Index

Abu Dhabi (Zakum field)
  diagenesis 309–13
  exploration history 299
  facies analysis 308–9
  petrography 303–8
  reservoir classification 301–3
  reservoir properties 313–5
  stratigraphy 300–1
  structure 299–300
Abu Mahara Formation 286, 289
Aden-Abyan Basin 330, 337
Aguardiente Formation 23
Alad' inskaya Formation 481
Alaska
  oil generation 179–81
  plate sequences 148–9
    Beaufortian 160–8
    Brookian 168–77
    Ellesmerian 149–60
  stratigraphy 144–8
Alaska (North Slope) petroleum province 2, 7
Albacora field 125–6, 135
Alborz Mountains 288–9
Albuskjell field 464
Algerian petroleum province 2, 7
Amal field 320–1
Ameland field 410
Amethyst field 410
Anabar province 477–9
Anahuac Formation 237–8
Anequim field 126
Angara-Lena province 487
Angayucham Terrane 168
Angelina-Caldwell Flexure 266
anhydrite
  cements 259–60, 409
  crystallization 382
  seals 339
Apalachicola Embayment 226
Apennine Thrust Belt *see* Fossa Bradanica
Apulia Plate 369
Apure Basin *see* Barinas-Apure
Ara Formation 287, 289
Arabian Gulf 287–8, 294
Arajuno Formation 96
Areo Formation 44
Argyll field 450, 464
Arkana field 271
Asmari Formation 296
Auca field 97
Audrey field 410
Auk field 448, 450, 464
Austin Group 234
Australia (Gippsland Basin)
  exploration history 525–7
  field characteristics
    Flounder 535–6
    Fortescue-Cobia-Halibut 536–7
    Kingfisher 537–8
  maturation 529–30
  sequence stratigraphy 532–5
  source rocks 530–1
  structure 527–9
  trapping 531–2

backarc basin type 4, 5, 6
Badayi Basalt Formation 285
Badejo field 126
Baghanwala Formation 288
Bagre field 126
Baikit province, 479
Bakken shale 193, 200
Baluchistan Basin 510–2
Bangestan Group 296
Bani Ghayy Group 281
Bara Formation 519
Barinas-Apure Basin 13
  exploration history 55
  field analysis 69–75
  generation capacity 29–30
  geochemistry 63–9
  maturation 27
  production statistics 9
  source rocks 24, 63
  stratigraphy 55–61
  structure 22–3, 61–3
Barnett field 270
Barque/Clipper field 410
Barranquin Formation 23
Barrow Arch 147, 149, 166, 172
Barut Formation 288–90
basin classifications 3–5
Baxterville field 271
Bay Springs field 271
Bayandor Formation 288–90
Beatrice field 464
Beaufort Sea 149
Beaufortian plate sequence 148–9
  resource potential 166
  sequences
    Lower 161–2
    Upper 162–6
  tectonic regime 160–1
Beaverhill Lake Group 192–3
Bedinan Formation 284
Beechwood field 271
Belayim Formation 335
Belly River sands 189, 198
Bel'skaya Formation 487
Bergen field 410
Bermejo field 97
Beryl field 454, 464
Bicudo field 126
Big Island field 271

Black Creek field 274
Black Jack Creek field 270
Boknfjord Group 445
Bolton field 271
Bonaire Basin 9, 29
Bone Island Formation 232
Bonito field 125–6
Bonoco Fault 17–18, 79
Borracha Formation 23–4
Bossier Formation 230
Boundary Creek Formation 174, 176
Bowland shales 432
Brae field 457, 464
Brazil (Campos Basin)
  exploration history 125–7
  geochemistry 127
  oil chemistry 130–3, 138
  reservoirs 134–9
  source rocks 127–34
  stratigraphy 121
  tectonic evolution 119–25
Bream field 464
Brent field 464
Brent Group 451, 454
Brookian plate sequence, 149
  basin initiation 168–9
  oil generation 179–81
  resource potential 175–7
  sequences
    Lower 169–73
    Middle 173–4
    Upper 175
Broom Formation 451
Bryne Formation 454
Buah Formation 286, 289
Buchan field 448, 464
Buckner field 270
Buda Formation 230
Bulaiskaya Formation 487
Bure field 410
Burguita Formation 23
burial graphs
  Australia 530
  Brazil 128–9
  Canada 200
  Ecuador 100
  England (North) 434–5
  Venezuela 67
Burj Formation 284
Buzbee field 270

