ELEMENTARY SCIENCE FOR PUPIL TEACHERS: PHYSICS SECTION, CHEMISTRY SECTION WITH NUMEROUS DIAGRAMS

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649570706

Elementary Science for Pupil Teachers: Physics Section, Chemistry Section with Numerous Diagrams by W. T. Clough & A. E. Dunstan

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

W. T. CLOUGH & A. E. DUNSTAN

ELEMENTARY SCIENCE FOR PUPIL TEACHERS: PHYSICS SECTION, CHEMISTRY SECTION WITH NUMEROUS DIAGRAMS

Trieste

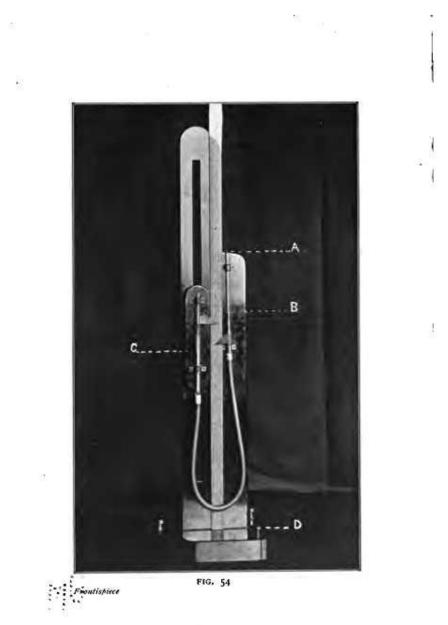
METHUEN'S TEXT-BOOKS OF SCIENCE

10 N

ELEMENTARY SCIENCE FOR PUPIL TEACHERS

4

35



ELEMENTARY SCIENCE FOR PUPIL TEACHERS

÷.,

.

PHYSICS SECTION

BY W. T. CLOUGH, A.R.C.SC. (LOND.), F.C.S.

HEAD OF THE PHYSICAL DEPARTMENT, EAST HAM TECHNICAL COLLEGE

同時

CHEMISTRY SECTION

BY A. E. DUNSTAN, B.Sc. (LOND.), F.C.S.

LICENTIATE (HONS.) OF THE COLLEGE OF PRECEPTORS HEAD OF THE CHEMICAL DEFAUTMENT, BAST HAM TECHNICAL COLLEGE

WITH NUMEROUS DIAGRAMS

METHUEN & CO. 36 ESSEX STREET W.C LONDON

.

chemistry Sotheran 6-9-24 10826

WH = -51- 10 - 2 1

52

CONTENTS

PART I.-PHYSICS

| | MEASUREMENT / | ND | MAT | TER | | | | |
|--------|--|----------|------------|------|---------------|------|------|------|
| CHAPTH | | 0.000 | 02020 | 3600 | | | | PACE |
| I. | MEASUREMENT OF LENGTH | <u>.</u> | 92 | Sk. | | | ÷2 | I |
| II. | MEASURING INSTRUMENTS | 40 | 1 | 35 | | | | 11 |
| III. | MEASUREMENT OF AREA | | | | • | | | 16 |
| | MEASUREMENT OF VOLUME | | | | | | | 21 |
| v. | MRASUREMENT OF MASS-T COMMON BALANCE-DETE | | | | | | | |
| | VOLUMES BY WEIGHING | * | \approx | | | | | 24 |
| VI. | STATES OF MATTER . | * | 2 | 57 | | | 80 | 31 |
| VII. | DENSITY | • | 2 | | 6 . 11 | | 5 | 36 |
| VIII. | SPECIFIC GRAVITY-THE PA | LINCI | FLE | OF A | RCHI | MEDI | \$5. | 40 |
| IX. | THE PRESSURE OF THE AIR | | | | | | | 51 |

