OF

THE FIRST VOLUME.

INTRODUCTION.

1022					PAGE			
§	1. A definition at the commencement of a	subje	ct mus	t be				
	provisional	•	•		1			
	2. Is logic the art and science of reasoning?				2			
	3. Or the art and science of the pursuit of the	ruth P	•		3			
	4. Logic is concerned with inferences, not with intuitive truths							
	5. Relation of logic to the other sciences				8			
	6. Its utility, how shown				10			
	7. Definition of logic stated and illustrated	•			11			

BOOK I.

OF NAMES AND PROPOSITIONS.

CHAPTER I. Of the necessity of commencing with an Analysis of Language.

§	1.	Theory of names, why a necessary part of logic	•	•	17
	2.	First step in the analysis of Propositions .	•	•	18
	3.	Names must be studied before Things .		-	21

CHAPTER II. Of Names.

§	1.	Names are names of thing	ideas	•	•	23		
-		Words which are not nam		•	•	24		
	3.	General and Singular nam		•	•	27		
	4.	Concrete and Abstract	•	•		•	•	29
	5.	Connotative and Non-conn	•		•	•	31	
	6.	Positive and Negative	•	•	•	•		42
	7.	Relative and Absolute	•			•	•	44
	8.	Univocal and Æquivocal						47

										PÅGE
§	1.	Necessity	of an e	numera	tion o	f Namea	ble T	hings.	The	
-		-	ries of A							49
	2.	Ambiguit	y of the	most ge	neral	names				51
	3.	Feelings,	or state	s of con	scious	ness		•		54
	4.	Feelings	must be	disting	iished	from the	eir phy	sical an	tece-	
		dents.	Percept	tions, wh	at		•		•	56
	5.	Volitions	, and A	ctions, w	hat		•	•	•	59
	6.	Substanc	e and A	ttribute		•	•		•	60
		Body	•		•	•	•			61
	8.	Mind	•	•	•	•	•	•	•	67
	9.	Qualities	•	•	•				•	68
1	0.	Relations	••	•	•	•	•	•	•	71
]	1.	Resemble	ance	•	•	•	•	•	•	74
1	2.	Quantity	•	•	•	•	•	•	•	78
1	3.	All attrib	outes of	bodies	are g	rounded	on sta	ates of	con-	
		sciousn	. 88		•	•	•	•	•	79
1	4.	So also a	ll attribu	ites of n	ind.	•	•	•	•	80
1	5.	Recapitu	lation	•	•	•	•	•	•	81

CHAPTER III. Of the Things denoted by Names.

CHAPTER IV. Of Propositions.

§	1. Nature and office of	the copula	•	•	•	•	85
-	2. Affirmative and Neg	ative proposi	itions	•			87
	3. Simple and Complex	c .					89
	4. Universal, Particula	r, and Singul	lar				93

CHAPTER V. Of the Import of Propositions.

§	1.	Doctrine that a propositio	on is th	e expr	ession of	a rela	ation	
•		between two ideas	•	•	•			96
	2.	Doctrine that it is the exp	ression	n of a m	relation a	oetweer	1 the	
		meanings of two names	•	•	•			99
	3.	Doctrine that it consists i	n refer	ring so	mething	g to, or	ex-	
		cluding something from,	a clas	8.	•	•		103
	4.	What it really is .	•	•				108
	5.	It asserts (or denies) a se	equenc	e, a co	existenc	e, a si	mple	
		existence, a causation	•	•				110
	6.	— or a resemblance						112
	7.	Propositions of which the	terms	are ab	stract			115

				1	PAGE
§	1.	Essential and Accidental propositions .	•		120
	2.	All essential propositions are identical proposition	ns		121
	3.	Individuals have no essences	•		126
	4.	Real propositions, how distinguished from verbal	•	•	128
	5.	Two modes of representing the import of a Real pr	opositio	n	129

CHAPTER VII. Of the Nature of Classification, and the Five Predicables.

1.	Classification, how connected with Naming								132			
2.	The Predicab	les, w	hat			•	•	•	134			
3.	Genus and Sp	pecies	•			•	•		135			
4.	Kinds have a	real	existe	nce in n	ature				137			
5.	Differentia .		•		•		•	•	142			
6.	. Differentiæ for general purposes, and differentiæ for special											
	or technical	purp	oses		•		•		144			
7.	Proprium .					•		•	147			
8.	Accidens .		•		•			•	149			
	2. 3. 4. 5. 6. 7.	 The Predicab Genus and Sj Kinds have a Differentia Differentiæ for 	 The Predicables, w Genus and Species Kinds have a real of Differentia . Differentiæ for geno or technical purpo Proprium . 	 The Predicables, what Genus and Species . Kinds have a real existe Differentia Differentiæ for general p or technical purposes Proprium 	 The Predicables, what Genus and Species Kinds have a real existence in n Differentia Differentiæ for general purposes, or technical purposes Proprium 	 The Predicables, what Genus and Species Kinds have a real existence in nature Differentia Differentiæ for general purposes, and differentiæ for general purposes Proprium	 Genus and Species	 The Predicables, what	 The Predicables, what			

CHAPTER VIII. Of Definition.