Caledonian structures in N England 417–20
California petroleum province 2, 6
Calow gasfield 432
Cambrian reservoir rocks 477–9, 482, 487
Campos Basin
  exploration history 125–7
  geochemistry 127
  oil chemistry 130–3, 138
  reservoirs 134–9
  source rocks 127–34
  stratigraphy 121
  tectonic evolution 119–25
Campos Formation 120–2
Canada Basin opening 166–8, 172
Canada (Western)
  exploration history 189–91
  migration modelling 198–200
  production statistics 2, 6
  source rocks 191–8
  stratigraphy 190
Candela field 375, 378
Cane River Formation 235
cap rock types
  Australia 536–7
  England (North) 432
  Middle East Salt Basin 296
  North Sea 455, 457, 461
  Suez Gulf 363
  US W Texas 260
  USSR Siberia 496–7
  Venezuela 45
  Yemen (PDR) 333, 338–9
Capacho Formation 23–4
Carapeba field 126
Carapita Formation 44–6
Caratas Formation 44
carbon content *see* total organic carbon
carbon dioxide occurrence 378
carbon isotope values for oils
  Ecuador 102–4
  England (North) 433
  Netherlands 394
  US Gulf Coast 270–1
  US W Texas 260, 267–8
carbon preference index (CPI) 267–8
carbonate diagenesis
  Abu Dhabi 309–13
  Netherlands 389–97
  North Sea 409–10
  US W Texas 275
carbonate platform development 382, 385–9
Carbonera Formation 28–9, 59
Carboniferous rocks
  reservoirs
    Alaska 157
    China 545
    England (North) 430–4
    USSR Siberia 477
  sedimentary history
    Alaska 154–7
    England (North) 421–7
    Pakistan 514
  sources
    Alaska 157
    Canada 193
    England (North) 417, 433
    Netherlands 379
    North Sea 399, 400
Cardium sands 189, 198
Cariaco Basin 9, 18, 28–9
Cariaquito Formation 25
Caribbean Plate 13–14, 21
Carupano Basin 9, 18, 25, 28
Catahoula Group 237
Caucasus (North) petroleum province 2, 6
cements *see* anhydrite; carbonate diagenesis; gypsum
Central Graben of North Sea

sediments 447, 454, 457–8, 466
structure 441–5
Ceuta field 78–88
Chaguaramos Formation 28, 29
Chalcana Formation 96
Chalk Group 458, 461
Chambira Formation 94
Chapel Hill field 271
Chapiza Formation 91
chemical analyses of oils
Brazil 130–3, 138
Canada 200
Ecuador 101–4
Oman 320
US W Texas 267–72
USSR Siberia 488
Cherne field 125–6
Chichalli Formation 516
China (Junggar Basin)
exploration history 545
migration and trapping 552–6
reservoirs 550–2
source rocks 551
stratigraphy 547–50
tectonic setting 545–7
China (North) petroleum province 2
Chinese type basin 4–6
Chukchi Sea 149, 171, 177, 180
Chunchula field 270
Claiborne Group 235–7
Clarksville field 271
Claymore field 464
Claymore Formation 457–8
Clayton Formation 235
Clear Springs field 271
Cleeton field 410
Cobia-Halibut field 536–7
Coca field 97
Cockfield Formation 235–7
Cocos Plate 18
Coevorden gasfield 384
Cogollo Group 23–5, 77–8
Colon Formation 23–4, 78
Colorado Shale Group 196–8
Colville Group 146, 173
Colville Trough 149, 172–3, 178–9
Cononaco field 97
Cormorant field 464
Corvina field 126
Corwin delta 171
Cotton Valley Group 230
Cowden-Foster field 250
cratonic type basin 4–6
Cretaceous rocks
reservoirs
Abu Dhabi 301–3
Alaska 166
Brazil 134–9
Canada 201
Ecuador 104–9
Middle East Salt Basin 296
US Gulf Coast Basin 230–5, 273–4
Venezuela 45, 46
Yemen (PDR) 332–3
sedimentary history
Alaska 162–6, 171–3
Australia 527–8
Ecuador 91–4
Italy 369
North Sea 404
Pakistan 509–10, 517–18
Suez Gulf 354
Venezuela 13, 43–4, 56
sources
Australia 530–1
Brazil 127–34
Canada 195–8
Ecuador 97–8, 104
Middle East Salt Basin 295
North Sea 445
Oman 317
Pakistan 513, 517–18
US Gulf Coast 274
Venezuela 9–12, 23–9, 45, 63, 79
Yemen (PDR) 333
Cromer Knoll Group 458
Cypress Lake West field 270

Dahu Formation 287
Datta Formation 516
Deccan Trap basalts 510, 519
Derik Formation 284, 289
Desu Formation 287
Devonian rocks
reservoirs
Canada 201
North Sea 448
sedimentary history
Alaska 154
Pakistan 514
sources
Canada 191–3
Yemen (PDR) 333
Dhruma Formation 295
diagenesis *see* carbonate diagenesis
Diyab Formation 313, 317, 320, 325
Dokhan volcanics 283
Dolomite Formation 284
dolomitization
Abu Dhabi 310
Netherlands 392
North Sea 409
Doran Granite 280–1, 288
Dorcheat-Macedonia field 270
Draupne Formation 447
Dukhan Formation 295
Dune field 250
Dungan Formation 519
Dunlin Group 451
Dunlin Group 451
Duvernay Shale Formation 198, 200

Eagle Ford Group 234, 274
Eakring oilfield 420
East Schuler field 270
East Shetland Basin 445, 451
East Texas field 271
East Texas Salt Basin 2, 224, 266

