

# Index

Note: reference to Figures and Tables are in *italics*.

- Abe Gerfan Block 83–4
- Abe Shaar Block 83
- Abu Zenima Red Beds 80
- accommodation zones 119
  - effect of inherited structure on 129
  - effect of volcanism on 129–30
  - influence on sedimentation 122–9
  - modes of occurrence 121–2
  - timing of evolution 138, 139
  - see also* transfer zones
- Adigrat Sandstone 307
- Albert, Lake 122, 216
- algal amorphous facies
  - source rock 347–8
  - species analysis 251
- alginite 347, 352
- Aman Graben 335, 336, 338, 344, 347, 348
- Anza Rift (Kenya) 119, 139
- Aquitaine Basin 215
- Arak Field 365
- Ardjuna Basin 242
- Arecipites* sp. 248
- Argo Formation 149
- Asprokambos Intrabasin Transfer Zone 65–7
- Avalon Formation 149, 150
  
- B** Marker Formation 149, 150
- back arc stretching 166
- Baffin East Basin 215
- Balam SE Field 363–4
- Bandar Jaya Basin 243–5
  - characteristics 275
  - source geochemistry 249–51, 277
  - stratigraphy 245–9
- Bangko Field 364
- Bangko Formation 339
- Banquereau Formation 149
- Barents Basin 215
- Baringo half-graben 122
- Barito Basin 242
- Basal Clastic Formation 199
- basement
  - effect on accommodation zones 129
  - faults and extension 33, 38
- basin features
  - floor factors
    - effect on sedimentation of 133–6
    - timing of evolution 138
  - geometry and organic matter
    - preservation 220
    - production 219
  - inversion effects 23–6, 27
- Basin and Range Province 17
  - accommodation zones 121
  - role in modelling 51–2
  - structure 118–19
- Bass Basin 215
  
- Bekasap Formation 339, 361
  - porosity 341
- Belayim Formation 80, 85
- Ben Nevis Formation 149, 150
- Beryl Embayment 109
- beta factor profile 47, 48, 51
- biomarker analysis
  - Central Sumatra oils 350
  - Kampar Kanan Basin oils 258
  - Lahat Formation 251
  - Yuan Jiang Formation 273
- bioturbation
  - Jeanne d'Arc Basin 154
  - role in organic matter preservation 221
- Black Sea 218
- block terminations 15–16
- Bohai Basin 215
- Bokh Shale 307
- Bonaparte Gulf 215
- Botryococcus* 251, 256, 263, 347
- Bouguer anomalies on fault segments 59
- Bowen Basin 215
- Brage Field 109
- Brown Limestone 80
- Brown Shale Formation 335, 336, 346, 347, 352, 353, 354
- Browse Basin 215
  
- <sup>13</sup>C in Central Sumatra oils 347, 350
- Cabinda Basin 215
- calcite cement and fault history 63–4, 66–7, 69
- California, Gulf of 215, 218, 219, 230–1
  - hydrocarbon geochemistry 231–2
  - source rocks 231
- Calub Sandstone 307
- Cambay Basin 215
- Campos Basin 215
- Candi Field 366
- Canning Basin 215
- Canterbury Basin 215
- carbonaceous facies 348–9
- carbonates and fault history 63–4, 66–7, 69
- Cardita Formation 200, 206
- Carnarvon Basin 215
- Catalina Formation 149, 150
- Cauvery Basin 215
- Ceara Basin 215
- Celtic Basin 215
- Central Graben faults 12
- Central Sumatra Basin 215, 221, 331–3
  - depositional history 344–6
  - geological history 333–4
  - history of research 241
  - hydrocarbons 213, 214–15
    - geochemistry 223–5, 347–51
    - maturity 351–4
  - migration models 355–7

