

A FIRST LOGIC BOOK

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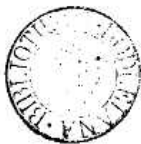
FIRST LOGIC BOOK.

BY

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*"Mehercle, if their sons be ingenious they shall want no instruction;
if their daughters be capable, I will put it to them."*—*Lose's Labor's Lost*,
Act iv. Sc. ii.



OXFORD:
JAMES PARKER AND CO.
1875.

PREFACE.

THE attempt is made, in the following pages, to render the bare rudiments of Deductive Logic intelligible to every person, of average intelligence, of either sex ; in the hope that those rudiments may be adopted, for both sexes, as a regular part of mental training.

(1) Arithmetic,

(2) The First Book of Euclid,

(3) The Rudiments of Deductive Logic,

supposing that each is *intelligently taught and mastered*, form an excellent course of mental training : one, moreover, which may easily be given at Schools.



PART I.

CHAPTER I.

OF THE ART OF LOGIC, so far as it will be treated of in the following pages, the purpose is TO LAY DOWN RULES WHEREBY TO DETERMINE—

1. *Any Proposition being assumed* to be true, what other Propositions must be maintained with it.*

2. *Any two or more Propositions being assumed* to be true, whether any, and, if any, what, other Propositions result from them.*

The former is the more generally applied. Rarely, if ever, in practice do we start from assumed Propositions in order to arrive at the resulting Proposition.

We take up Propositions from many different causes: when any one of these is challenged, we seek to discover those other Propositions by which it must be maintained.

For instance—our forefathers maintained (that) “Dueling is to be permitted.”

Asked “Why?” they would have replied, (because) “It is socially expedient.” Further pressed by “How so?” they would have said,

* Logic is concerned only with relative, not with absolute, truth, although incidentally it assists in arriving at the latter.

"It keeps up a sense of honour."

"It prevents bullying."

"It does much to equalise the weak and the strong."

Pressed again by "Well--what then?" they would have advanced the general assertions--

"Whatever keeps up a sense of honour,"	} is socially expedient."
..... prevents bullying,	
..... does much to equalise the weak and the strong,	

What then is a LOGICAL PROPOSITION?

A sentence which asserts that a certain attribute (or aggregate of attributes) does, or does not, exist in a certain Subject.

Its parts are, necessarily, four:

Subject—whereof something is asserted.

Predicate—asserted of the Subject.

Copula—shewing whether such assertion is affirmative or negative.

Sign of quantity—shewing of how much of the Subject the Predicate is asserted.

The Copula ordinarily employed is the present Indicative of the Verb "to be"; and, for reasons to be hereafter noticed, no other tense.

But, inasmuch as the office of the Copula is simply to indicate relation between Subject and Predicate as ideas, and the verb "to be" implies, unavoidably, their existence as things,

We propose to employ Algebraic signs, i. e., for affirmative assertions + , for negative assertions ---.

Examples of Logical Proposition in strict Form.

SIGN OF QUANTITY.	SUBJECT.	COPULA.	PREDICATE.
(a) Some	men	+	dishonest.
(b) Some	war	-	righteous.
(c) All	deceit	+	hateful.
(d) All	birds	-	quadrupeds.

The word PREDICATE is unavoidably ambiguous.

It means—

1. *The thing or attribute predicated*; as, above, Dishonesty, Righteousness, &c.
2. *The Term predicated*; Dishonest, Righteous, &c.

Since "dishonest" means "having dishonesty,"
 "righteous" . . . "having righteousness,"

the assertion is the same when we say,

for (a) Dishonesty exists in some men,

for (b) Righteousness does not exist in some wars.

But our own language (as do many others) expressly avoids this form and employs the other.

By PREDICATE therefore, until further notice, we shall understand *a Term expressive of a class*

- (1) in which the Subject is asserted to be, wholly or partially, included;
- (2) from which the Subject is asserted to be, wholly or partially, excluded.

We have thus FOUR distinct classes of Logical Proposition,

1. AFFIRMATIVE, in which the Predicate includes the whole Subject.
2. in which the Predicate includes only part of the Subject.
3. NEGATIVE, in which the Predicate excludes the whole Subject.
4. in which the Predicate excludes only part of the Subject.

NOTE THAT

- | | | |
|-------------------------------------|---|---------------------------|
| 1 and 3 are called <i>Universal</i> | { | Affirmative,
Negative. |
| 2 and 4 <i>Particular</i> | { | Affirmative,
Negative. |

The SIGNS OF QUANTITY are

for Universal Propositions, ALL,
for Particular Propositions, SOME.

But NOTE THAT the usage of our own language necessitates a modification of the SIGN "ALL" in the case of a Negative Proposition.

Thus: of the Proposition "*All men — infallible,*" the true meaning is "*All men are excluded from the class 'Infallible.'*"

But, if it is translated into ordinary English and written, "*All men are not infallible,*" it would be taken as implying "*Some men are, and some are not, infallible.*"

For this reason only the SIGN OF QUANTITY in an Universal Negative Proposition is No or NONE: i. e. instead of
 "The whole of the Subject is excluded from"
 "No part of the Subject is included in" } the Predicate.