

Index

Page numbers in *italic* refer to Figures. Page numbers in **bold** refer to Tables.

- 1881 earthquake 193, 205–206, 208, **210**
- 1941 earthquake 193, 206, 208, **210**
- 2004 earthquake and tsunami 1, 193, 206–207, 215–223, 215
- aftershocks 196, 200, 207
- co-seismic land-level changes 3, 15, 207, 210, 211–212, 211, 216, 217–218, 217, 218, 219, 220
- coral reef destruction 1, 15, 17, 17, 217, 218
- earthquake damage 216, 218–221, 220
- effect on Earth's rotation 206
- effects on hydrogeology 12, **12**
- effects on tombolo 15
- human casualties 216–217, **216**, 221
- megathrust rupture 215–216
- mud volcanoes 1, 85
- post-seismic deformation 211, 212
- tsunami 1, 221–223, 221, 222, 223
- accretionary wedge *see* Andaman–Nicobar accretionary ridge
- airports, earthquake damage 221
- Alcock Group 35–36, 37, 38
- Alcock Rise 22, 22, 27, 28, 36, 77, 167, 169, 193, 194, 211
- crust type and age 51–53, 52, 130
- seafloor spreading 30–34, 33, 34, 45, 47
- algae fossils **155**
- Andaman Flysch 23–24, **82**, 84, 96, 133–139, 141–150, 161, 198–199
- Bouma divisions 135–136, 135, 136
- building stone 229
- distribution and field attributes 81, 86, 87, 89, 89, 133–135, 134, 135, 142, 142
- flute casts 136, 136, 142
- geochemistry 137–139, **138**, **139**
- geochronology 76, 143–144, 145, 146, 149, 150
- geological summary 142
- measured section 133, 134
- petrography and heavy minerals 136–137, 137, 142–146, 143, 144, **146–147**, 148–149, **148**, 148, 149, 150
- provenance 33, 34, 68–69, 141, 146–149, **148**, 148, 149, 150
- sampling and analytical methods 142–144
- Andaman Islands 9–17
- 2004 earthquake and tsunami
- co-seismic land-level changes 207, 216, 218, 219, 220
- earthquake damage 216, 218–221, 220
- human casualties 216–217, **216**
- post-seismic deformation 211, 212
- tsunami 222–223, 222, 223
- Andaman Flysch
- distribution and field attributes 81, 133–134, 134, 142, 142
- geochemistry 137–139, **138**, **139**
- geochronology 145
- petrography and heavy minerals 136–137, 137, 144–145, 144, 146, **146–147**, 148, 149, 150
- provenance 68–69
- climate 9, 11
- coasts 13–17
- beaches and beach rock 5, 13–14, 13, 17
- coral and coral reefs 16, 17, 17
- coral terraces 1, 15, 16–17, 208, 209, 217, 218
- karstic landforms 14, 15, 16
- tombolo 14–15, 14
- colonization 1–4
- economic development 10–11
- evidence for older earthquake events 207–208
- geological summary 81, 84–88, 86, 88, 142, 142
- historical earthquakes 193–194, 205–207, 208, 209, **210**
- history of mapping and exploration 1–5
- location map 2
- provenance 68–69
- stratigraphy 79–84, **82**, 83
- structural features 78, 80, 81
- topography 9, 10
- vegetation 9–10
- water resources and hydrogeology 11–13, **12**
- see also* Andaman–Nicobar accretionary ridge; Andaman Ophiolites; Mithakhari Mélange; *individual islands*
- Andaman–Nicobar accretionary ridge 1, 76, 77, 194, 195, 196–198, 197
- accretion 22–23, 111
- early development 75–77
- ophiolite emplacement and evolution 51, 59–61, 60, 61, 69, 103–107, 105, 128–130, 197
- provenance of Andaman Islands sediments 68–69
- regional context 19–24, 20, 21, 22
- sediment supply 23–24
- slope basins 111, 112
- structure 77–78, 78, 79
- see also* Andaman Islands; Nicobar Islands
- Andaman–Nicobar Fault 194, 195, 198, 199–201, 201
- Andaman–Nicobar subduction system 76, 77, 111, 112, 141, 142, 193–202, 194, 201, 205
- accretionary wedge 1, 76, 77, 194, 195, 196–198, 197