- oil composition 349–51
- play types 368
- reservoir properties 341
- sources 216, 221–3
- traps 357–66
- stratigraphy 274, 276, 334–41
  - Pematang Group 336–7
  - Sihapas Group 338–41
- structural history 341–4
- Chad Basin 215
- Chang Tao Graben 268
- China *see* Dongting Basin; Songliao Basin
- Chiwondo Formation 134
- Chuyi Basin 215
- Clair Field 110
- climate
  - controls on rift sedimentation 117
  - effect of rift topography 131–3
  - role in hydrocarbon generation 217, 218
- Coal Zone Formation 335, 336, 346, 347, 348–9, 354
- Colorado Basin 215
- conjugate transfer zone 13, 14
- continental extension
  - flexural cantilever model 38, 39, 52–3
    - forward and reverse compared 48–51
    - post-rift basin 44–5
    - reverse modelling 45–8
    - syn-rift basin 39–44
  - McKenzie model 33–7, 51
  - Wernicke model 37, 51–2
- continuous folding 15, 16
- convergent transfer zone 13
- Corinth, Isthmus of 177–8
- Corinth, Gulf of 60
  - segmented fault study *see* South Alkyonides Fault Segment
- Cretaceous studies 270
  - see also* South Gabon Basin
- cross strike faults 15, 16
- crustal extension models 17
- crustal thinning, effects of 33
- Cuanza Basin 215
- Culpeper Basin 216
- Cumberland Basin 215
- cutinite 310
- Dampier Basin 215
- Dandaragon Basin 215
- Dawson Canyon Formation 149, 150
- deltas *see* fan deltas; lake deltas
- Denglouku Formation 317
- diagenesis, role in fault history of 63–4, 66–7, 69
- divergent transfer zone 13
- Dniepr–Donetz Basin 215
- dolomite cement and fault history 63–4, 66–7, 69
- doming, relation to rift evolution of 119
- domino block model 166
- Dongting Basin 268, 273
  - characteristics 275
  - source geochemistry 270–3, 277
  - stratigraphy 268–70, 274, 276
- Downing Formation 149
- drainage, use in rift structural analysis of 167–71
- Duntroon Basin 215
- Duri Field 331
- Duri Formation 339
  - porosity 341
- earthquakes
  - effect on fault displacement 2
  - segments defined 58–9
- East African basins *see* intracratonic; pericratonic
- East African Rift 7, 139, 166, 220
  - basins *see* intracratonic rifts; pericratonic rifts
  - earthquake foci 34
  - fault patterns 12
  - lakes 215
    - see also* Malawi, Lake
  - sedimentation controls 117, 122
  - volcanism in 130
- East Shetland Basin 111
- East Shetland Platform 109–10
- Easter Ross Peninsula 110
- Eastern Shoals Formation 149, 150, 158, 159
- Edward, Lake 216
- Egypt *see* Suez, Gulf of
- elastic dislocation theory 38
- Escarpment Grit 290
- Esh el Mellaha Block 82–3
- Esna Shale 80
- Espirito Santo Basin 215
- Ethiopian Rift 218
  - see also* Ogaden Rift
- Eucla Basin 215
- Eurydice Formation 149
- eustasy, effect on lithofacies of 145–6
- exinite 349, 352
- exsudatinitite 310
- extension models 17
- fabric
  - activation of 5–6
  - effect on fault of 6–9
- facies analysis 200–4, 337
- ichnofacies 154–5, 160
- lithofacies 145–6
  - organic facies 347–8
- fan deltas
  - footwall-derived 176
  - hanging wall-derived 176–7
  - Jeanne d'Arc Basin 152, 156–7
  - transfer zone sequences 177–8
- Fanglomerate Formation 335, 336, 337
- faults 119
  - angle effects 27
    - low angle detachment model 18–20, 21–3
    - role in rift evolution 20–1
    - significance of 16–18
  - orientation effect 6
  - segmentation
    - characterized 58–9
    - defined 58
    - subdivided 59
    - see also* South Alkyonides Fault Segment
- faunal assemblages, Qingshankou Formation 318, 323

