

**SCIENCE IN THE
SERVICE OF
MAN. ELECTRICITY**

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Science in the Service of Man. Electricity by Sydney G. Starling

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SYDNEY G. STARLING

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UNIVERSITY
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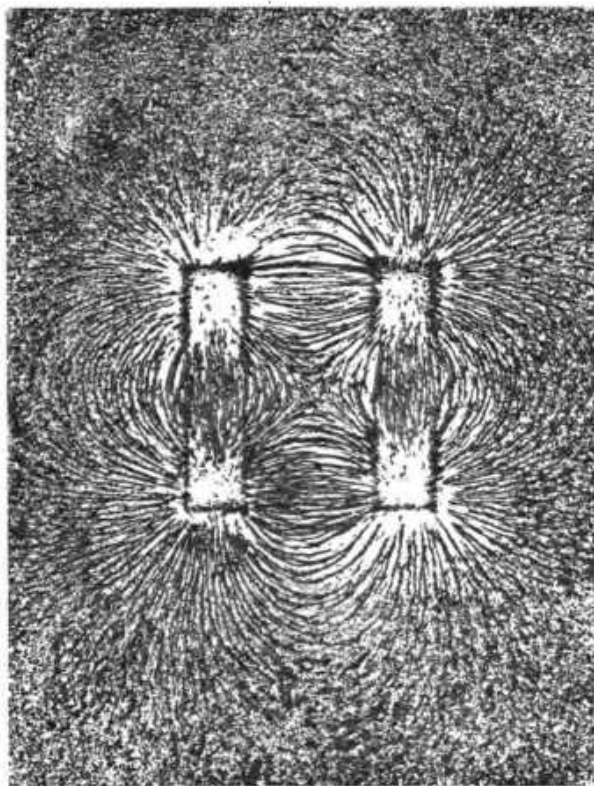


FIG. 2.—Magnetic lines of force of a pair of bar magnets, exhibited by means of iron filings.

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ELECTRICITY

BY

SYDNEY G. STARLING

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TO WHOM IT MAY CONCERN
ANDREW L. GARDNER

1994

PREFACE

THE success of the author of "Chemistry in the Service of Man" in showing how the science of chemistry arose and explaining the position of chemistry to-day has encouraged the writer to perform a similar task for electricity. The difficulty presented in this case lies deep in the subject itself, for most of the developments of the last eighty years are mathematical in character. In order to get over this difficulty two methods have been adopted, simple explanations have been given of the physical processes involved, and whenever necessary the terms used have been explained briefly at the end of the book.

The development of knowledge for its own sake is one of the highest services that can be rendered to man, and no branch of science is richer in intellectual achievement than electricity. The subject therefore exhibits in a particular degree that reaction between pure and applied science which is vital to the life of both. The writer has tried to show that the fostering of the study, teaching, and research in pure science is essential to the community which desires to retain its pre-eminence in industry.

It is not necessary to mention any particular development of the applications of electricity to emphasize its importance at the present time. One need only contrast for a moment the daily life in a civilized community at present, with that of two generations ago, when every message had to be carried personally, and communities were cut off from communication with each other, except by methods which required weeks and often months for their accomplishment.

No attempt has been made to give the latest forms and types of apparatus or methods, as such may be found in the current press; but the book endeavours to impart to the general reader,

and to the worker in other branches of science, some comprehension of the subject of electricity as it appears to the physicist of to-day.

I must express my thanks to Messrs. Longmans, Green & Co. for their loan of many diagrams, and to those Institutions which have so kindly lent illustrations, and in particular my thanks are due to Mr. J. W. Allen and Mr. J. C. Allen for their kindly and generous suggestions throughout the production of the book.

S. G. S.

WEST HAM,
February, 1922.