East Venezuela Basin 12–13
  exploration history 37–9
  field analysis 345–53
  geochemistry 45
  maturation 27
  production statistics 6, 9
  source rocks 24, 28
  stratigraphy 42–4
  structure 22–3, 39–42
East Zeit field 354–5, 358–60
Echooka Formation 146, 157
Ecuador (Oriente Basin)
  exploration history 89
  geochemistry 97
  oil chemistry 101–4
  oil generation 98–101
  oil migration modelling 109–10, 116
  reservoirs 104–9
  source rocks 97–8
  stratigraphy 93–6
  structure 96–7
  tectonics 89–91
Edale shales 432
Edwards Limestone Formation 230
Egersund Sub-Basin 445, 448, 454
Egypt
  Infracambrian 283–4
  see also Suez Gulf
Eileen Formation 146, 158
Ekofisk field 464
El Cantil Formation 23, 24
El Carito field 38, 39, 49–51
El Furrial field 12, 45–9
El Pilar Fault 17, 20, 39
El Zeit, Gebel 356–7
Elba field 271
Eldfisk field 464
Elk Point Group 191–2
Ellesmerian plate sequence 148
  basin development 154–60
  basin initiation 149–54
  resource potential 160
Embore Formation 120, 121, 122
Ems Low 382–4
Enchova field 126
Endicott Group 146–7, 155–6
England (North)
  exploration history 418
  hydrocarbon distribution 429–30
  maturation 434
  oil field evolution 434–7
  reservoir potential 430–1
  seal rocks, 432
  structural factors
    Caledonian 417–20
    Cenozoic events 428–9
    Late Mesozoic events 428
    Permo-Triassic events 428
    Variscan 420–27
  trap mechanisms 432–3
Enterprise field 271
episutural basin type 3
Escandalosa Formation 23–4
Esna shale 354
Etive Formation 454
Eunice-Monument field 250
Exshaw/Bakken shale 193, 198, 200

facies distribution maps
  Abu Dhabi 308–9
  Australia 590
  Brazil 134
  Ecuador 116
  England (North) 425–6
  Netherlands 383
  US W Texas 251–2
  Venezuela 26, 60
Falcon Basin 9, 25, 28–30
Fara Sandstone Formation 287, 290
Farallon Plate 13, 18
Fatima Formation 285, 289
faults *see* growth faults
Fayette field 271
Fish Scale Zone 196, 200
Fjerritslev Formation 454
Flomaton field 271
Flora field 271
Flounder field 536–7
folded belt type basin 3
Fordoche field 271
foredeep type basin 4–6
Fortescue field 537–8
Forties field 464
Fossa Bradanica
  exploration history 370–1
  geochemistry 377–8
  reservoir properties 377
Fouke field 270
Fredericksburg Group 230–1
Frigg field 464
Fringe Zechstein Group 379
Frio Formation 237
Fulmar field 457, 464

Gach Saran Formation 296
Gadvan Formation 295
Garau Formation 295
Garoupa field 126
Garoupinha field 126
gas compositions
  Italy 378
  Netherlands 379
  US Gulf Coast 274–5
gasfields
  Canada 199
  England (North) 432
  Italy 373, 375, 377–8
  Netherlands 379
  North Sea 399, 400, 410, 464
  Pakistan 523
  US Gulf Coast 231
  USSR Siberia 482, 494
generating capacity 29
generation timing
  Alaska 179–81
  Australia 532
  China 554
  Ecuador 98–101

Middle East Salt Basin 296–7
US Gulf Coast 269
geochemistry of oils
Brazil 127
Ecuador 97
Italy 377–8
Oman 320–6
US Gulf Coast 270–1
Venezuela 45, 63
geothermal gradient estimates 63–4, 127
Germany 410
Ghabar Group 286
Ghadyah Formation 339
Gharish Group 286
Ghazij Formation 521
Gippsland Basin
exploration history 525–7
field characteristics
Flounder 536–7
Fortescue-Cobia-Halibut 537–8
Kingfisher 538–9
maturation 530–1
sequence stratigraphy 533–6
source rocks 531–2
structure 528–30
trapping 532–3
Glen Rose Formation 230
Goldsmith field 250
Goru Formation 517
gravity anomaly data 507–8
gravity values (API)
Abu Dhabi 314
Ecuador 108, 110–3
Italy 377
Oman 323–4, 326
US Gulf Coast 233, 269
US W Texas 256–7
Venezuela 79–80, 101, 105, 107
Grayburg Formation 251, 255–7, 259–62
Groningen field 408, 410–1
Grosmont Formation 198–200
Grotolle-Ferrandina field 373, 376
growth faults
characteristics 203–4
classification 206–7
ductile shale detachment 208–10
non-detached 214–6
salt withdrawal 210–4
salt-sill detachment 214
stratigraphic detachment 206–8
interrelationships 216–8
Guafita Formation 58–9, 71
Guarico Formation 25, 29
Guasare Formation 78
Guayuta Group 43
Gudgeon field 410
Gulf Coast Basin (US)
exploration history 221
future development 243–4
geological setting 221–4, 265–6
growth fault studies 203–4, 206–16
production statistics 2
reservoirs 229–43
salt diapirism 227–9
salt distribution 205
source rocks 205–6
structural setting 224–7
Gulf of Venezuela Basin 9
Gullfaks field 454
Gurnard Formation 529, 535, 539
Gurpi Formation 295
gypsum cements
North Sea 382, 409
US W Texas 259–60