- Fitzroy Basin 215  
flexural cantilever modelling 4, 38, 39, 43–4, 52–3  
  forward and reverse compared 48–51  
  post-rift basin 44–5  
  reverse modelling 45–8  
  syn-rift basin 39–40  
    central horst 41–3  
    full-graben 41  
    half-graben 40–1  
flexural margins  
  associated sedimentation 131  
  timing of evolution 139  
flexural-isostatic modelling 3–4, 39  
flowstone and fault history 64, 69  
fluvial patterns, use in rift structural analysis 167–71  
foliation, effect of 8, 9  
footwall uplift 38, 59, 166  
  diagenetic evidence 64  
  sedimentation patterns 131  
  timing 139  
Fortune Bay Formation 149, 150  
forward modelling, comparison with reverse modelling 48  
fragmentograms  
  Bandar Jaya Basin 250  
  Yuan Jiang Formation oils 272  
full-graben, flexural cantilever model 41  
Fundy Basin 216, 218  
Funhalouro Graben 307
- Gabon Basin 215  
  *see also* South Gabon Basin  
Galilee Basin 215  
Gamba Formation 200, 206  
gaps 10, 11  
gas chromatograms  
  Kampar Kanan oils 254  
  Phetchabun Basin oils 266  
  Sangkarewang oils 261–3  
  Songliao basin oil 227  
  Yuan Jiang Formation oils 271  
Gebel el Zeit Block 84–9  
geochemistry of rift hydrocarbons  
  California Gulf 232–3  
  Central Sumatra Basin 221–5, 347–51  
  Dongting Basin 270–3, 277  
  Lahat Formation 249–51  
  Ombilin Basin 260–3, 277  
  Pematang Formation 255–8  
  Phetchabun Basin 266–8, 277  
  Richmond Basin 232–3  
  Songliao Basin 225–7  
  Suez Gulf 227–30  
geothermal gradient, effect of 33  
Ghana Basin 215  
Gippsland Basin 215  
Gondwana breakup 305  
graben evolution, Central Sumatra Basin 343–4  
grain size and organic matter preservation 221  
Grand Banks 215  
gravity anomaly on fault segments 59  
gravity (API)  
  Central Sumatra oils 349  
  Songliao Basin oils 227
- Greece  
  fault segmentation study 60–3  
    Asprokambos Intrabasin Transfer Zone 65–7  
    Pisia Fault Zone 60, 63–5  
    Psatha Fault Zone 67–70  
    regional significance 70–2  
  reservoir geometry study  
    rift drainage 167–71  
    sequence architecture 175–8  
    sequence stratigraphy 172–5  
    structural setting 166–7  
    tectonic/eustatic interaction 178–9  
    transfer zones 171–2  
Greenland East Central Basin 215  
Gregory Rift 119  
  accommodation zones 121, 122  
  flexural margin 131  
  grid faulting 133  
  rift shoulders 131  
  rift-parallel fault blocks 134  
  transfer faults 134, 135  
grid faulting 133  
Gumburo Sandstone 307
- half-graben, flexural cantilever model 40–1  
Hamanlei Limestone 307  
Han Shou Formation 268  
hanging wall  
  elevation significance 59  
  subsidence 38  
Hartford Basin 138, 216  
heat flow studies 353–4  
Hebgen Lake 177  
Helgeland Basin 215  
Hibernia Formation 149, 150  
hopane distribution  
  Kampar Kanan Basin oils 258  
  Lahat Formation 251  
Horda Platform 109  
horst, flexural cantilever model 41–3  
Huarong uplift 268  
humidity, effect of rift topography on 132–3  
hydrocarbons from rift sources  
  case studies  
    California Gulf 230–2  
    Central Sumatra 221–5  
    Richmond Basin 232–3  
    Songliao Basin 225–7  
    Suez Gulf 227–30  
  characteristics 213–14  
  global distribution 214  
  organic matter  
    disposition 216–17  
    preservation 220–1  
    productivity 218–19  
  source identification 215–16  
  tectonostratigraphic significance 217  
  timing of formation 217  
hydrogen index (HI)  
  Central Sumatra Basin oils 350  
  Lahat Formation 249

