

**THE NATURALIST'S
ASSISTANT; A HANDBOOK
FOR THE COLLECTOR AND
STUDENT**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649117611

The naturalist's assistant; a handbook for the collector and student by J. S. Kingsley

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Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

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J. S. KINGSLEY

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NATURALISTS' ASSISTANT.

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THE
NATURALIST'S ASSISTANT

A Hand-Book for the Collector and Student

WITH A BIBLIOGRAPHY OF FIFTEEN HUNDRED WORKS
NECESSARY FOR THE SYSTEMATIC
ZOOLOGIST

BY J. S. KINGSLEY



BOSTON
S. E. CASSINO, PUBLISHER
1882

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ELECTROTYPED.
BOSTON STEREOTYPE FOUNDRY,
No. 4 PEARL STREET.

CHAPTER I.

COLLECTING AND PRESERVING SPECIMENS.

MANY treatises and papers have been written on the methods of collecting and preserving zoölogical specimens; the more important of which are enumerated below. Space prevents giving the various operations in detail in this volume, but it is hoped that the directions given, although concise, will prove explicit and valuable. For more extended accounts of the methods employed in collecting and preserving specimens, the student is referred to the following works:

- Boitard — *Manuel du Naturaliste Préparateur*. Paris, 1853.
T. Brown — *The Taxidermist's Manual*. London, 1859.
Elliott Coues — *Field Ornithology*. Salem, 1874.
J. B. Davies — *Naturalists' Guide*. Edinburgh, 1853.
G. Dimmock — *Directions for the Collecting of Coleoptera*. Springfield, Mass., 1872.
J. H. Emerton — *Life on the Seashore*. Salem, 1880.
James Lewis — *Directions for Collecting Land and Fresh Water Shells* (*American Naturalist*, vol. ii, 1868).
C. J. Maynard — *Naturalists' Guide*. Salem, 1870.
A. S. Packard, jr. — *Directions for Collecting and Preserving Insects* (*Smithsonian Institution*).
Smithsonian Directions for Collectors.
W. Swainson — *Taxidermy*. London, 1851.

C. A. Walker—Hints on Taxidermy (American Naturalist, vol. iii, 1870).

Lord Walsingham—Directions for Collecting Micro-Lepidoptera (American Naturalist, vol. vi, 1872).

S. P. Woodward—Manual of the Mollusca. London, 1871.

VERTEBRATES.

Mammals and birds are most readily procured by shooting with a gun, using shot large enough to kill, but not so large as seriously to injure the specimen. The size of the shot to be employed cannot, of course, be dogmatically prescribed, as it varies with the size of the animal, but in general terms "number 8" shot will be large enough for all birds under the size of a pigeon, while for birds of greater bulk, "number 5", or larger, will be required. These remarks apply equally well to the smaller mammals; for the larger ones a rifle may be necessary. It must be insisted on that the collector shoot at any part of the body rather than at the head. Some collectors use a bow and arrow or a blow gun for the smaller birds, and with slight practice become very expert. Traps and snares of various sorts are frequently employed and with the advantage of obtaining the specimen in an uninjured condition. "Bird-lime" is also used to capture birds alive.

The English method of making this substance is as follows: the middle bark of the holly, mistletoe or distaff-thistle, is chopped up and boiled in water several hours. The resulting liquid is then strained and concentrated by evaporation until it assumes a gelatinous consistency, resembling moist putty. Doubtless the bark of several of our American trees

and shrubs would answer the same purpose, but the writer is not aware of any experiments having been tried. A substitute may be made by taking ordinary wheat flour, placing it in a bag of fine muslin and washing it in running water, aiding the process by squeezing until all the starch is washed out, and only the *gluten* remains behind. This gluten is an adhesive substance, which is said to answer the purpose well.

A third formula for bird-lime is to take linseed oil and heat it over a slow fire (carefully watching it to see that it does not burn), until it is very thick, then pour it into cold water. If it should prove too thick, the addition of a little pine tar will readily thin it for use.

The bird-lime should be smeared on the branches of trees, etc., where birds most do congregate, and by adhering to their feet, it holds them fast, and renders them an easy prey to the collector.

No matter how procured, all mammals and birds intended for stuffing should have the mouth, nostrils, anus and all wounds, stopped immediately with cotton wool to prevent any soiling of the fur or feathers. It is also well to place each bird head first in a cone made of cartridge paper, before placing in the game bag, as this will prevent disarrangement of the feathers.

All Vertebrates are really more valuable as alcoholic specimens, than they are when mounted after the usual manner of taxidermists, as the naturalist is then able at any time to pursue any desired investigation of their anatomy, a course from which he is utterly debarred with stuffed specimens. Before being placed in spirit, the abdominal walls of all Ver-

tebrates should be cut open, care being taken not to injure the viscera. This allows the alcohol to readily penetrate the interior. It is also well to remove a portion of the skull, so that the preservative fluid can have access to the brain. Alcoholic specimens of foreign vertebrates thus prepared are a great desideratum in all museums, and especially in those where it is realized that science is more than skin deep, and consists of more than a lot of scientific names.

The art of skinning mammals and birds may be more readily learned by seeing another perform the operation than from pages of description. For those who do not have an opportunity of learning the methods employed by observation, the following directions which are modified from those given in Davies' "Naturalist's Guide" (by the way a very valuable little work) may prove of use.

MAMMALS.

The cotton wool is first removed from the nostrils, mouth, anus and wounds and replaced by fresh plugs. The animal is then laid on its back, its legs pressed out and the fur parted on the median line of the ventral surface. An incision is then made through the skin, at the posterior portion of the abdomen, care being taken to cut the skin only and not the underlying muscles, this incision to be continued forward to near the neck. With the left hand the skin is then raised first on one side and then on the other, and at the same time separated from the adjacent muscles with the *handle* of the scalpel, an ivory paper knife or other blunt instrument held in