Habshan Formation 301
Habshiya Formation 339
Hadramaut-Jeza Trough 329, 334, 338
Hajir Formation 286
Halten Terrace 471
Haltenbanken province 471
Hammamat Formation 283–4, 289
Hangu Formation 518–9
Hanifa Formation 295
Hanna Trough 149, 180
Harut Formation 286
Hassi Messaoud field 7
Hathern Shelf 42
Hatter's Pond field 270
Hauptsandstein 420, 410
Haynesville Formation 267
Heather Formation 446, 454
Heidelberg field 271
Heimdal field 464
Highly Radioactive Zone (HRZ) 148, 171, 176
Hilal field 354–5, 358–60
Hobbs field 250
Hollin Formation 93–4, 104–6
Hominy field 271
Horda Platform 445, 451
Hormuz Formation 288, 290
Hosston Formation 231–2
Humber Group 445
Hunt Fork Formation 145–6, 154
Huqf Group 286, 290, 317, 320–1
hydrogen index 63
hydrogen sulphide occurrence 193

I & L field 270
Idsas orogeny 280
illitization 409
Indefatigable field 410
Indus Basin 509–10, 516–8
Infracambrian
sediments of Middle East 282–9
source rocks of Pakistan 512
Interior Range (Venezuela) 39–41
Interior Salt Basin (US) 224, 231
Iran 287–9
Iraq 295
Italy (Fossa Bradanica)
exploration history 370–1
geochemistry 377–8
reservoir properties 377
stratigraphy 369–70
structure 373–7
Itkilyariak Formation 157
Ivishak Formation 158, 160

Izhara Formation 295

Jackson Dome 224, 233, 235, 266
James Formation 230
Jay field 270
J'Balah Group 285, 290
Jhelum Group 512
Jordan field 250
Jordan Rift Valley 284
Juan Griego Group 25
Junggar Basin 543–54
Jurassic rocks
  reservoirs
    China 547, 554
    Middle East Salt Basin 296
    North Sea 450–8
    Norway offshore 471
    Pakistan 513, 516
    US Gulf Coast 229–30
    USSR Siberia 496–500
    Yemen (PDR) 332–3
  sedimentary history
    Alaska 161–2, 169–71
    China 550
    Italy 369
    North Sea 403–4
    Pakistan 509–10, 516
    US Louann Salt Basin 205
    Venezuela 13
  sources
    Abu Dhabi 313
    Alaska 162, 166
    Canada 194–5
    China 550–1
    Middle East Salt Basin 294–5
  North Sea 445–8, 463
  Norway offshore 471
  Oman 317
  Pakistan 513, 516
  US Gulf Coast 266–7
  Yemen (PDR) 333, 338
Jusepin field 12, 37, 38
Jutana dolomite 288

Kahar Formation 280, 288, 290
Kalubik Formation 146, 148, 166
Kanayut Formation 145–6, 154
Karamay Thrust Belt 547, 549
Kareem Formation 354–5
Katanga province 482
Kavik Formation 146, 157
Kayak Formation 146, 157
Kazhdumi Formation 295, 297
Keg River Formation 191, 200
Kekiktuk Formation 146, 155, 157
Keoun Creek field 270
kerogen assessments
  China 549
  North Sea 445–7
  US Gulf Coast 267–8
Khabla Formation 286, 289
Khadro Formation 519
Kharaib Formation 301, 303–8
Kharus Formation 286
Khewra Sandstone Formation 288
Khisor Formation 288
Khufai Formation 286
Khuzestan 295
Kingak Formation 146–7, 161–2, 166
Kingfisher field 538–9
Kirthar Formation 521
Kopet Dag petroleum province 2, 6
Koruk Formation 284
Korvunchanskaya Formation 477
Kostinskaya Formation 479
Kot Formation 518
Kuhbanan Formation 287
Kuna Formation 157
Kuonamian Formation 488
Kuparuk River Formation 146–7, 165–6
Kussak Sandstone Formation 288
Kuwait 295

La Ceiba field 73–5
La Luna Formation 23–5, 78
  generating capacity 29
  geochemistry 79
  maturation 25–7
La Morita Formation 23–4
La Pascua Formation 28, 59
La Pica Formation 44
La Quinta Formation 77
La Rosa Formation 28–9, 78
La Vela Bay Basin 9, 18, 29
La Victoria field 70–2
Laffan Formation 295
Lagoa Feia Formation 121–2
Lagunillas Formation 28–9, 78, 80
Lakes Entrance Formation 530, 539
Lakhra Formation 519
Laki Formation 521
Lalun Sandstone Formation 288–90
Las Mercedes Formation 25, 28
Las Piedras Formation 44
Latrobe Group 528–9
  fields
    Flounder 536–7
    Fortescue-Cobia-Halibut 537–8
    Kingfisher 538–9
  sequence stratigraphy 533–6
Leduc Group 189
Lekhwair field 325
Lekhwair Formation 301
Leman Sandstone Formation 402, 405–6
Lena-Tunguska province
  exploration history 473–4
  productive regions 477–87
  reserves 488–9
  source rocks 487–8
  structure 474–6
Leon Formation 59
Linguado field 59
Linguado field 126
Lisburn Group 146–7, 156–7
Livingston field 271
Lockhart Formation 519
Los Jabillos Formation 44
Los Robles Group 25