- Ruhuhu Basin 309  
Sangkarewang Formation 261
- ichnofacies, use in interpretation of 154–5, 160  
Idusi Formation 297, 309  
Indonesia *see* Bandar Jaya Basin; Central Sumatra Basin; Kampar Kanan Basin; Ombilin Basin  
inertinite 349  
intrabasin transfer zones 59  
  Asprokambos 65–7  
  Psatha 67–70  
intracratonic rifts  
  Luwegu Rift 303–4, 311, 312  
  Maniamba Rift 305, 312  
  Mikumi Rift 304, 311, 312  
  Ruhuhu Rift 297–301, 312  
  Rukwa Rift 302, 312  
  Songwe–Kiwira Rift 301–3, 309, 312  
  Zambezi Rift 304–5, 312  
inversion *see* basin inversion effects  
Iroquois Formation 149  
Isalo I Group 309  
isostatic responses 2, 119, 121
- Java Basins 242  
Jeanne d’Arc Basin 148–61  
  method of analysis 146–8  
  palaeogeographic reconstruction 158–61  
  stratigraphy  
    seismic data 152–3  
    well data 153–7  
  structure 150–1  
Jeanne d’Arc Formation 149  
Jiangnan Basin 215, 268  
Jones Lancaster Basin 215  
jumps 10, 11  
Jurassic studies 302, 307, 309, 312
- Kalimantan Basins 242  
Kampar Kanan Basin 251  
  characteristics 275  
  heat flow 353–4  
  source geochemistry 255–8, 277, 278  
  source rocks 351  
Kareem Formation 80, 85  
Karoo Rift Basins 285, 294, 297  
  basin inversion 292–3  
  hydrocarbon potential 293  
  rift timing 290–2  
  stratigraphy 286–90  
  structure 286, 288  
kerogen  
  Central Sumatra Basin oils 347  
  Kampar Kanan oils 255  
  Phetchabun Basin oils 266  
  Songliao Basin oils 319  
  Tanzania Basins 309–10  
Ketewaka Formation 305  
Kilulu Sandstone 307  
Kingori Sandstone 307  
Kiri Graben 335, 336, 338, 344, 347, 348  
Kissenda Formation 199, 200, 206  
Kivu Lake 216  
Kivu Rift 121  
Kiwira Rift 301–2, 312  
  evolution 302–3  
  source rocks 309  
Kota Masjid Graben 251  
Kremida Formation 176  
Kutei Basin 242  
Kuznets Basin 215
- Labrador Basin 215  
lacustrine rift basins 183  
  role in hydrocarbon generation 217–18  
  sediment analysis 197  
    depositional model 206–7  
    facies analysis 200–4  
    sand body orientation 204–5  
    sedimentary body architecture 207–8  
  *see also* lake  
lagoonal sediments, Jeanne d’Arc Basin 154, 159  
Lahat Formation 244  
  hydrocarbon geochemistry 249–51  
  stratigraphy 245–9  
lake delta studies  
  Ruhuhu Delta 183–5  
    hydrocarbon potential 191–3  
    methods 185  
    results 185–8  
    results discussed 188–91  
Lake Fill Formation 335, 336–7, 346  
Lake Superior Basin 215  
Lake Tanganyika Rift *see* Tanganyika Rift  
lakes *see* lacustrine rift basins  
lamalinite 310  
latitude and organic matter production 219  
Laura Basin 215  
Laurentian Formation 149  
Lipirichi Formation 305  
liptinite 310  
lithofacies, significance of 145–6  
lithosphere response modelling  
  flexural cantilever 38  
  McKenzie 33–7  
  Wernicke 37  
lithosphere strength 166  
Lokatong Formation 133  
Logipi, Lake 130, 135, 136  
Lokichar Basin 3, 8, 9  
Lower Red Beds Formation 335, 336  
Luangwa Valley 285, 294  
  basin inversion 292–3  
  evolution 290–2  
  hydrocarbon potential 293  
  stratigraphy 286–90  
  structure 286, 288  
Lucina Formation 198, 199, 200, 205–6  
Lucina Marine Fields 198  
  basin evolution 208  
  depositional model 206–7  
  exploration history 198  
  facies analysis 200–4  
  reservoir correlation 205–6

