

## List of Figures

Figure No.	Title	Page No.
Fig. 1.1	Unfolded tetrahedra of Mount's classification of mixed siliciclastic-carbonate rocks with the classification of pure limestone by Folk, (1962) plotted.	3
Fig. 1.2	Family tree of sequence stratigraphy (Catuneanu et al., 2017).	9
Fig. 1.3	Different types of sequence along with the associated systems tract and sequence boundaries (Catuneanu et al., 2011).	11
Fig. 1.4	Location and general geological map of the Kachchh.	20
Fig. 4.1	Composite litholog of Khadir Island showing the representative lithofacies	52
Fig. 4.2	Composite lithology of Bela Island showing the representative lithofacies	64
Fig. 4.3	Composite lithology of Chorar Island showing the representative lithofacies.	72
Fig. 5.1	Stratinomic classification of trace fossils (Seilacher, 1964; Martinsson, 1970)	85
Fig. 6.1	Diagrammatic representation of <i>Diplocraterion</i> assemblage. 1. <i>Diplocraterion</i> , 2. <i>Skolithos</i> 3. <i>Arenicolites</i> 4. <i>Rhizocorallium</i> .	147
Fig. 6.2	Diagrammatic representation of <i>Skolithos</i> assemblage. 1. <i>Skolithos</i> , 2. <i>Arenicolites</i>	148
Fig. 6.3	Diagrammatic representation of <i>Lockeia</i> assemblage. 1. <i>Lockeia</i> , 2. <i>Planolites</i> , and 3. <i>Rhizocorallium</i> .	149
Fig. 6.4	Diagrammatic representation of <i>Planolites-Palaeophycus</i> assemblage.1. <i>Palaeophycus</i> 2. <i>Planolites</i> 3. <i>Arenicolites</i> , 4. <i>Skolithos</i> , 5. <i>Ophiomorpha</i> 6. <i>Curvolithus</i> 7. <i>Chondrites</i> , 8. <i>Thalassinoides</i> and 9. <i>Lockeia</i> .	151
Fig. 6.5	Diagrammatic representation of <i>Rhizocorallium</i> assemblage. 1. <i>Rhizocorallium</i> , 2. <i>Diplocraterion</i> , 3. <i>Arenicolites</i> , 4. <i>Monocraterion</i> , 5. <i>Ophiomorpha</i> , 6. <i>Taenidium</i> , 7. <i>Phycodes</i> , 8. <i>Skolithos</i> 9. <i>Thalassinoides</i> . 10. <i>Planolites</i> , and 11. <i>Laevicyclus</i> .	153
Fig. 6.6	Diagrammatic representation of <i>Protovirgularia</i> assemblage. 1. <i>Protovirgularia</i> , 2. <i>Didymaulichnus</i> , 3. <i>Curvolithus</i> , 4. <i>Taenidium</i> , 5. <i>Diplocraterion</i> , 6. <i>Palaeophycus</i> , 7. <i>Planolites</i> , 8. <i>Gyrochorte</i> .	155