- accretion 22–23, 111
- early development 75–77
- ophiolite emplacement and evolution 51, 59–61, 60, 61, 69, 103–107, 105, 128–130, 197
- provenance of Andaman Islands sediments 68–69
- regional context 19–24, 20, 21, 22
- sediment supply 23–24
- slope basins 111, 112
- structure 77–78, 78, 79
- Andaman–Nicobar Fault 194, 195, 198, 199–201, 201
- and Andaman Sea spreading centre 200, 201–202
- convergence rates and nature of slip 22–23, 209–211
- earthquake depths 205, 206
- forearc basin system 21, 32, 194, 195, 197, 198–200, 198, 199, 200
- forearc high 21, 194, 195, 197–198, 197
- fracture zones 194, 195, 196, 197
- nature of subducting plate 195–196
- Ninety-East Ridge 23, 77, 78, 194, 194, 195–196, 195
- present geodynamic configuration 106, 107–108
- subduction geometry 64–68, 66–67, 68
- trench sediment thickness 195, 196
- Andaman Ophiolites 20–21, 80, **82**, 87, 95–108, 96, 142, 195
- contact with Mithakhari Mélange 80, 83, 113
- distribution 81, 86, 142
- emplacement and evolution 51, 59–61, 60, 61, 69, 103–107, 105, 128–130, 197
- geochemistry 101–103, 102, 103
- mélange rocks 96, **97**, 98
- metamorphic rocks 95–96, **97**, 98
- ophiolitic rocks 96–101, **97**, 98, 100
- chromitites 57, 97, 100, 101, 102, 228–229, 228
- crustal section 57, **97**, 98, 99–101, 100
- hemipelagic sediments 57, 99–101, 100
- high-level intrusives 57, 99, 100
- layered gabbros 57, 99, 100
- mantle section 57, 97, **97**, 98, 100, 101, 101, 102

- Andaman Ophiolites (*Continued*)
 Moho Transition Zone (MTZ) 96, **97**,
 98–99, 98, 100, 101–102
 stratigraphy 57
 volcanic rocks 57, 99, 100, 102–103,
102, 103
- Andaman Sea 1, 27–48, 28, 46, 77, 201
 Central Andaman Basin 22, 27, 33,
 34, 44
 crust type and age 51–53, 52
 East Andaman Basin 31, 32, 32, 33,
 34–41, 36, 46, 47
 aging 34–35, 35, 36
 crustal thickness 36, 38–41, 40, 42
 interaction with eastern spreading
 centre tip 44–45, 45
 stratigraphy 35–37, 37, 38, 39
 structural style 37–38, 40, 41
 Gulf of Martaban 28, 45–46, 45, 47
 hydrocarbon exploration 225, 230, 231
 initiation of extension in Mergui Basin
 29–30, 30, 31, 32
 location map 2
 rifting mode 41–44
 seafloor spreading in Alcock and Sewell
 rises 30–34, 33, 34, 45, 47
 seismicity 205, 206, 207, 210, 211
 spreading centre 21, 30, 44–45, 194,
 200, 201–202
 earthquakes 205, 206, 207, 210, 211
 interaction with East Andaman Basin
 44–45, 45
 transform fault 201, 202
- Archipelago Group 4, 79, **82**, 85, 87–88,
 142, 153–165, **155**, 156, 198–199
 construction materials 229
 distribution 81, 86, 89, 142, 153,
 154, 154
 Inglis Formation 153, 154, **155**,
 159–160
 Long Formation 153, **155**,
 160–161, 227
 Melville Limestone **155**, 158,
 159–161, 227
 Neill Formation 84, 153–154, **155**, 159
 petrography 161–162, 161
 pyroclastic rocks 162–164, **163**, 164
 Round Formation 153, 154, **155**,
 158–159
 Sawai Bay Formation 153–154, **155**,
 159, 160, 161
 Strait Formation 153, **155**, 156,
 157–158
 stratigraphic issues 154–157
- Austin Strait 9
 Ayerwaddy River *see* Irrawaddy River
- back-arc spreading *see* Andaman Sea
 Baratang Formation 79–80, 112, 119,
 121, 230
- Baratang Island
 Andaman Flysch
 geochronology 145
 petrography and heavy minerals 144,
 144, 146, **146–147**, 148, 149, 150
- Archipelago Group 157, 157, 161,
 161, 162
 hydrocarbon exploration 230, 231
 karstic landforms 15, 16
 location map 2
 mud volcanoes 1, 83–84, 85, 230