- sand body orientation 204–5  
 sedimentary body architecture 207–8  
 stratigraphy 199–200  
 structure 200  
 Lupa Fault 3, 8  
 Luwegu Rift 303–4, 311, 312  
 Lwumbu Formation 286
- maceral analysis  
   Lahat Formation 249–51  
   Phetchabun Basin oils 266  
   Yuan Jiang Formation 270  
 Mchuchuma Formation 297, 309–10  
 McKenzie model 33–7, 51  
 Madagascar *see* Morondava Rift  
 Madiela Formation 206  
 Madumabisa Mudstone 287, 305  
 Mae Ping Fault 263  
 Magadi, Lake 219  
 Mahato Mandian Graben, heat flow 353–4  
 Mahekou Arch 268  
 Majunga Basin 215  
 Malawi, Lake 124, 129, 131  
   delta sediment hydrocarbon potential 191–3  
   delta sediment seismic survey  
     methods 185  
     results 185–8  
     results discussed 188–91  
   geological setting 184–5  
   physical setting 183  
 Malawi Rift, accommodation zones 121  
 Malay Basin 215  
 Mandian Graben 335  
 Maniamba Rift 305, 312  
 Maryborough Basin 215  
 Matulla Formation 80, 85  
 maturity studies 351–4  
 Megara Basin 176  
 Mekong Basin 215  
 Melania Formation 198, 199–200, 206  
 Menggala Formation 338–9  
   porosity 341  
 Mercury Border Fault 148, 150  
 Midlands Basin 215  
 migration studies 355–7  
 Mikumi Rift 304, 311, 312  
 Minas Field 331, 358–61  
 Mkulazi Beds 306  
 modelling *see* flexural cantilever modelling *also* reverse  
   modelling  
 Mombasa Basin 217  
 Møre-Norland Basin 215  
 Morondava Rift Basin 215, 309, 311, 312  
 Mozambique Rift 307–9, 312  
 Mupinghu Arch 268  
 Murray Basin 215  
 Murre Border Fault 148, 150
- Namele-Muze Basin 309  
 Nandanga Formation 303  
 Natuna Basin 215  
 Nautilus Formation 149, 150  
 Negara Batin Graben 243  
   stratigraphy 245, 274, 275  
 Negara Ratu Graben 243–4  
 Nenjiang Formation 226, 317, 318, 319  
 New Haven Arkose 138  
 Newark Basin 130, 133–4, 138, 215, 216  
 Newfoundland *see* Jeanne d'Arc Basin  
 Ngerengere Beds 305  
 North Anatolian Fault 166  
 North Sea (North) 105  
   graben fault patterns 12  
   history of research 103–5  
   source rocks 215  
   tectonic elements  
     East Shetland Basin 111  
     East Shetland Platform 109–10  
     Horda Platform 109  
     South Viking Graben 105–9  
     Unst Basin 110–11  
 North Sumatra Basin 215  
 Northern Kenya Rift 4  
 Northwest German Basin 215  
 Ntawere Formation 290  
 Nubian Sandstone 80, 85  
 Nukhul Formation 80, 85, 134  
 nutrient loading, role in hydrocarbon formation 219  
 Nyasa, Lake *see* Malawi, Lake
- Officer Basin 215  
 offsets 10, 11  
 Ogaden Rift 307, 312  
 Ombilin Basin 258, 278  
   characteristics 275  
   source geochemistry 260–3, 277  
   stratigraphy 258–60, 274, 276  
 Orange River Basin 215  
 organic matter  
   preservation 220–1  
   productivity 218–19  
 Oseberg Field 109  
 Otway Basin 215  
 oxygen index (OI) 350  
 oxygen status and organic matter  
   preservation 220  
   production 218
- palaeogeography, Jeanne d'Arc Basin 158–61  
*Palmae* spores 248  
 palynomorphs, use in interpretation of 154  
 passive margin modelling *see* Suez, Gulf of  
 Pearl River Basin 215  
*Pediastrum* 251, 263, 347, 349  
 Pematang Field 365–6, 369  
 Pematang Formation 215, 221, 359, 361, 362–3, 364  
   hydrocarbon geochemistry 253–5  
   stratigraphy 251–3  
 Pematang Group 331  
   depositional model 344–6  
   facies analysis 337  
   reservoir properties 341  
   stratigraphy 336–7  
 Pentalian Graben 251