§	1.	A definition, what	. 151									
-	2.	Every name can be defined, whose meaning is susceptible of	f									
		analysis	. 153									
	3.	Complete, how distinguished from incomplete definitions	. 155									
	4.	- and from descriptions	. 157									
	5.	What are called definitions of Things, are definitions of	f									
		Names with an implied assumption of the existence of										
		Things corresponding to them	. 161									
	6.	- even when such things do not in reality exist .	. 169									
	7.	Definitions, though of name:ly, must be grounded on	L .									
		knowledge of the corresponding Things	. 171									

BOOK II.

OF REASONING.

• J.,	1	CHAPTER I.	Of Inference,	or	Reasoning,	in	general.
-------	---	------------	---------------	----	------------	----	----------

						PAGE
§	1.	Retrospect of the preceding book .				179
Ĩ	2.	Inferences improperly so called .				181
	3.	Inferences proper, distinguished into	indu	actions	and	
		ratiocinations			•	185

CHAPTER II. Of Ratiocination, or Syllogism.

§	1.	Analysis of the Syllogism .		•	•	•	188
_	2.	The dictum de omni not the fou	ndation	of reaso	ning, bu	lt a	
		mere identical proposition			•	•	195
	3.	What is the really fundamental	axiom	of Ratio	cination	•	199
	4.	The other form of the axiom				•	201

CHAPTER III. Of the Functions, and Logical Value, of the Syllogism.

§ 1. Is the syllogism a petitio principii?	•	204
2. Insufficiency of the common theory	•	205
3. All inference is from particulars to particulars .	•	207
4. General propositions are a record of such inferences, and t	he	
rules of the syllogism are rules for the interpretation	of	
the record	•	216
5. The syllogism not the type of reasoning, but a test of it	•	220
6. The true type, what		224
7. Relation between Induction and Deduction .	•	228

CHAPTER IV. Of Trains of Reasoning, and Deductive Sciences.

§	1. For what purpose trains of reasoning exist	233
-	2. A train of reasoning is a series of inductive inferences .	233
	3 from particulars to particulars through marks of marks	236
	4. Why there are deductive sciences	239
	5. Why other sciences still remain experimental	243
	6. Experimental sciences may become deductive by the pro-	
	gress of experiment	245
	7. In what manner this usually takes place	247

CHAPTER V. Of Demonstration, and Necessary Truths.

			PAGE
§	1. The Theorems of geometry are necessary truths, only in the sense of percentage following form the set of the sense of percentage of the sense of	in	950
	the sense of necessarily following from hypotheses	•	250
	2. Those hypotheses are real facts with some of their circum	n-	
	stances omitted	•	254
	3. Some of the first principles of geometry are axioms, an	nd	
	these are not hypothetical	•	256
	4. — but are experimental truths		257
	5. An objection answered	•	260
	6. Dr. Whewell's opinions on axioms examined .		263
	CHAPTER VI. The same Subject continued.		
	CHAFTER VI. I've sume Subject convention.		
8	1. All deductive sciences are inductive		277
	2. The propositions of the science of number are not verba	al.	
	but generalizations from experience	-,	279
	3. In what sense hypothetical	•	
		•	284
	4. The characteristic property of demonstrative science is	to	
	be hypothetical	•	286
	5. Definition of demonstrative evidence, and of logical necessit	ty	287
	• • • • • • • • • • • • • • • • • • • •	•	1000 C

BOOK III.

OF INDUCTION.

CHAPTER I. Preliminary Observations on Induction in general.

§	1.	Importance of an Inductive Logic	•	291
		The logic of science is also that of business and life	•	292

CHAPTER II. Of Inductions improperly so called.

§	1.	Inductions distinguished from verbal transformations	•	297
•	2.	- from inductions, falsely so called, in mathematics	•	298
	3.	- and from descriptions		300
	4.	Examination of Dr. Whewell's theory of induction	•	303
	5.	Further illustration of the preceding remarks .	•	312

CHAPTER III. On the Ground of Induction.

	Axiom of							101	316
 2.	Not true i	n every	sense.	Inducti	ion per en	numero	ntionem s	sim-	
	plicem	•				•	•	•	320
3.	The quest	ion of :	Inducti	ve Logi	c stated	•	•	•	323

CHAPTER IV. Of Laws of Nature.