Louann Salt 205, 222
Louisiana Salt Basin 224, 266
Lovett's Creek field 270
Lumshiwal Formation 518
Lurestan 295

Macae Formation 120–1
McElroy field 250
Mackenzie delta province 149
Macuma Formation 91
magnetic survey data 360, 507
Mahatta-Humaid Formation 286–7, 290
Maidin Formation 286, 289
Malhado field 126
Maljamar field 250
Mandal Formation 457
Mannville Group 195–6, 198, 200
Maracaibo Basin 10–2
  maturation 27
  potential 85–8
  production statistics 2, 6, 9
  reserves 83–5
  source rocks 23–4, 28
  stratigraphy 77–9
  structure 22–3, 80–3
Marcelina Formation 28–9
Mariann field 97
Marimba field 125–6
Marlim field 125–6, 135
Masseria Pepe field 373
Matatere Formation 25
Matulla Formation 354
maturation
  Ecuador 98
  Middle East Salt Basin 295
  Venezuela 25–7, 45
Maturin Sub-Basin 41–2
maturity measurements
  Australia 530–1
  England (North) 434–5
  North Sea 448
  US Gulf Coast 268–9, 273–4
Maureen field 464
Means field 250
Megan field 270
Melanico field 373
Merecure Group 28–9, 44
Mesa Formation 44, 94
Mezzarelle field 373
micritization 309–10
Middle East Salt Basin
  maturation 295
  oil migration 296–7
  production statistics 2, 6
  reservoirs 296
  seals 296
  source rocks 294–5
  stratigraphy
    Permian to present 293–4
    Precambrian 279–82
    regional correlation 282–9
  traps 296
Midlands Farms field 250
Midway Group 235
migration studies and models
  Brazil 134
  Canada 198–200
  China 552–5
  Middle East Salt Basin 296
  US Gulf Coast 269, 273
  US W Texas 260
  Venezuela 45, 69
Mila Formation 288, 289, 290
Miluveach Formation 146–7, 165
Minewah volcanics 283
Minhamir Formation 286, 289
Mirador Formation 28–9
Misoa Formation 78
Missionary field 271
Mississippi Salt Basin 2, 224, 266
Mistal Formation 286, 289
Mito Juan Formation 23–4
Monagas *see* East Venezuela Basin
Monroe Uplift 224, 233, 235, 266
Monte Strombone field 373
Monte Taverna field 373
Montney shale 193–4, 200
Montrose field 464
Moon Rock field 271
Morad Series 280
Moray Firth Graben 441, 445
Moreia field 126
Morgan field 355
Moro Formation 518
Mount Carmel field 271
Muraykhah Formation 285, 289
Murchison field 464
Musipan field 39, 45, 51–2
Muskeg Formation 191

Nabitah ophiolitic suture 285
Nahr Umr shale 295, 301
Najd Fault System 280–1, 285–6
Najmah Formation 295
Namorado field 126
Nancy field 270
Nanushuk Group 146, 148, 171
Napo Formation 96–8, 106–9
Naricual Formation 44, 48–9, 50
Natih Formation 317, 325
Navarro Group 234
Nazca Plate 18, 79
Nebo field 271
neomorphism 310
Nepa-Botuoba province 482
Ness Formation 454
Netherlands (Zechstein Basin)
  depositional model 385–9
  facies distribution 381–2
  gas reserves 408, 411
  stratigraphy 379–81
  structure 382–5
Niger delta petroleum province
  production statistics 2, 6
  reservoir studies 365, 367
Nilawahan Group 514
Nimra Formation 284
Ninian field 464

Nisku Group 189
Nordegg Formation 194–5, 198–200
Norphlet Formation 229, 267
North Aldan province 487
North Caucasus petroleum province 2, 6
North China petroleum province *see* China
North Louisiana Salt Basin 224, 266
North Mount Holly field 270
North New London field 270, 272
North Sea petroleum province 2, 6
  North
    exploration history 441
    maturation 448
    reservoirs 448–64
    resource evaluation 464–6
    source rocks 445–8
    structure 441–5
  South
    diagenetic effects 409–10
    reservoirs 406–10
    resource evaluation 414, 441
    Rotliegend history 405–6
    structure 399–405
North Slope petroleum province *see* Alaska
North Tunguska province 477
Norway (offshore) hydrocarbon province 471
Nova Siri Scalo field 377
Novaya Zemlya-Altai section 494, 496
Nubia sandstone 284, 353, 361–3
Nuka Formation 157
Nukhul Formation 354

Oca-Ancon Fault System 17, 79
Odin field 464
Oficina Formation 28, 29
Okpikruak Formation 146, 148, 171
Oman
  exploration history 317
  oil geochemistry 320–5
  stratigraphy 317–9
    Infracambrian 286–7
Ordovician reservoir rocks 447
Oriente Basin
  exploration history 89
  geochemistry 97
  oil chemistry 101–4
  oil generation 98–101
  oil migration modelling 109–10, 116
  reservoirs 104–9
  source rocks 97–8
  stratigraphy 93–6
  structure 96–7
  tectonics 89–93
Orinoco Heavy Oil Belt 9, 11–2, 30
Orinoco and Trinidad petroleum province 2
Orocual field 37, 39, 45–6
Orocue Formation 28, 29
Orsino field 373
Orteguaza Formation 94
Oseberg field 464
Otuk Formation 160–2
oxygen isotope values 260