- Penyu Basin 215
- pericratonic rifts
- Morondava Rift 309, 311, 312
  - Mozambique Rift 307–9, 312
  - Ogaden Rift 307, 312
  - Ruvu Rift 306, 312
  - Ruvuma Rift 305–6
  - Tanga Rift 306–7
- permeability measurements 326, 341
- Permian studies 299, 300, 301, 302, 303, 304, 305
- see also* Karoo
- Perth Basin 215
- Petani Formation 341
- Petapahan Field 361–2
- Petrel Formation 149, 150
- Phetchabun Basin 263, 273, 278
- characteristics 275
  - source geochemistry 266–8, 277
  - stratigraphy 263–6, 274, 276
- Phitsanolok Basin 242
- phreatic fracture belt 70
- diagenetic evidence 63–4, 66
- Pindirola Shales 309
- Pisia Fault Zone 60, 63–5
- Pobie Fault 110
- Pobie Ridge 111
- porosity measurements 326, 341
- post-rift subsidence
- causes of 33
  - flexural cantilever model 44–5
  - reverse modelling 45–8
- Potiguar Basin 215
- pour point 227
- precipitation, effect of rift topography on 132–3
- primary productivity role in hydrocarbon formation 218–19
- Pripyat Basin 215
- pristane: phytane ratio
- Lahat Formation 251
  - Pematang Formation 255
  - Phetchabun Basin oils 267
  - Sangkarewang Formation 263
  - Yuan Jiang Formation 273
- Psatha–Skins Fault Zone 67–70, 170–1, 173, 174
- Pungut Field 362–3
- pure shear models 17, 18, 27
- pyrolysis gas chromatography
- Central Sumatra Basin oils 223
  - Suez Gulf oils 229–30
- Qingshankou Formation 226, 317, 318–19, 320, 323
- Quantou Formation 317
- Raha Formation 80
- Rangau Graben 338, 343, 347, 348, 353
- Rankin Formation 149
- Reconcavo Basin 215, 217
- Red Marl 290
- Red Sea Basin 215
- relay zones *see* transfer zones
- reservoir studies
- Central Sumatra Basin 341
  - Greece 165–79
  - Songliao Basin 320–3, 326
  - South Gabon Basin 205–6
- resinite 310
- reverse modelling (post-rift) 45–8
- compared with forward modelling 48
  - Viking Graben forward and reverse model 48–51
- Rhine Basin 215
- fault patterns 12
- rhomb blocks 15, 16
- Richmond Basin 216, 218, 232
- hydrocarbon geochemistry 232–3
  - source rocks 232
- rifts
- architecture effects 1–5, 27
  - basin volume evolution 119
  - basin formation modelling *see* flexural cantilever; reverse
  - block terminations 15–16
  - defined 16
  - geometry 1, 26–8
  - see also* rift architecture; fault angle; basin inversion
  - hydrocarbon characteristics 213–14
  - sedimentation
    - controls on 117–18, 136–9
    - effect of structural elements on accommodation zones 121–9
    - internal features 133–6
    - rift shoulders 130–3
- segments 9–13
- shoulders
- climatic effect of 131–3
  - effect of flexural margin on 131
  - effect of footwall uplift on 131
  - effect on sedimentation of 130–1
  - timing of evolution 138
- structure 136–8
- modelling of 118–21
  - transfer zones 13–15
- rift lake sediments 183, 197
- South Gabon Basin 200
- depositional model 206–7
  - facies analysis 200–4
  - sand body orientation 204–5
  - sedimentary body architecture 207–8
- rift-parallel fault blocks 133–4
- timing of evolution 138
- Rio Grande Rift 127, 129, 139, 166
- river basins, use in rift structural analysis 167–71
- Rock Eval pyrolysis 309
- Central Sumatra Basin oils 350, 353
  - Kampar Kanan oils 255
  - Ombilin Basin oils 261
  - Yuan Jiang Formation oils 270
- Rudeis Formation 80, 85
- Rufiji Formation 307
- Ruhuhu Accommodation/Transfer Zone 184
- Ruhuhu Delta
- geological setting 184–5
  - hydrocarbon potential 191–3
  - physical setting 183–4
  - seismic survey
  - methods 185

