SCIENCE READERS, BOOK V

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649698981

Science Readers, Book V by Vincent T. Murché

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

www.triestepublishing.com

VINCENT T. MURCHÉ

SCIENCE READERS, BOOK V

Trieste

SCIENCE READERS

BY

VINCENT T. MURCHÉ

AUTHOR OF 'OBJECT LESSONS IN ELEMENTARY SCIENCE,' 'OBJECT LESSONS IN DOMESTIC ECONOMY,' 'OBJECT LESSONS FOR INFANTS' 'DOMESTIC SCIENCE READERS'

BOOK V

MACMILLAN AND CO., LIMITED
ST. MARTIN'S STREET, LONDON, W.C.
NEW YORK: THE MACMILLAN COMPANY
1906

First Edition 1895
Reprinted 1897, 1899, 1901, 1902, 1903, 1904, 1906

PREFACE

FOLLOWING on the lines of its predecessor, this, the Fifth Book of the series, aims at still further expanding and developing the truths and principles taught in the earlier books. Comprehensive as the whole scheme is, the young reader will scarcely experience a difficulty in grasping any one subject, because the way has been carefully prepared beforehand, step by step. He sees at once that the various developments are the natural outcome of what has gone before. Each lesson from the companion book, the teacher's manual, is here reproduced, in an easy, chatty style, from the child's own standpoint. It is felt that these readings, used as a supplementary aid to the oral lessons, cannot fail to rivet the teaching on the mind.

This volume, like the rest, has been profusely illustrated; but every picture is meant to be a real teaching aid, both in respect to the lessons on animal and plant life, and in the experimental lessons.

It should be observed that some of the subjects do not lend themselves to pictorial illustration so readily as others. It is on this account, and to prevent one section of the book from becoming less attractive to the child than another, that the subjects have been intermingled in these reading lessons. Any book with the bulk of its illustrations in one or two sections, would be a fatal mistake, so far as the child was concerned. The teacher, who uses these readers to supplement the oral lessons, will find each subject, and every part of each subject, in its natural order, although the readings are interspersed one with another. This remark applies equally to each book of the series.

CONTENTS

BOOK V

Lesson I

MATTER

OUR young scientists are still eagerly pressing onward in their search for knowledge, under the careful and sympathetic guidance of their teacher, Mr. Wilson. Step by step they have been advancing through the various stages, beginning with simple facts, either such as were evident to their own observation, or such as could be shown by simple experiment. In this way they have acquired a rich store of scientific facts, and they are now, in the higher stages, learning to offer simple explanations of these facts, and to familiarise themselves with the proper names for the various objects and operations with which they come in contact.

Last year's course made this very evident, and it will become more so as they proceed to higher subjects. Both boys have still the Scientific Institute as their goal, where they mean to make their mark some day.

"I remember," said Mr. Wilson, "I began last year's course by introducing a new word—*matter*.

We have since then used this word, rather than speak of *a substance, an article*, or *a body*. I will now try and help you to form a clearer conception of what we mean by it. This brick lying on the table shall give us the start.

"Without taking it up, I want you to tell me all you can about it. You will, of course, begin by describing its shape, size, and colour. But how did you gain this information? Your eyes told you. You learned it *through the sense of sight*.

"Now take the brick in your hands and shut your eyes, and you will learn something more, through another sense—*the sense of touch*. This tells you that the body is hard and rough. A blind man could tell that.

"But let us leave the brick and turn our attention to these two bottles. Each contains a clear liquid. The liquids are totally unlike each other, but neither of the above senses can tell us this. How can we find out? Here we have to rely upon another sense—*the sense of smell*—to distinguish the two bodies; and this tells us that one is water, the other paraffin oil.

"We might take a piece of salt and a piece of sugar, cut to exactly the same size and shape; and it would be impossible to tell one from the other, by either of the senses to which we have already appealed. We put our tongue to each, and we learn at once what we want to know, but this time through another sense—*the sense of taste*.

"I think I have shown you enough to make the rest of my explanation simple. Everything around us which appeals to us in this way, through one or more of our senses, we call matter.

"By the name *matter*, then, we mean *every substance that exists;* every substance about which we may learn through our senses. The air around us is matter. We know that it has an existence, for although we can neither see, smell, nor taste it, we can hear it when it is in motion, and we can feel it as

it rushes through our mouth and nostrils in the act of breathing.

"Suppose I now show you a little experiment. I have here a small piece of gun-cotton, which is a highly explosive substance. I place it in the palm of my hand and apply a lighted taper. The result is a sudden flash; the substance burns so rapidly that every particle of it disappears; and yet the hand scarcely feels the heat.

"What has become of the gun-cotton? It has not