

TABLE OF CONTENTS

INTRODUCTION	5
 CHAPTER 1: VITALISM IN HISTORY	
What is "vitalism"?	9
A history of vitalism	15
 CHAPTER 2: BUILDING A NATION	
"Why Germany was not England?"	35
Building a nation: identity and science	40
Romantic science and <i>Naturphilosophie</i>	42
<i>Bildung</i> : a new map	50
Building a nation and personal <i>Bildung</i>	54
The institutions of <i>Bildung-Bildungsbürgerstum</i>	60
Germany, 1800-1900	62
 CHAPTER 3: THE RISE AND HEYDAY OF THE THEORY OF THE VITAL FORCE	
Physiology: the science of living matter	64
The vital force enters the 19 th century	78
Johannes Müller: the reformer of physiology	80
 CHAPTER 4: THE PHYSICS OF LIFE	
"On the Vital Force"	92
Physiologists and physicists	97
"Magnus' House"	101
Organic physicists	105

"Five 'Ds' in a line": curves and functions	106
"The 1847 Group"	111
Helmholtz and Ludwig	115
Diffusion of the program	122

CHAPTER 5: MATHEMATICS *AB OVO*

Driesch and developmental mechanics	126
Origins of <i>Entwicklungsmechanik</i>	128
1890, the "critical year"	134
Developmental "mechanics"	140
Experimental embryology and institutions: the Zoological Station at Naples	142

CHAPTER 6: TO BE OR NOT TO BE... A VITALIST, THAT IS THE QUESTION!

The Academy of Sciences of Berlin	155
A session at the Academy	158
Mechanics versus experiment	166
The basic sciences are three	170
Settling the bill	176
"With sullen expression and raising the finger"	178
Let me a few words to explain...	183

CONCLUSIONS

Epilogue	190
Dilemmas	196

REFERENCES	203
-------------------	-----