- results 185–8
  - results discussed 188–91
- Ruhuhu Formation 305, 311
- Ruhuhu Rift 312
  - initiation 297
  - sedimentary history 297–300
  - structural evolution 300–1
- Rukwa Rift 2, 10, 302, 312
  - accommodation zones 121
- Rungwe Volcanic Province 130
- Ruvu Rift 306, 312
- Ruvuma Rift 305–6
  
- sag, relation to rift evolution 119
- Sakamena Group 309
- Sakoa Group 309
- salinity and organic matter
  - preservation 220, 221
  - production 219
- Sangkarewang Formation 258–60, 261, 278
- Saronic Gulf 177
- Sawahlunto Formation 260, 261
- Sawahtambang Formation 260, 261
- sea level, rates of change of 174
- sedimentation rates, role in organic matter
  - preservation 221
- segmentation in rifts 58–9
  - causes 9–10
  - types 10–13
  - see also* South Alkyonides Fault Segment
- seismic sections, subsidence indicators 147–8
- seismic surveys
  - East Shetland Basin 111
  - East Shetland Platform 109–10
  - Horda Platform 109
  - South Viking Graben 105–9
  - Unst Basin 110–11
- sequence stratigraphy 172–5
- Shearwater Salt Formation 109
- shoreface sediments 157
- Sihapas Formation 253
- Sihapas Group 331
  - stratigraphy 338–41
- simple shear models 17, 18, 27
- Sirte Basin 215
- Songliao Basin 215, 225–6
  - hydrocarbons
    - geochemistry 227
    - pay horizons 325–6
    - production potential 328
    - properties 326–8
    - reservoirs 320–3, 326
    - sources 226–7, 318–20
    - trap types 324–5
  - sedimentary history 317–18
  - tectonic evolution 317
- Songwe Rift 301–2, 312
  - evolution 302–3
  - source rocks 309
- source rocks 214–17
  - factor affecting 217–21
  - regional studies
    - Central Sumatra 216, 221–3, 249–51, 260–3, 277, 347–51
    - China 226–7, 270–3, 277, 318–20
    - Suez Gulf 228–9
    - Thailand 266–8, 277
    - Tanzania basins 309–11
    - USA basins 231, 232
- South African Basin 215
- South Alkyonides Fault Segment 60–3
  - Asprokambos Intrabasin Transfer Zone 65–7
  - Pisia Fault Zone 60, 63–5
  - Psatha Fault Zone 67–70
  - regional significance discussed 70–2
- South Gabon Basin
  - basin evolution 208
  - depositional model 206–7
  - exploration history 198
  - facies analysis 200–4
  - reservoir correlation 205–6
  - sandbody orientation 204–5
  - sedimentary body architecture 207–8
  - sedimentary environment 200
  - stratigraphy 199–200
  - structure 200
- South Gharib Formation 80
- South Sumatra Basin 215
- South Viking Graben 105–9
  - splays 10, 11
  - sporinite 310
- sterane distribution
  - Kampar Kanan Basin oils 257
  - Lahat Formation 251
  - Phetchabun Basin oils 266
  - Yuan Jiang Formation 273
- Stockton Formation 138
- strand 59
  - characteristics at Pisía 63–5
- strike ramps 15, 16
- structural geometry, control on rift sedimentation on
  - 117, 136–9
- subsidence 33, 38
  - rates 174
  - seismic indicators 147–8
- Sudan Rift Basin 119, 215
  - accommodation zones 121
- Sudr Chalk 80
- Suez, Gulf of 6, 8, 11, 119, 215, 227–8
  - accommodation zones 121, 128, 129
  - fault block geometry
    - Abu Gerfan 83–4
    - Abu Shaar 83
    - Esh el Mellaha 82–3
    - Gebel el Zeit 84–9
    - subsurface constraints 89–94
  - flexural margin 131
  - hydrocarbon geochemistry 229–30
  - Neogene history 75
  - regional cross-sections
    - Gemsa Basin–Gebel el Zeit 94–5
    - Red Sea Hills–Sinai 95–8
  - role in passive margin modelling 98
  - source rocks 228–9
  - stratigraphy 79–82
    - basement 79

