## TABLE OF CONTENTS

				page			
Í.	OBSERVATIONS AND THEORIES						
	A. Introduction						
	в.	Ar	istotle's Teleology	. 3			
		1.	Function and health	4			
		2.	The Logical Priority of Pointedness	7			
		3.	The Analogy of Art and Nature	11			
	c.	Ari	stotle's Explanatory Modes and Concepts	14			
		1.	Function and Genesis	14			
		a)	Being and Function	14			
		b)	Genesis and genetic analysis	15			
		2.	Explanation	16			
		3.	Dynamis and the causes	18			
	D.	The	History of Animals and Aristotle's Sources	21			
		1.	Written sources	23			
		2.	The oral tradition	36			
		3.	Aristotle's own observations	40			
	E.	On t	the Chronology of the Biological Books	43			
II	. so		CE AND PHILOSOPHY IN ARISTOTLE'S				
			ation of Animals	48			
	А.	Male	e and Female, Form and Matter: Book I	52			
		1.	The refutation of "pangenesis" and preformationism: the male principle as "organizer" (I.17, 721b6-18, 724a13)	52			
		2.	The nature of the spermatic secretions, sperma	54			
		з.	How mense serves as matter for generation.	55			
		4.	How the male contributes to generation; the carpenter analogy	57			
		5.	The accomplishment of GA I	62			

v

В	. The	Problem of the Transfer of Soul	64		
	(GA II.1-3)				
	1.	The purpose of sexual generation (II.1, 731b18-732a25)	64		
	2.	The statement of the problem of semen (733b23ff)	66		
	3.	Toward solution: two analogies and po- tentiality/actuality (734b5ff)	69		
	4.	Semen and the distinction between energeia and entelecheia (734b21ff)	71		
	5.	Does semen have soul? (735a5-26)	73		
	6.	Semen as phenomenon (II.2, 735a30-736a24)	76		
	7.	The extended analysis of semen and soul (II.3, 736a24-737a34)	76		
		a) What happens to semen?	77		
		b) Energeia in II.3	78		
		c) "Nous thyrathen"	83		
		d) Pneuma and the bodily powers of the soul (II.3, 736b22ff)	86		
		e) Pneuma and aither (736b30-737a8)	86		
	8.	The accomplishment of II.1-3	89		
С	<ul> <li>C. Genesis and Energeia</li> <li>1. Summary of the explanation of animal generation (II.4, 740b13ff)</li> </ul>				
	2. Matter in generation				
	3.	The source of Movement	98		
	4.	Energeia and movement, form, and end	99		
	5.	The explanation of resemblance between parents and offspring (GA IV)	101		
Conclusions: Teleology in Aristotle's 10 Explanation of Generation					
III. UNDERSTANDING THE ORGANIC PARTS					
Introduction					
	The	e principles of explanation	109		
A	. Dev	elopment and Function of the Parts	112		

		1.	The beginning of embryological development: <i>pneuma</i> and the heart	1 <b>1</b> 3		
		2.	Matter and movement in embryological development	118		
		3.	Examples of the explanation of the parts	120		
			a) The brain (a 'uniform' part): development and function	120		
			b) The viscera: uniform/non-uniform	126		
			c) The non-uniform parts	133		
			i) The organs of locomotion	133		
			<li>ii) The organs of perception, especially the eyes</li>	143		
		Sur	mmary of Part A	148		
	в.		iations among Related Parts in Different	149		
		-	cies			
			Variations in eyes	150 159		
	<ol> <li>Variations in ears, and a 'deformed dualizer', the seal</li> </ol>					
		3.	Variations in tongues	162		
			a) Tongues for speech	162		
			b) Various tongues of the vivipara	164		
			c) The tongue in birds	165		
			<ul> <li>d) The tongue in land ovipara, frogs, and crocodiles</li> </ul>	166		
			e) The tongue in fish	171		
			f) 'Tongues' and related organs in bloodless animals	172		
			mmary of Part B: Aristotle's account of riations in the parts of animals	180		
IV.	NI	ECES	SITY AND PURPOSE IN THE EXPLANATION	183		
	OI	NAT	TURE			
	Ir	ntrod	duction	183		
	Α.	Ari	istotle's Natural Necessity	185		
		1.	The theoretical problem	185		
		2.	Conditional necessity and PA I.1	192		
		3.	'Accidentally necessary' and monsters	200		

VII

	<ol> <li>Aristotle's supposed mechanism, a conclusion</li> </ol>	205		
	<ol> <li>Formal necessity in nature: structure and species</li> </ol>	209		
	a) "ho logos tes ousias"	210		
	b) Dualizing and the Scale of Nature	213		
	c) The principle of natural directions	218		
	6. Summary of Part A	221		
в.	"Nature uses"			
	1. A philological introduction			
	2. 'Nature uses'	225		
	3. Katachresis	226		
	4. Parachresis	233		
	5. Parakatachresis	234		
	6. What nature does: general principles	235		
	7. "Nature" and the personal verb	238		
	8. The arts to which nature is compared	240		
	a) Analogies of the graphic arts	240		
	b) Analogies of the plastic arts: working in clay	241		
	c) Analogies of the plastic arts: working in metal	242		
	d) The tekton and the oikodomos	242		
	e) Nature as doctor and teacher	243		
	9. Nature: a conclusion	245		
	General conclusion	249		
NOTES	Chapter I			
	Chapter II	284		
	Chapter III			
	Chapter IV	314		
	General Conclusion	333		
BIBLIO	GRAPHY			

Α.	Texts and	translations	of	•	
	Aristotle	's works			334

.

## VIII

в.	Works	consulted,	other	than	those	:	339
	by Art	istotle					

## INDICES

Index	I:	Concepts	366
Index	II:	Proper Names	384
Index	III:	Passages in Aristotle	391