

## CONTENTS

	<u>Page</u>
<u>Chapter I : INTRODUCTION</u>	1
General	1
Brief Geography and Geology of Kutch	2
Scope of the present investigation	12
<u>Chapter II : PREVIOUS WORK</u>	18
Mesozoic rocks in general	19
The area in particular	28
<u>Chapter III : GEOLOGICAL SETTING</u>	34
A. <u>Areal distribution and field characters</u>	37
Rock formations to the north of Katrol fault	37
Umia Series	37
Bhuj Series	40
Katrol Fault	46
Rock formations to the south of Katrol fault	47
Chari Series	48
Katrol Series	57
Umia Series	70
Bhuj Series	72
Deccan Trap	74
Supra-Trappean beds	74
Sub-Recent deposits	75

<b>B. Sedimentary structures</b>	<b>75</b>
Chari and Katrol Series	80
Umia and Bhuj Series	82
<b>Chapter IV : PRINCIPLES TECHNIQUES AND METHODS OF STUDY</b>	<b>85</b>
Collection of samples	86
Methods of analysis	88
1. Heavy mineral analysis	89
2. Grain-size analysis	91
Sieve analysis	92
Pipette analysis	94
Graphic presentation of size analysis data	97
(i) Histogram	98
(ii) Cumulative curve	99
Statistical parameters	101
Graphic Mean	104
Inclusive Graphic Standard Deviation	104
Inclusive Graphic Skewness	105
Graphic Kurtosis	106
Inter-relation of the parameters	108
CM Patterns	108

3. Shape analysis	109
Roundness	110
Sphericity	111
4. Clay mineral determination	112
5. Microscopic study	114
Study of heavy and light minerals	114
Study of thin sections	115
<u>Chapter V : PETROGRAPHY</u>	116
Chari Series	117
Katrol Series	126
Umia Series	137
Bhuj Series	144
Supra-Trappeans	150
Sub-Recent oolitic limestones	151
<u>Chapter VI : SEDIMENTATION</u>	153
<u>Chari Series</u>	155
Sedimentary environments	155
Processes of transportation	160
Source rocks	160
Tectonic setting	161

<u>Katrol Series</u>	162
Sedimentary environments	162
Processes of transportation	171
Source rocks	172
Tectonic setting	173
<u>Umia Series</u>	174
Sedimentary environments	174
Processes of transportation	177
Source rocks	178
Tectonic setting	179
<u>Bhuj Series</u>	180
Sedimentary environments	180
Processes of transportation	183
Source rocks	184
Tectonic setting	184
<u>Supra-Trappeans</u>	185
<u>Sub-Recent deposits</u>	186
<u>Stratigraphic succession</u>	188
<u>Chapter VII : STRUCTURAL GEOLOGY</u>	191
Domes and flexures	192
Faults	196
Katrol Fault	196
Transverse faults	197
Discussion	200

<u>Chapter VIII : SUMMARY AND CONCLUSIONS</u>	206
Stratigraphy	207
Depositional history in brief	208
Structural evolution	212
Concluding remarks	214
ACKNOWLEDGEMENTS	215
REFERENCES	217
 <u>APPENDICES</u>	
<u>Appendix I : BASIC ROCKS AND FLOWS</u>	228
<u>Appendix II : FOSSILS</u>	231
<u>Appendix III : INTERPRETATION OF                   HISTOGRAMS</u>	235
<u>Appendix IV : STATISTICAL PARAMETERS</u>	238
<u>Appendix V : VALUES OF C AND M                   FOR CM PATTERNS</u>	257
<u>Appendix VI : ROUNDNESS AND SPHERICITY</u>	260

---