 stratigraphy 83–84
- Barren Island 4, 5
 location map 2
 natural resources 229–230
 volcanism 22, 64, 90, 168–185,
 170, 189
 active lava flows 5, 173, 176,
 184–185
 fumarolic activity and fluid
 chemistry 179
 geochemistry 180–183, 182, 189
 historic volcanic activity 168,
 173, 174
 nature of crust below 189
 origin of ash 183
 origin of magma 185
 petrography 179–180, 181
 prehistoric volcanic activity 168,
 171–173, 172
 recent volcanic activity 1, 3, 168,
 173–179, 175, 177, 178, 183
 tectonic setting 167, 169
- Bay of Bengal 1, 19–20, 20, 23
 beaches 5, 13–14, 13
 beach rock 13–14, 13, 17
 chromite rich sands 228, 229
- Bengal Fan sediments 19, 20, 23, 78, 194,
 195–196, 195, 202
 and Andaman Flysch 139, 141, 143,
 144, 145, 146–149, **146–147**, **148**,
 148, 149, 150
- biostratigraphy, Mithakhari Mélange
 80–83, **82**, 122, 125
- Bouma divisions
 Andaman Flysch 135–136, 135, 136
 Namunagarh Grit 117–118
- Brookshabad quarry 229
- Brown Coal Formation 4
- building stone 229
- Burma Basin 22, 22
- Burma Plate 167
- Car Nicobar 9
 1881 earthquake 193, 205–206,
 208, **210**
 2004 earthquake and tsunami
 earthquake damage 221
 human casualties **216**
 tsunami 221, 222
- Archipelago Group 161
 location map 2
 water resources and hydrogeology **12**
- Central Andaman Basin 22, 27, 33, 34, 44
 ‘chaotic’ terrane 142
- Cheduba Island 205, **210**
- chromitites 57, 97, 100, 101, 102,
 227–229, 228
- climate 9, 11
- co-seismic land-level changes
 1941 earthquake 206
 2004 earthquake 3, 15, 207, 210,
 211–212, 211, 216, 217–218, 217,
 218, 219, 220
- coal 229
- coasts 13–17
 beaches 5, 13–14, 13
 beach rock 13–14, 13, 17
 chromite rich sands 228, 229
 coral and coral reefs 16, 17, 17
 coral terraces 1, 15, 16–17, 208, 209,
 217, 218
 karstic landforms 14, 15, 16
 tombolo 14–15, 14
 ‘coherent’ terrane 142
- Colebrook Island 154, 162, **163**
- colonization 1–4
- construction materials 229, 230
- convergence rates 22–23, 209–211
- coral and coral reefs 16, 17, 17
- coral terraces 1, 15, 16–17, 208, 209,
 217, 218
- Deep-Sea Drilling Project (DSDP) 19
- deep-water fold-thrust belts (DWFTBs) 78
- diatoms **155**
- digital elevation models (DEMs) 10, 78, 80
- Diligent Fault 21, 22, 32, 194, 195, 198,
 198, 199, 200, 200
- Distichoplax biserialis* 80, **82**, 125
- dripstone curtains 15, 16
- dual-arc model 64
- Duncan Passage 9
- earthquakes *see* 2004 earthquake and
 tsunami; seismicity
- East Andaman Basin 31, 32, 32, 33,
 34–41, 36, 46, 47
 aging 34–35, 35, 36
 crustal thickness 36, 38–41, 40, 42
 interaction with eastern spreading centre
 tip 44–45, 45
 stratigraphy 35–37, 37, 38, 39
 structural style 37–38, 40, 41
- East Andaman Fault 21, 22
- East Andaman Group 36–37, 37, 38,
 39, 42
- East Coast volcanic rocks 99, 102–103,
102, 103
- East Mergui Fault 30, 31
- Eastern Belt Ophiolites 55, 61–62, 95
- Eastern Margin Fault 77, 194, 195, 198,
 198, 199, 199, 200
- economic development 10–11
- exhumed mantle 27, 28, 29, 44, 47
- flute casts, Andaman Flysch 136,
 136, 142
- foraminifera
 Archipelago Group **82**, 88, 153, **155**,
 161, 161, 162
 Mithakhari Mélange **82**, 118, 122, 125
- forearc basin system 21, 32, 194, 195, 197,
 198–200, 198, 199, 200
- forearc high 21, 194, 195, 197–198, 197

- fossils
 Archipelago Group **82**, 88, 153, **155**, 161, 161, 162
 Mithakhari Mélange **82**, 118, 122, 125
- fracture zones 194, 195, 196, 197
- fumarolic activity, Barren Island 179