LIST OF PLATES

PLATE	FACING PAGE	
I.	FIG. 13.—Electro-magnet for lifting heavy masses of iron . <i>[From the "Journal" of the Institution of Electrical Engineers.]</i>	22
	FIG. 24.—24-kilowatt motor-generator, with front view of the four-pole direct-current dynamo <i>[From the "Journal" of the Institution of Electrical Engineers.]</i>	
II.	FIG. 28.—15 H.P. series motor with slip coupling to call attention to overload <i>[From the "Journal" of the Institution of Electrical Engineers.]</i>	104
	FIG. 64.—Single-line Murray transmitter <i>[From the "Journal" of the Institution of Electrical Engineers.]</i>	
III.	FIG. 123.—(a) Fracture of shaft of humerus by bullet. Bullet lying between fragments <i>[From Kaye's "X-Rays."]</i>	206
	FIG. 123.—(b) Fragmentation of ulna by shrapnel <i>[From Kaye's "X-Rays."]</i>	
	FIG. 124.—Coolidge X-ray tube in lead glass shield	
IV.	FIG. 120.—(a) Photograph by C. T. R. Wilson of the path of a beam of X-rays through air supersaturated with water vapour, showing the cathode or β -ray tracks produced. Magnification $2\frac{1}{2}$ diameters. <i>[From the "Proceedings" of the Royal Society.]</i>	218
	FIG. 120.—(b) Photograph by C. T. R. Wilson of the path of a beam of X-rays in air supersaturated with moisture. Magnification 6 diameters <i>[From Kaye's "X-Rays."]</i>	
	FIG. 126.—Photograph by C. T. R. Wilson of the track of an a particle from radium through air supersaturated with water vapour <i>[From "Proceedings" of the Royal Society.]</i>	

CONTENTS

CHAPTER I

HISTORICAL

	PAGE
Beginnings of Electricity—Lodestone and the magnet—Galvanism— Lines of force—Magnetic compass—Magnetic fields and electric currents—Electrolysis—Electrostatics	1

CHAPTER II

THE ELECTRO-MAGNET

Coils and Solenoids—Molecular theory of magnetisation—Electro- magnets—Electric brakes—Electric clocks—Electric bells—Electri- cally driven tuning-forks—Magnetic separation of minerals	18
--	----

CHAPTER III

THE DYNAMO

Faraday's laws of induced electromotive force—Continuous production of current—Armatures—Direct-current dynamo—Three-wire system of distribution	30
--	----

CHAPTER IV

THE ELECTRIC MOTOR

Force on a current in a magnetic field—Converse functions of dynamo and motor—Back electromotive force—Starting resistances—Motors used as brakes—Motor power-meters	39
--	----

CHAPTER V

ALTERNATING CURRENTS

Economical distribution of electric power—Induction coil—Transformers —Electric welding—Alternators—Arago's experiment—Induction motors—The magneto	50
---	----

CHAPTER VI

ELECTRIC LIGHTING

	PAGE
Incandescent lamps—Carbon filament—Metallic filament—Tungsten lamps—Electric arc—Automatic arc lamp—Flame arc lamp . . .	74

CHAPTER VII

THE ELECTRIC TELEGRAPH

Early systems—Morse code—Sounders and relays—Railway receiver—Siphon recorder—Duplex telegraphy—Diplex telegraphy—Quadruplex and multiplex telegraphy—Wheatstone's automatic telegraph—Murray printing telegraph—Atlantic cable	91
---	----

CHAPTER VIII

THE TELEPHONE

Bell telephone—Carbon microphone—Receivers—Induction coil—Jack and plug—Attenuation and distortion—Loading coils	110
--	-----

CHAPTER IX

ELECTROLYSIS AND BATTERIES

Early discoveries—Faraday's laws of electrolysis—Dissociation theory—Voltmeters—Electroplating—Electrotyping—Simple cell—Polarization—Daniell's cell—Standard cells—Leclanché cell—Storage cells or accumulators	125
--	-----

CHAPTER X

ELECTROMAGNETIC THEORY AND WIRELESS TELEGRAPHY

Oersted—Faraday—Maxwell—Oscillatory discharge of condenser—Electromagnetic waves—Radiation from aerial—Wireless sending—Alternators—Damped and undamped waves—Quenched spark—Singing arc—Detectors—Crystal and valve rectifiers—The triode as amplifier—The triode as generator—Wireless telephony—Aerials—Transmission of sounds by beam of light	145 /
--	-------

CHAPTER XI

GASES AND X-RAYS

Vacuum tubes—Discharge at high vacuum—Kathode rays—Ionization—Electrons—Canal rays—Isotopes—X-rays—X-ray tubes—Radiographs—Thermions—Wave-length of X-rays	189
--	-----

CHAPTER XII

RADIOACTIVITY

Bequerel's discovery—Radium—Thorium—Actinium— α -rays— β -rays— γ -rays—Radioactive changes—Radioactive series—Production of heat	209
Electrical terms in general use	231
INDEX	241