## Table of Contents

Chapter 0. Review of the deformation theory of compact complex

	<u>manifolds</u>	
§0.1.	Families of compact complex manifolds.	1
<b>§</b> 0.2.	Families of submanifolds and holomorphic maps.	13
Chapter 1.	Structure of Hol(V, P <sup>1</sup> )	
§1.1.	Preliminary remarks on $Hol(V, \mathbb{P}^1)$ .	21
§1.2.	Construction of $R_n(V)/\mathbb{C}^*$ .	28
<b>§1.3.</b>	Structure of $R_n(V)/Aut(\mathbb{P}^1)$ .	37
§1.4.	Families of elliptic functions.	49
Chapter 2.	$R_n(V)$ for $n \leq g$	
<b>§</b> 2.1.	$R_{n}(V)$ for $n \leq g$ .	58
<b>§</b> 2.2.	An example of $R_{n}^{}(V)$ with singular points.	65
<b>§</b> 2.3.	A theorem on non-singular plane curves.	73
<b>§</b> 2.4.	A theorem on the non-existence of functions.	83
<b>§</b> 2.5.	Remarks on projections of canonical curves.	90
<b>§</b> 2.6.	The case of genus 5.	113
Chapter 3.	Families of holomorphic maps of compact complex manifolds	
<b>§3.0.</b>	Banach spaces $C^p(F, \cdot )$ .	124
<b>§3.1.</b>	Some lemmas.	128
<b>§3.2.</b>	Relative Douady space of holomorphic maps.	134
§3.3.	Non-singularity of the space R <sub>n</sub> .	147
<b>§</b> 3.4.	Moduli of open holomorphic maps.	151
<b>§</b> 3.5.	Two examples of Hol(V,V)	163

3.6.	Deformation theory of holomorphic maps.	175
Chapter 4.	Families of effective divisors and linear systems	
	on projective manifolds	
4.1.	Linear fiber space of global sections.	191
4.2.	$\mathbb{D}_{c}(V)$ and the Jacobi map.	203
4.3.	Semi-regularity theorem for linear systems.	210
4.4.	Moduli of non-degenerate holomorphic maps into $p^r$ .	218
Chapter 5.	Families of linear systems on compact Riemann surfaces	
5.1.	$G_n^r$ (V) for a compact Riemann surface V.	226
	The space $G_n^r$ and weak semi-regularity.	247
5.3.	$\pi\left(G_{n}^{r}\right)$ .	263
Bibliography		277
Index		282