*, which is generally considered part of a botanist's duty. A collector should also always be provided with plenty of ready-made seed papers, not only for preserving seeds, but mosses and minute plants. Many seeds and fruits cannot be put in the herbarium, particularly if of a succulent nature, causing mouldiness, and others form irregularities and inequalities in the papers, thus breaking specimens and causing small ones and seeds to drop out. Fruits of this kind should be numbered to correspond with the specimen, and kept in the saddle bag or some such place. It is necessary, in order to make good specimens, to avoid heavy pressure and keep the papers well dried, otherwise they get mouldy, turn black, or decay.

On board ship, it is all-important to keep the collections from getting wet with salt-water. The papers can generally be dried at the galley. The whole herbarium should be exposed to the sun as often as possible, and frequently examined, and the mould brushed off with a feather or camel's-hair pencil.

§ VIII. MINERALS AND FOSSILS.

The collections in mineralogy and paleontology are amongst all, those which are most easily made; whilst, on the other hand, their weight, especially when on a march, will prevent many from making such upon an extensive scale.

All the preparation usually needed for preserving minerals and fossils consists in wrapping the specimens separately in paper, with a label inside for the locality, and packing so as to prevent rubbing. Crumbling fossils may be soaked to advantage in a solution of glue.

A dry fossil, whatever it be, should be collected. Minerals and samples of rocks are also desirable. The latter should be properly selected, and cut to five by three inches of surface, and one to two inches thick.

Specimens ought to be tightly packed up in boxes, taking care that each one is wrapped up separately, in order that the angles or crystalline surfaces should not be destroyed by transportation; their value depending upon their good condition. The same precautions will be required for corals. The interstices between the specimens in the box or cask, may be occupied by sawdust, sand, shavings, hay, cotton, or other soft substance. It is absolutely essential, for land carriage, that no cavity be left in the vessel, or box.

§ IX. DESIDERATA.

As comparatively little is known of the animals and plants of the country west of the Mississippi and Gulf of Mexico, the attention of officers of the army, and others, is especially invited to this region. Of the fresh water fishes, trout, grayling, minnows, &c., little or nothing is on record; and the same may be said of the marine species. The reptiles, birds, smaller mammalia (squirrels, marmots, gophers, pouched rats, hares, &c.) and all other animals, should also be carefully collected.

This region likewise abounds in fossil bones, teeth, &c., of the greatest interest, especially in those portions known as "Mauvaises Terres," or "Bad Lands," and occurring along the Missouri and its tributaries, White River, Milk River, Platte, Eau qui Court, &c. The banks and beds of these and other streams likewise contain rich treasures of fossil bones. Similar remains are to be looked for in all caves, peat bogs, alluvial soil, marl pits, fissures in rocks, and other localities throughout North America.

A list of the principal species of large North American animals is subjoined, with reference to the collection of skins, skulls, horns, and skeletons. For the purpose of having complete series in the different stages of age and sex, and for supplying other museums, it is desirable to have a considerable number of the skulls of each species. When possible, at least one skeleton should be procured. It must, however, be remembered, that a single tooth or bone of an animal, in the absence of anything more, will be of importance. Each specimen should, as far as practicable, have the approximate age, sex, and locality, distinctly marked on the bone in pen or pencil.

HUMAN RACES, civilized and uncivilized.	SEA OTTER.
BUFFALO.	COMMON OTTER.
MUSK OX.	GRIZZLY BEAR.
MOUNTAIN SHEEP, or BIG-HORN.	WHITE BEAR.
CALIFORNIA WILD SHEEP.	BEARS, other species.
	RACCOON, especially from California.