

FIRST-YEAR PHYSIOLOGICAL TECHNIQUE

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INTRODUCTION

This is not a textbook of practical physiology: it is a collection of notes on the management of apparatus and of experiments. One of the commonest complaints of the student is that while he understands the theory of experimental work, he is never shown how exactly to use his apparatus. The task of showing devolves on the demonstrator, and the ground I have covered here is roughly the ground which demonstrators cover verbally. The point of putting it on paper is that one cannot always receive verbal coaching before the class and short hours with long syllabuses leave little enough time for the actual experiment. I have deliberately left out everything which is to be had in the ordinary course of reading – the scope of this book is limited to the imparting of tips, of which, at root, technique ultimately consists.

HOW TO USE THIS BOOK

The material is divided into arbitrary sections covering the general sections of the elementary syllabus. Paragraphs in large type are 'essential' – if you omit them you might as well not use the book – while those in smaller type cover in outline one or two techniques and subjects which are important for the understanding of current literature, but which do not fall in the scope of most ordinary physiology courses. A good textbook and practical textbook are essential even to those who rely on prefabricated class sheets.

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CHAPTER ONE

WAYS AND MEANS

'Where shall I begin, your Majesty?' asked the Rabbit. 'Begin at the beginning,' the King said gravely, 'and go on till you come to the end; then stop.'

I. THE TOOLS

The student who wishes to master laboratory technique should begin his elementary physiology with a set of instruments designed for the purpose. It is unwise to rely on anatomy outfits. They are rarely suitable for handling frog tissues, which are used for most of the elementary experiments; a scalpel, for example, should never be needed for any purpose except sharpening pencils. Instead, therefore, of spending money on 'sets' of instruments, begin by providing yourself with the following:

Fine-pointed scissors, the most useful instrument of all for physiology preparations.

Coarse-pointed scissors, which need not be made by a firm of surgical instrument makers. They will be used almost entirely for cutting inorganic matter.

Blunt probe.

One pair mosquito artery forceps, for holding slippery objects.

Fine-pointed spring forceps, not the variety which are made of strip metal, nor that which has a toothed tip.

One packet of ordinary pins.

One packet of entomological pins.

A card of *fuse-wire*, for use as a quick means of making electrodes which are not too springy.

A small *electrical screwdriver*.