PART II.-PHYSICS HEAT

| x. | NATURE OF HEAT-E | XPANS | SION | | 3 | • | ÷ | | 57 |
|------|--------------------|------------|------|------------|-------|-------|---|--------|-------|
| XI. | THE PRINCIPLE AND | CTION | OF | THE | THER- | | | | |
| | MOMETER | 8 5 | | | 1 | S. 1. | • | | 69 |
| XII. | EXPANSION OF GASES | | | | | | | | 74 |
| | CHANGE OF STATE. | | | | | | | | 1.444 |
| XIV. | VAPOUR-VAPOUR PR | ESSUR | E | 3 4 | | Sec | • | \sim | 88 |

PART III .- CHEMISTRY

| I. | THE I | | • | ÷. | | 97 | | | | |
|----|-------|----------|------|--------|-----|-----|-----|-----|----|-----|
| п. | SOME | COMMON | SUBS | TANCES | AND | THE | EFF | BCT | OF | |
| | HBA | T ON THE | к. | | | | | | | 100 |

CONTENTS

| CHAPTER | | 12mm | | | | | | | | | | | PACE |
|---------|------|--------|------|------------------|----------------------------------|-------|----------|------|--------------|----------------|-------|----------|------|
| 111. | THE | C.k.k. | SCT | 08 1 | IEAT | ON | SOME | ME | TALS | AND | SAL | rs. | 104 |
| IV. | THE | Аты | OSPH | ERS | 1 2 | 10 | 2 | 1.1 | 0.00 | 53 | 22 | • | 108 |
| v. | THE | SEP | ARAT | ION | OF | THE | ACT | IVB | CON | STITU | BNT | OF | |
| | AI | 2 | | • | | | | | | | | | 115 |
| VI. | PREI | ARA | TION | OF . | ACTI | VE A | IR | | 1.00 | | | | 118 |
| VII. | DIFF | RREN | т кі | NDS | OF | Oxid | ES | | | | - | 80) N | 121 |
| VIII. | INAC | TIVE | AIR | | ÷ | | | | | | | * | 124 |
| IX. | INFL | AMM | ABLE | AIR | e. | | | ÷ | | e | 8 | | 125 |
| x. | Сом | POSIT | ION | OF V | VATE | CR. | 5¥ | 33 | (1) | \overline{a} | ÷. | 4 | 128 |
| XI. | WAT | ER | | \mathbf{z}_{i} | $\widetilde{\mathbf{x}}_{i}^{2}$ | 32 | 1 | 14 | 243 | 10 | 33 | 4 | 134 |
| XII. | SOLU | TION | ř. | 80 | | 2 | <u>(</u> | 12 | | 22 | | | 137 |
| хіп. | CRYS | TALL | ISAT | ION | | | | i.e | 1.01 | 70 | | | 143 |
| xiv. | ELES | MENT | s, M | IXTU | RES | AND | Сом | POUN | IDS | ÷0. | - 10 | | 148 |
| XV, | Тяв | QUA | NTIT | ATIV | B C | OMPOS | 1110 | N OF | WA | TBR | | | 154 |
| XVI. | MEA | SURK | MENT | r OF | THE | VOL | UMB | OF (| GAS B | VOLV | BD II | N A | |
| | RE. | ACTIC | N | •5 | 25 | 30 | 67 | 82 | 8.53 | • | 89 | 2 | 157 |
| XVII. | Furn | THER | Exa | MIN | ATIO | N OF | Com | MON | SUB | STAN | ES | | 161 |

APPENDIX

| FITTING | 3 | | 85 | 30 | | | 33 | 1985 | ÷ | 8 | $^{\circ}$ | 167 |
|-----------|-----|----------------|------|------------|----|------------------|-----------|----------------------|----------|---------------|--------------|-----|
| TABLES OF | PHY | SICA | L Co | NSTA | TS | \mathbb{S}^{2} | 3. • 1 | 848 | . | 2 | 4 | 169 |
| GLOSSARY | AND | DEFI | NITI | ONS | × | ÷. | 62 | $(\mathbf{\hat{s}})$ | 1 | \mathcal{D} | i. | 172 |
| Answers | 2 | • | • | | ٠ | | 1 | e. | ē | ÷ | | 178 |
| INDEX | | (3 * 3) | ts: | 1 5 | æ | 38 | 132 | 100 | ::: | | \mathbf{z} | 180 |

111

1

PART I PHYSICS

25

1