Pab Formation 518–9
Pabdeh Formation 295
Pachuta Creek field 270
Pakistan
  basin development 508–12
    Baluchistan 510–12
    Indus 509–10
    Punjab 508–9
  exploration history 503–5
  oil geochemistry 323
  reservoirs 522
  source rocks 522
  stratigraphy 512–22
    Infracambrian 288
  structure 506–8
  traps 523
Palaeofacies maps
  Abu Dhabi 308–9
  Australia 539
  Brazil 134
  Ecuador 116
  England (North) 425–6
  Netherlands 383
  US W Texas 251–2
  Venezuela 26, 60
palaeogeography *see* palaeofacies maps
Paluxy Formation 232
Pampo field 125
Paraguana Peninsula 18–9
Parangula Formation 58
Parati field 126
Pargo field 126
Parsons sandstone 166
Patala Formation 518–20
Pauji Formation 80
Pearsall Formation 232
Pebble Shale Gamma Ray Zone 171
Peninsular Arch 226
Pentland Formation 454
People's Democratic Republic of Yemen *see* Yemen
Perija Fault 79
perisutural type basin 3
permeability measurements
  Abu Dhabi 302–3, 313–15
  Australia 537–9
  Netherlands 396, 408
  North Sea 450–1, 454, 457–8, 463
  US Gulf Coast 233
  Venezuela 72
  West Germany 410
Permo-Triassic rocks
  reservoirs
    Alaska 160
    China 547, 554
    Netherlands 389–97
    North Sea 406–9, 448
    Pakistan 513, 515
    US W Texas 255–6
  sedimentary history
    Alaska 157–60
    China 550
    Netherlands 382–5
    North Sea 402–3, 405–6
    Pakistan 514–16
    US W Texas 251–4

sources
Alaska 160
Canada 193–4
China 550–1
US W Texas 256–7
petroleum provinces summarized 1–4
Pettet Formation 232
Phosphate Zone 193–4
Pine Tree field 270
Piper field 457, 464
Pirauna field 126
Pisticci field 373, 376, 378
Plate tectonic influence on hydrocarbons
Apulia 369
Arctic Alaska, 148–9
Australia 528
China 545–7
Cocos 18
Farallon 13, 18
Nazca 18, 79
South America 14–18
Venezuela 13–18
causes 18–20
results 20–1
plateau basalt type basin 3, 4
Platonovskaya Formation 477
Pleistocene reservoir rocks
Italy 376–7
US Gulf Coast 241–3
porosity measurements
Abu Dhabi 302–3, 313–5
Australia 537–9
England (North) 431
Netherlands 396, 408
North Sea 409, 450–1, 454–8, 463
US Gulf Coast 233
US W Texas 258–9
Venezuela 72
West Germany 410
Porters Creek Formation 235
Porto Cannone field 375
Portuguesa Basin 25
Precambrian rocks
reservoirs, USSR 477, 479, 481–2, 487
sedimentary history, Middle East 282–9
sources
Oman 317
Pakistan 512
Predpatomskaya province 482
PreSayany-Yenisei province 487
ProtoTexel-IJsselmeer High 382–4
Prudhoe Bay field 7, 143
Pumbuiza Formation 93
Pumpkin Bay Formation 232
Punjab Basin 508–9, 512

Q crudes of Oman 321–2
Quaternary rocks
reservoirs
Italy 376–7
US Gulf Coast 241–3
sources 9
Queen Formation 251
Querecual Formation 23–4, 27, 43
Quevedo Formation 23–4
Quiriquire field 37–8, 41
Quweira Formation 284
Ram Sandstone Formation 284
Ranikot Group 519–20
Rannoch Formation 454
Rattray Formation 454
Ravar Formation 287
Ravenspurn field 410
Rawson field 271
Recent source rocks 9
Reindeer Formation 174
reservoir rock studies *see under each Period*
Rift Zone type basin 5, 6
Rio Grande Embayment 224, 230–1, 234–6
Rio Guacha Formation 25
Rio Negro Formation 23, 77
Rizu Formation 280, 287, 289
Roblecito Formation 28–9, 59
Robutain Formation 285, 289
Rodessa Formation 232
Rodney field 271
Romashkino field 7
Roseto-Monte Stillo field 375
Rotliegend of North Sea
reserves 411, 414
reservoir quality 406–10, 448, 450
stratigraphy 405–6, 409–10
Rotondella field 377
Rough field 410
Rub al Khali Basin 329, 332–3, 4
Rudeis Formation 354

