

# Table of Contents

<b>Preface</b> (by <i>Egbert Brieskorn</i> ) . . . . .	V
<b>Introduction</b> . . . . .	IX
<b>Chapter 1: Some Representations of the Real Projective Plane before 1900</b> . . . . .	1
1.1 Closed Surfaces . . . . .	1
1.2 The Real Projective Plane . . . . .	13
1.3 Steiner Surfaces . . . . .	31
<b>Chapter 2: The Boy Surface</b> . . . . .	42
2.1 Embedded and Immersed Surfaces . . . . .	42
2.2 Parametrization of the Boy Surface by Three Polynomials . . . . .	51
2.3 How to Eliminate Whitney Umbrellas . . . . .	61
2.4 A Boy Surface of Degree Six . . . . .	74
<b>Chapter 3: More about Immersions in the 3-dimensional Sphere</b> . . . . .	82
3.1 Self-Transversal Immersions of the Real Projective Plane . . . . .	82
3.2 Classification of Immersed Projective Planes of Boy Type . . . . .	90
3.3 The Halfway Model . . . . .	103
<b>Appendix:</b> Listing of the FORTRAN Program Used to Draw the Boy Surface and its Deformations (by <i>Raymond Ripp</i> ) . . . . .	107
<b>Bibliography</b> . . . . .	116
<b>Subject Index</b> . . . . .	119
<b>Plate Index</b> . . . . .	121
<b>Plates</b> . . . . .	123