- pre-rift 79–81
- syn/post-rift 81–2
- structural interpretation problems 75–8
- transfer faults 134, 136
- transfer zone 13, 15
- tectonic setting 78–9
- volcanism in 129–30
- sulphur in oils 349
- Sunda Craton 353
- Sunda Folds 363, 364
- Sydney Basin 215
- syn-rift subsidence
  - causes of 33
  - see also* Tanganyika Rift case study
- synthetic transfer zone 13, 14
  
- Takutu Basin 215
- Talang Akar Formation 244
- Tandun Field 362–3
- Tanga Basin 306–7
- Tanganyika, Lake 122, 131, 216, 218, 219
- Tanganyika Rift 39–40, 119
  - accommodation zone 121, 123
  - fault patterns 24
  - flexural cantilever modelling
    - central horst 41–3
    - full-graben 41
    - half-graben 40–1
    - summary 43–4
- Tanzania rifts *see* Luwegu; Mikumi; Ruhuhu
- Tanzanian Craton 7
- Tao Yuan Formation 268
- Taranaki Basin 215
- Tashkent Basin 215
- tectonism, effect on lithofacies of 145–6
- Telisa Formation 214, 221, 339
- temperature, effect of rift topography on 132–3
- Tengiz Basin 215
- Terbanggi Graben 243–4, 274, 275, 276, 277
- terpanes 281
- Tertiary studies 75, 245, 246, 253, 261, 265, 270
- Thai Basin 215
- Thailand Graben
  - history of research 241–2
  - see also* Phetchabun Basin
- Thebes Formation 80
- Three Pagodas Fault 263
- Tibawan Graben 251
- total organic carbon (TOC) 309, 347, 348
  - Kampar Kanan Basin 255
  - Ombilin Basin 260
  - Phetchabun Basin 266
  - Yuan Jiang Formation 270
- trace fossils, use in interpretation 154–5, 160
- transfer faults 15, 16
  - effect on sedimentation of 134–6
  - timing of evolution 138
- transfer zones 13–15, 119
  - Greece 171–2
    - sedimentary sequence zone characters 177–8
    - sedimentary studies *see* Ruhuhu Delta
    - see also* accommodation zone
  - transform fault, use of terminology 119
  - trap studies
    - Central Sumatra
      - post-rift sequence 357–64
      - syn-rift sequence 365–6
    - Songliao Basin 324–5
- Triassic studies 300, 301
  - see also* Karoo
- triterpane distribution
  - Kampar Kanan Basin oils 257
  - Lahat Formation 251
  - Phetchabun Basin oils 266
  - Yuan Jiang Formation 273
- Tromsø Basin 215
- turbidite sediment analysis 197
- South Gabon Basin
  - depositional model 206–7
  - facies analysis 200–4
  - sand body orientation 204–5
  - sedimentary body architecture 207–8
- Turkana, Lake 125, 126, 127–8, 134, 216
  - seismic data 130
  
- Unst Basin 110–11
- uplift 22, 23
  - causes of 33, 38
  - factors affecting 166
- Upper Grit 290
- Upper Red Beds Formation 365
- upwelling and organic matter
  - preservation 220
  - production 219
  
- vadose diagenesis 65, 69
- Van Krevelin Diagram 351
- Viking Graben 35, 37, 47
  - faults 12
    - forward and reverse modelling of 48–51
    - see also* South Viking Graben
- viscosity studies 349
- vitrinite 309, 349, 352
- volcanism, effect on accommodation zones of 129–30
- Voyager Formation 149
  
- Walvis Basin 215
- water chemistry and organic matter
  - preservation 220
  - production 219–20
- wax values 349
- Wernicke model 37, 51–2
- Wessex Basin 215
- West Baffin Basin 215
- West Shetlands Basin 215
- Western Approaches Basin 215
- Whiterose Formation 149, 150, 158, 159
- Wichian Buri Graben 263, 275, 278
  
- Xai Xai Graben 307
- Xiang Yin Graben 268
- Xin Hekou Formation 268



Yaojin Formation 317, 319  
Yenisey-Khatanga Basin 215  
Yuan Jiang Formation 270, 277  
Yuan Jiang Graben 268, 275

Zambezi Rift 139, 304–5, 312  
Zambia *see* Karoo Rift Basins  
Zeit Formation 80  
zigzag faults 8–9, 16