Sabatain Formation 337
Sabden shales 432
Sabine Uplift 224, 234, 266
Sacha field 97
Sadan Formation 284–5
Sadlerochit Group 146–7, 158
Safiq Formation 317, 322–5
Sag River Formation 147–7, 158
Sahara petroleum province 2, 7
Sahmah field 322–5
salinity in oilfields 106, 109, 114
salt basins *see* Middle East; Suez Gulf; US Gulf Coast; Zechstein
salt diapirs and seismic interpretation 341
Salt Range Formation 288, 512
Samotlor field 7
San Andres Formation 251, 255–62
San Antonio Formation 23–4, 43–4
San Francisco Fault 39–41
San Juan Formation 44, 46
San Marcos Arch 224, 230–1, 234, 266
Sand Hills field 250
Sandres Formation 454
Santa Anita Group 44
Santa Marta Fault 79
Santiago Formation 93, 97
Saq sandstone 285, 289–90
Saramuj Formation 284, 289
Sargelu Formation 295
Saudi Arabia 285, 295
Sayhut Basin 329

Sayyala field 321–2
Scapa field 458, 464
Schneverdingen sandstone 410
Schuler Formation 230
Scram field 410
seals of reservoirs
  Australia 537, 538
  England (North) 432
  Middle East Salt Basin 296
  North Sea 455, 457, 461
  Suez Gulf 363
  US W Texas 260
  USSR Siberia 496–7
  Venezuela 45
  Yemen (PDR) 333, 338–9
Sean field 410
seismic sections
  Alaska 150, 151
  Brazil 122
  England (North) 420
  Suez Gulf 343–51, 360–1
  US Gulf Coast 208–9, 212, 215–7
  Venezuela 47–8, 62, 70–4, 81, 4
seismic techniques in salt basins
  methods 341–2
  modelling 342
  processing data 343–4
  results 344–50
selenite crystallization 382
Sembar Formation 517
Seminole field 250
sequence stratigraphy
  Australia 533–6
  England (North) 422
Seven Rivers Formation 251, 259–60
Severo-Vareganskoye field 498
Shabb Formation 286
Shabwa-Balhaf Graben 329–30
Shale Wall Formation 146, 173
Shammar rhyolite 281
Shear Zone type basin 5–6
Shelton field 271
Shetland Group 458
Shibkah field 325
Shilaif Formation 295
Shuaiba Formation 295, 301
Shublik Formation 146–7, 158–60
Shuntarskaya Formation 481
Shuram Formation 286, 289
Shushu Findi field 97
Siberian Platform petroleum provinces *see* Lena-Tunguska; West Siberia
Sidki field 354–5, 358–60
Siksikpuk Formation 157–8
Silurian rocks
  reservoirs in USSR 477
  sources in Oman 317
Silverpit Formation 402
Silvestre-Sinco field 13
Sinai Peninsula 283–4
Siq Formation 285, 289–90
Sirte-Libya petroleum province 2, 6
Slaughter Levelland field 250
Sleipner Formation 454–5
Sligo Formation 232
Slochteren Formation 402, 406
Smackover field 271
Smackover Formation 229–30, 266–75
Smithdale field 271
Snorre field 450, 455, 464
Socotra Basin 330
Sohlingen gasfield 410
Soltanieh Mountains 288–9
Soriano field 375
source rock studies *see under each Period*
South America *see* Brazil; Ecuador; Venezuela
South American Plate 14–18
South Florida Basin 226, 232–3
South Garib Formation 341, 355–6
South Paulding field 270
South Summerland field 271
South Tunguska province 479
Sparta Formation 235
Spruce Tree Formation 146, 173
Statfjord field 464
Statfjord Formation 450–1
Stord Basin 445, 455
Strzelecki Group 528
stylolitization 312
Sucre Group 43
Sudr Formation 354
Suez Gulf
  geophysical features 360–1
  reservoir distribution 361–3
  sequence thicknesses 358–60
  stratigraphy 353–6
  structure 341, 353
  unconformities 357–8
Sukhopitskaya Group 479, 481
Sulaiy Formation 295
sulphates *see* anhydrite; gypsum; selenite
sulphur occurrence 379
Sumatra petroleum province 2
Sunniland Formation 232–3

Talco Graben field 270
Tampen Spur 445
Tampico-Reforma-Campeche 2, 6
Tarbert Formation 454
Taylor Group 234
Telbismi Formation 284–5
Ten Boer Formation 402, 406
Tena Formation 94, 98–100
Tertiary rocks
  reservoirs
    Australia 536–7
    Brazil 134–9
    China 554
    Italy 373, 375–6
    Middle East Salt Basin 296
    Niger delta 365
    North Sea 461–4
    Pakistan 512–3, 520–1
    US Gulf Coast 205–6, 235–41
    Venezuela 45–6, 49, 83–5
    Yemen (PDR) 339
  sedimentary history
    Alaska 173–5

