

**PRIMARY LESSONS IN
HUMAN PHYSIOLOGY
AND HEALTH**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649356973

Primary lessons in human physiology and health by Oliver P. Jenkins

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

OLIVER P. JENKINS

**PRIMARY LESSONS IN
HUMAN PHYSIOLOGY
AND HEALTH**

PRIMARY LESSONS
IN
HUMAN PHYSIOLOGY
AND HEALTH

BY

OLIVER P. JENKINS, Ph.D.

PROFESSOR OF PHYSIOLOGY AND HISTOLOGY IN LELAND
STANFORD JUNIOR UNIVERSITY



NEW YORK ·· CINCINNATI ·· CHICAGO
AMERICAN BOOK COMPANY

COPYRIGHT, 1906, BY
OLIVER P. JENKINS,
E. P. 1

QP36
J52
1906

3137

A WORD TO THE TEACHER

THESE lessons have been prepared as a guide to an elementary study of the body and the essentials for maintaining its health. It is assumed by the author that the book will be used as a guide only, and that it is the body and its actions and not the book that is to be studied. In these years of experience in teaching nature study and science it has long been conceded that the objects themselves present are necessary for the formation of clear conceptions, and clear conceptions must be obtained or the whole work will be a failure. It will be readily seen that there are two distinct subjects of these Lessons, — Physiology and Hygiene. Yet on account of the youth of the students the subjects are intermingled in their treatment.

Perhaps it would not be out of place at this time for the author to state his firm conviction as to the relation of these two subjects.

The importance of hygiene will be admitted by all; but clear conceptions of its aims and teachings cannot exist without a foundation in the knowledge of the structure and functions of the parts to be cared for. This is true for children as well as adults. The interest in pure air and the desire to obtain it will certainly be much heightened in one who has at least a few clear ideas of what it is in the air that the body needs, of where in the body the need exists, and what the

apparatus is, and how it works, that brings the oxygen to the place at which it is needed. A knowledge of what the muscle is like, how it is attached to a bone, and how it moves, adds greatly to the interest in exercise of the muscle. So with the heart, the eye, and any other organ,—even an elementary view of its beautiful structure and the way it performs its work makes the whole subject of its care more interesting and definite.

One of the causes of the failure of physiology and hygiene to interest pupils is the indefiniteness of much of the work and the haziness of the ideas gained from it. This, the author believes, can be remedied by making everything as clear as possible by illustration, experiment, and observation. The subject then becomes real and the knowledge usable, and these qualities always insure a lively interest.

The recent growing interest in nature study and agriculture as school subjects makes greater demands on the better teaching of physiology and hygiene. The structure of the bodies of the domestic animals and the functions of their organs are in general the same as that of the human body. The laws of health apply equally to them. Their needs of exercise, good air, good food, and sunshine are the same. Wounds, injuries, and disease are of the same nature with them as with man. It is only certain modifications of the general knowledge and rules that are necessary in each case. Physiology, then, even the most elementary, has the responsibility of being an introduction to a very large field and consequently requires all the care and skill that can be given to it.

A word about the anatomical and other terms used in this little book. The author agrees with those who oppose the introduction of terms which can have no meaning to the pupils after fair attention is given to the subject. But it is certainly a mistake to avoid the use of words which are very convenient terms for things that have been actually seen. It is also a mistake to substitute terms not in common use for those that are the real names of the parts, on a supposition that it is easier for the children. The fact is that such a custom makes the work harder for the pupils. The terms used in this book, as the author knows by actual experience with children, are as easily learned as any terms when the thing named is seen and its use is understood. They are certainly fewer in number and as much within the powers of the pupils as are those in the other subjects in the school, — number, language, and history, for example.

A word also about how far we can go with young children in explaining various functions and processes of the body. This depends much on the method of teaching, and teachers would differ greatly in their judgment. The author believes that as far as the teacher does go, what he gives should be definite and mean something. To illustrate, some might maintain that with the heart it is enough with young pupils to say that it is a pump to move the blood along, etc. Now, to most of the pupils the word *pump* conveys no definite notion. How it works is wholly unknown to them. Then there are many kinds of pumps. No one of them works like the heart. None of them have valves like those of the heart. To make the

word *pump* clear a pump must be seen and its valves examined. Would it not be easier and far better in every way to examine a heart at the outset and see what its valves are like and how they work. The word *heart* gives a real and usable conception, while the word *pump* without illustration and comparison would be meaningless. *Heart* is as easy as *pump*. Illustrations of such indefinite work in physiology could easily be multiplied.

All of the anatomical and physiological parts of this book can be illustrated by parts of the bodies of small animals. If the part is prepared neatly, there can be no objectionable feature about it. The leg of a chicken or of a frog answers well to show how muscles look and how they are attached to bones, how the joints are formed, how the nerves appear, etc. These animals will give much other material. A skeleton of a cat or a dog will illustrate well the human skeleton. All these preparations can be made by the teacher or by one of the older pupils. It hardly need be said that no animal should be killed before the school or class, or anything else done that would offend common sense. It has been the observation of the author that a personal knowledge on the part of pupils of the beautiful structure of the bodies of animals has the effect of increasing the admiration for animals and begetting a sympathy for them in their bodily pains or troubles.

The human body and the bodies of the lower animals should be studied also in action, each in its own natural surroundings, as organisms adapted to these surroundings. It is only by constantly seeing the organisms

in their true relations to other things that even elementary conceptions of physiological facts can be obtained.

The teacher need not feel discouraged because he is not provided with charts or other apparatus; he can make use of the living world around him to illustrate the study of the most interesting of living organisms. The work thus pursued will be of real value beyond the interesting knowledge gained, and will bring the reward of a satisfaction of having accomplished something of worth.

In the second book of this series the writer has introduced directions for the practical demonstration of many anatomical and physiological facts, which might well be suggestive to the teacher of this book. For these directions and for a fuller discussion of many of the subjects treated here reference may be made to the second book. There are now published many handbooks for the dissection of many of the groups of the lower animals, any one of which will be helpful in preparing illustrations for the study of the human body.

But illustrations of the work, or subjects of study, will be numerous enough and more vital if they come from observation and experience with the objects of study.

O. P. JENKINS.