Fig. 6.7	Diagrammatic representation of <i>Hillichnus</i> assemblage. 1. <i>Hillichnus</i> , 2. <i>Arenicolites</i> , 3. <i>Diplocraterion</i> , 4. <i>Chondrites</i> , 5. <i>Skolithos</i> , 6. <i>Laevicyclus</i> , 7. <i>Thalassinoides</i> 8. <i>Taenidium</i> , 9. <i>Planolites</i> . 10. <i>Ophiomorpha</i> , 11. <i>Monocraterion</i> .	156
Fig. 6.8	Diagrammatic representation of <i>Monocraterion</i> ichnoassemblage. 1. <i>Monocraterion</i> , 2. <i>Diplocraterion</i> , 3. <i>Arenicolites</i> , 4. <i>Helicolithus</i> , 5. <i>Lockeia</i> , 6. <i>Planolites</i> , 7. <i>Protovirgularia</i> , 8. <i>Palaeophycus</i> , 9. <i>Thalassinoides</i> .	159
Fig. 6.9	Diagrammatic representation of <i>Hillichnus</i> assemblage. 1. <i>Hillichnus</i> 2. <i>Arenicolites</i> , 3. <i>Diplocraterion</i> , 4. <i>Rhizocorallium</i> , 5. <i>Skolithos</i> , 6. <i>Planolites</i> , 7. <i>Palaeophycus</i> , 8. <i>Protovirgularia</i> , 9. <i>Didymaulichnus</i> , 10. <i>Taenidium</i> , 11. <i>Phycodes</i> .	160
Fig. 6.10	Diagrammatic representation <i>Thalassinoides</i> assemblage. 1. <i>Thalassinoides</i>	161
Fig. 6.11	Diagrammatic representation of <i>Hillichnus</i> assemblage. 1. <i>Hillichnus</i> 2. <i>Protovirgularia</i> .	162
Fig. 6.12	Diagrammatic representation of <i>Rhizocorallium</i> assemblage. 1. <i>Rhizocorallium</i> , 2. <i>Asterosoma</i> , 3. <i>Arenicolites</i> , 4. <i>Curvolithus</i> , 5. <i>Didymaulichnus</i> , 6. <i>Gyrochorte</i> 7. <i>Lockeia</i> .	163
Fig. 6.13	Diagrammatic representation of <i>Gyrochorte</i> assemblage. 1. <i>Gyrochorte</i> , 2. <i>Arenicolites</i> , 3. <i>Megagrapton</i> , 4. <i>Palaeophycus</i> .	165
Fig. 6.14	Diagrammatic representation of <i>Thalassinoides</i> assemblage. 1. <i>Thalassinoides</i> , 2. <i>Halopoa</i> , 3. <i>Palaeophycus</i> .	166
Fig. 6.15	Diagrammatic representation of <i>Skolithos</i> assemblage. 1. <i>Skolithos</i> , 2. <i>Planolites</i> , 3. <i>Thalassinoides</i> , 4. <i>Arenicolites</i> , 5. <i>Diplocraterion</i> , 6. <i>Palaeophycus</i> .	165
Fig. 6.16	Environmental distribution of trace fossils of Khadir, Bela and Chorar Islands. Upper-middle shoreface and lower shoreface-prodelta environment shows the either trace fossils of <i>Skolithos</i> , <i>Cruziana</i> Ichnofacies as well as mixed <i>Skolithos-Cruziana</i> Ichnofacies. 1. <i>Asterosoma</i> , 2. <i>Curvolithus</i> , 3. <i>Didymaulichnus</i> , 4. <i>Gyrochorte</i> , 5. <i>Halopoa</i> , 6. <i>Helicolithus</i> , 7. <i>Laevicyclus</i> , 8. <i>Megagrapton</i> , 9. <i>Palaeophycus</i> , 10. <i>Phycodes</i> , 11. <i>Planolites</i> , 12. <i>Protovirgularia</i> , 13. <i>Rhizocorallium</i> , 14. <i>Taenidium</i> , 15. <i>Arenicolites</i> , 16. <i>Chondrites</i> , 17. <i>Diplocraterion</i> , 18. <i>Lockeia</i> , 19. <i>Monocraterion</i> , 20. <i>Skolithos</i> , 21. <i>Hillichnus</i> , 22. <i>Ophiomorpha</i> , 23. <i>Thalassinoides</i>	171
Fig. 7.1	The composite litholog of the Khadir Island showing the distributions of lithofacies, trace fossils, stacking pattern of the sequence and comparison with the global eustatic sea-level curves	179

Fig. 7.2	The composite litholog of the Bela Island showing the distributions of lithofacies, trace fossils, stacking pattern of the sequence and comparison with the global eustatic sea-level curves.	182
Fig. 7.3	The composite litholog of the Chorar Island showing the distributions of the lithofacies, trace fossils and stacking pattern of the sequence are compared with global eustatic sea-level curves.	186
Fig. 7.4	Litholog of Khadir, Bela and Chorar Island show the developed and exposed sequence of the Jurassic which are correlated amongst each other depicting the condense stratigraphic units.	188
Fig. 8.1	A depositional model of fan delta complex – a representative of Cheriya Bet Conglomerate during Aalenian? -Bajocian age.	194
Fig. 8.2	A depositional model of a delta system- a representative of Hadibhadang Shale and Hadibhadang Sandstone members during Bajocian-Bathonian age	195
Fig. 8.3	A depositional model of clastic shoreline environments- a representative of Hadibhadang Shale, Hadibhadang Sandstone and Ratanpur Sandstone members of Chorar Island, and Ratanpur Sandstone and Bambhanka members of Khadir Island and Ratanpur Sandstone Member of Bela Island.	197
Fig. 8.4	The sequence stratigraphic model for shoreline trajectories of Khadir, Bela and Chorar Islands	199