Australia 529
Ecuador 94
Italy 369–70
North Sea 404–5
Pakistan 510, 518–22
Suez Gulf 354–6
US Gulf Coast 226–7
Venezuela 13, 44, 56–61
sources
China 550
Pakistan 513, 520–1
US Gulf Coast 274
Venezuela 9–10, 12–13, 28
Texas
East Salt Basin 224, 266
West Permian Basin
exploration history 257–8
reservoirs 255–6
sedimentary history 251–4
source rocks 256–7
structure 254–5
Thamama Group 301
Thames field 410
Thebes Formation 354
thrust belt type basin 5–6
Tiguino field 97
Timbalier Trough 212–13
time-temperature index
Brazil 127
Ecuador 98–100
Tiyuyaca Formation 94, 98–100
Tobosa Basin 251
Tobra Formation 288, 515
Torok Formation 146, 148, 171
Torrente Saccione field 375
Torrente Tona field 373, 375
total organic carbon (TOC) measures
Australia 531
China 551
England (North) 433
North Sea 445, 447
US Gulf Coast 266, 274
USSR Siberia 487
Venezuela 63–4
trapping mechanisms
Abu Dhabi 313
Australia 536–7
Brazil 134–9
Canada 201
China 552–5
England (North) 432–3, 435
Italy 373–7
Middle East Salt Basin 296–7
North Sea 454–5, 457, 461, 463
Pakistan 523
US W Texas 255–6
Venezuela 69, 83, 85–6
Travis Peak Formation 231–2
Triassic rocks *see* Permo-Triassic rocks
Trilha field 126
Trix Liz field 270
Troendelas Platform 471
Troll field 457, 464
Trujillo Formation 82
Tungusikskaya Group 479
Tunguska province 477, 479
Turkey 284–5
Turnbull field 271
Turukhansk-Noril'sk province 477
Tuscaloosa Group 233–4, 274
Tutonchanskaya Formation 477
Tuwaiq Mountain Formation 295
Tyne Group 445

Ugnu Formation 146, 173–4
Ula field 457, 464
Umiat delta 171, 173
United Arab Emirates *see* Abu Dhabi
Urica Fault 39
Urumaco Trough 18
USA
also see Alaska
Gulf Coast Basin
exploration history 221
future development 243–4
geological setting 221–4, 265–6
growth fault studies 203–4, 206–16
production statistics 2
reservoirs 229–43
salt diapirism 227–9
salt distribution 205
source rocks 205–6
structural setting 224–7
W Texas
exploration history 257–8
production statistics 2
reservoirs 255–6
sedimentary history 251–4
source rocks 256–7
structure 254–5
Usolskaya Formation 479, 487
USSR
Lena-Tunguska
exploration history 473–4
productive regions 477–87
reserves 488–9
source rocks 487–8
structure 474–6
West Siberia
exploration history 493–4
future prospect 501–2
production statistics 2, 6–7
regional potential 494–5
reservoirs 495–501

Vacuum field 250
Valera Fault 23
Valiant field 410
Vanguard field 410
Variscan structures
England (North) 420–27
North Sea 399–402
Venezuela
also see Barinas-Apure; East Venezuela; Maracaibo
basin structure development 22–3
generating capacity 29
palaeogeography 26, 60

plate tectonic setting 13–22
provinces outlined 9
sedimentary history 13
Cretacous 23–7
Tertiary 28–9
Vermelho field 126
Vicksburg Group 237–8
Victor field 410
Vidona Formation 44
Viking field 410
Viking Graben 441, 445–7, 450, 454–5, 463
Viking sands 189, 197–8
Villeta Formation 25
Viola field 126
vitrinite reflectance measurements
Australia 532
Brazil 127
Ecuador 98
US Gulf Coast 269
Venezuela 68
Volga-Ural petroleum province 2, 6–7
Vulcan field 410

Waddell field 250
Washita Group 231
Wasson field 250
Wata formation 354
Welbeck Basin 433
Welland field 410
West Canada petroleum province *see* Canada
West Germany 410
West Sak Formation 146, 173, 174
West Siberia petroleum province
exploration history 493–4
future prospect 501–2
production statistics 2, 6–7
regional potential 494–5
reservoirs 495–501
West Sole field 410
West Texarkana field 270
West Texas Permian Basin
exploration history 257–8
production statistics 2
reservoirs 255–6
sedimentary history 251–4
source rocks 256–7
structure 254–5
West Vilyui province 485
White Speckled shale 196–7, 200
Widmerpool Gulf 421
Wiggins Uplift (Arch) 226, 266
Wilcox Group 235, 274
Willis Branch field 271
Winterburn Group 193
Wissey field 410
Woodbend Group 192–3
Woodbine Group 233–4

Yare field 410
Yates field
exploration history 257–8
porosity studies 258–9
production statistics 261–2
reservoirs 255–6, 260–1
seal rocks 260
sedimentary history 251–4
source rocks 256–7, 260
structure 254–5, 259
Yegua Formation 235–7
Yemen (PDR)
basin development 329–30
geophysical studies 334
oilfield potential 334–9
sedimentary history 286, 329
structure 331–3

Zagros foldbelt 6, 293
Zagros Mountains 287–8
Zaigun Formation 288–90
Zakum field
diagenesis 309–13
exploration history 299
facies analysis 308–9
petrography 303–8
reservoir classification 301–3
reservoir properties 313–5
stratigraphy 300–1
structure 299–300
Zebra sandstone 284
Zechstein Basin
Netherlands
depositional model 385–9
diagenetic studies 389–97
facies distribution 381–2
stratigraphy 379–81
structure 382–5
North Sea, sedimentary history 402–4
Zechstein Group 445–8
Zeit Formation 341, 356