		• •	PAGE
_	_		PAGE
ŝ	1.	The general regularity in nature is a tissue of partial re-	
		gularities, called laws	325
	2.	Scientific induction must be grounded on previous spon-	
		taneous inductions	329
	0		331
	3.	Are there any inductions fitted to be a test of all others? .	001
		۰	
		CHAPTER V. Of the Law of Universal Causation.	
8	1	The universal law of successive phenomena is the Law of	
3	1,	Causation	334
	•		00%
	Ζ.	- i. e. the law that every consequent has an invariable an-	005
		tecedent "	337
	3.	The cause of a phenomenon is the assemblage of its con-	
		ditions	339
	4.	The distinction of agent and patient illusory	347
		The cause is not the invariable antecedent, but the uncon-	
	•••	ditional invariable antecedent	350
	~		
		Can a cause be simultaneous with its effect?	353
	7.	Idea of a Permanent Cause, or original natural agent .	355
	8.	Uniformities of coexistence between effects of different per-	
		manent causes, are not laws	359
	9.	Doctrine that volition is an efficient cause, examined .	360

CHAPTER VI. Of the Composition of Causes.

§	1.	Two modes of the c	-	t actio	on of causes	s, th	e mechani	ical	
		and the chemical	•	•	•	•	•	•	373
	2.	The composition of	causes	the g	eneral rule); t	he other c	ase	
		exceptional	•		•	•	•	•	376
	3.	Are effects proport	ional to	o thei	r causes ?	•	•		380

CHAPTER VII. Of Observation and Experiment.

§	1.	The first step of inductive inquiry is a mental an	alysis (of	
-		complex phenomena into their elements .	•		382
	2.	The next is an actual separation of those elements	k		384
	3.	Advantages of experiment over observation			385
	4.	Advantages of observation over experiment	•		388

CHAPTER VIII. Of the Four Methods of Experimental Inquiry.

							PAGE	
§ 1.	Method of Agreement		•				393	
2.	Method of Difference	•	•		•	•	396	
3.	Mutual relation of these t	wo me	ethods				398	
4.	Joint Method of Agreeme	ent and	1 Differ	ence			401	
5.	Method of Residues	•	•	•			404	
6.	Method of Concomitant V	ariati	ons	•			406	
7.	Limitations of this last me	ethod					412	
6.	Method of Concomitant V		ons		•			

CHAPTER IX. Miscellaneous Examples of the Four Methods.

§ 1. Liebig's theory of metallic poisons			417
2. Theory of induced electricity .	•		421
3. Dr. Wells' theory of dew	•	•	425
4. Examples of the Method of Residues		•	433

CHAPTER X. Of Plurality of Causes; and of the Intermixture of Effects.

§	1.	One effect may have several causes	•	441
_	2.	- which is the source of a characteristic imperfection of	of	
		the Method of Agreement	•	442
	3.	Plurality of Causes, how ascertained	•	446
	4.	Concurrence of causes which do not compound their effect	8	448
	5.	Difficulties of the investigation, when causes compoun their effects	d	452
	6	Three modes of investigating the laws of complex effects	•	402 456
			•	400
	7.	The method of simple observation inapplicable .	•	458
	8.	The purely experimental method inapplicable		459

CHAPTER XI. Of the Deductive Method.

§	1.	First stage; ascertainment	of t	he la	ws of t	the se	parate	
-		causes by direct induction					•	464
	2.	Second stage; ratiocination	from	the	simple	laws	to the	
		complex cases		•	•	•		469
	3.	Third stage; verification by	spec	ific ex	perienc	е.		471

XV

.

.

CHAPTER XII. Of the Explanation of Laws of Nature.

				PAGE
§	1.	Explanation defined		. 476
-	2.	First mode of explanation, by resolving the law of	of a com	l-
		plex effect into the laws of the concurrent causes	and th	e
		fact of their coexistence		. 476
	3.	Second mode; by the detection of an intermediat	te link i	n
		the sequence		. 477
	4.	Laws are always resolved into laws more gene	ral that	n
		themselves	•	. 478
	5.	Third mode; the subsumption of less general laws	under a	9.
		more general one	•	. 482
	6.	What the explanation of a law of nature amounts	to	. 484

CHAPTER XIII. Miscellaneous Examples of the Explanation of Lans of Nature.

§	1. Liebig's theory of the contagiousness of chemical action .						
	2. His theory of respiration	. 491	l				
	3. Other chemical speculations	. 494	4				
	4. Examples of following newly-discovered laws into	their					
	complex manifestations	. 498	5				
	5. Examples of empirical generalizations, afterward	s con-					
	firmed and explained deductively	. 497	7				
	6. Example from mental science	. 499)				
	7. Tendency of all the sciences to become deductive .	. 500)				