TABLE OF CONTENTS

ı.	Int	roduction	1
II.	The	Spaces of Configurations	7
	1.	The Spaces of Classical Configurations for a Rod	7
	2.	The Spaces of Infinitesimal Displacements	13
	3.	The Manifolds of Generalized and Constrained	
		Configurations	24
III.	The	Spaces of Loads	32
	1.	Loads in the Special Cosserat Theory	32
	2.	The Space of Loads for the Kirchhoff Theory	52
	3.	The Co-Adjoint Group Action on the Space of Loads	58
	4.	The Generalization of the Load Spaces	62
IV.	The	Rod Equilibrium Problem	66
	1.	The Variational Functions	66
	2.	The Euler Field for the Kirchhoff Problem	72
	3.	The Constrained Equilibrium Problem	76
	4.	The Bifurcation Problem for the Kirchhoff Rod	82
v.	The	Reduction of the Bifurcation Problem	90
	1.	The Decomposition of the Spaces	90
	2.	The Liapunov-Schmidt Reduction	101
VI.	The	Analysis of the Reduced Problem	117
	1.	The Symmetrically Perturbed Problem	117
	2.	The Critical Manifolds for the	
		Symmetry-Breaking Loads	120
	3.	The Classification of the Critical Manifolds	125

ATT .	The Results of the Bifurcation Problem	140
	 The Reduction of f and its Analysis 	140
	2. Perturbations of Class α	144
	3. Nondegenerate Perturbations of Classes β and γ	149
VIII.	Conclusions and Additional Problems	163
	References	167

172

Index