- Ganges–Brahmaputra River 19, 23, 24, 130, 141, 146–149
- gas hydrates 230
- geochemistry 5
 Andaman Flysch 137–139, **138**, **139**
 Andaman Ophiolites 101–103, 102, 103
 Barren Island 180–183, 182, 189
 Namunagarh Grit 118
 Narcondam Island 182, 188–189
- geochronology 5
 Andaman Flysch 76, 143–144, 145, 146, 149, 150
 Barren Island 173
 Mithakhari Mélange 125–126, **126**, 127, **128**, 128, 129
- geological exploration, history of 1–5
- Geological Survey of India (GSI) 5, 225, 227
- gold investigations 229
- gossan-rich zones 229
- gravitational mélange, Ophiolite Group 96
- Great Nicobar 9
 2004 earthquake and tsunami
 co-seismic subsidence 3, 218, 219, 220
 earthquake damage 221
 human casualties **216**
 tsunami 222
- Andaman Flysch
 distribution and field attributes 133, 134–135, 134, 142, 142
 geochronology 145
 petrography and heavy minerals 143, 144, 144, 145, 146, **146–147**, 148, 149, 150
 coral and coral reefs 17
 geological summary 89, 89
 location map 2
 water resources and hydrogeology 12
- Great Sumatra Fault 194, 195, 200
- Guitar Formation 153, **155**
- Gulf of Martaban 28, 45–46, 45, 47
- Havelock Island
 Archipelago Group 142, 160–161, 162, **163**
 beaches 13
 coral terraces 17, 208, 209
 location map 2
- Himalaya 19–20, 23
- Hope Town Conglomerate 68, 80, 115, 116, 117, 125, 126, 142, 145, 150
- Humphrey Strait 9
- hydrocarbon exploration 5, 34, 225, 230–231, 231
- hydrogeology 11–13, **12**
- hyper-extended continental crust 27, 28, 29, 38, 43, 45, 47, 53, 76, 130, 189
- India–Eurasia collision 19–20, 193, 201
- Indian Plate 1, 64, 65, 77, 193
see also Andaman–Nicobar subduction system
- Indo-Burma Ranges 1, 22, 22, 23, 24, 58–59, 65
- induced polarization (IP) anomaly zone 229
- infrastructure damage
 1941 earthquake 206
 2004 earthquake 216, 218–221, 220
- Inglis Formation 153, 154, **155**, 159–160
- Inglis Island 159, 162, **163**
- inner-arc volcanism 90, 167–189, 169
- Barren Island 22, 64, 90, 168–185, 170, 189
 active lava flows 5, 173, 176, 184–185
 fumarolic activity and fluid chemistry 179
 geochemistry 180–183, 182, 189
 historic volcanic activity 168, 173, 174
 nature of crust below 189
 origin of ash 183
 origin of magma 185
 petrography 179–180, 181
 prehistoric volcanic activity 168, 171–173, 172
 recent volcanic activity 1, 3, 168, 173–179, 175, 177, 178, 183
 tectonic setting 167, 169
- Narcondam Island 22, 64, 90, 185–189, 186
 lavas and pyroclastics 182, 187–189, 187, 188
 nature of crust below 189
 tectonic setting 167, 169
- International Ocean Discovery Program (IODP) 19
- Interview Island
 2004 earthquake and tsunami, co-seismic uplift 1, 208, 217, 218
- Archipelago Group 142, 156–157, 157, 161
 coral terraces 1, 15, 16–17, 208, 217, 218
 limestone resources 225
 location map 2
- Invisible Bank 53, 194, 195, 198, 198, 199, 200
- Irrawaddy River 19, 22, 23, 24, 44
 and Andaman Flysch 33–34, 68, 139, 141, 143, 144, 145, 146–149, **146–147**, 148, 149, 150
- isotope geochemistry 5
 Barren Island 182–183, 189
 Narcondam Island 189
- Jarawa Over-thrust 78, 86, 133
- karstic landforms 14, 15, 16
- Katchal Island
 2004 earthquake and tsunami
 co-seismic subsidence 218, 220
- human casualties **216**, 217, 221
- location map 2
- water resources and hydrogeology **12**
- Lhasa Terrane 55, 63, 66–67
- limestone resources 225–227, 226, 227
- Lipa Black Shale 87, 113–115, 114, 125, 126, 229
- Little Andaman
 2004 earthquake and tsunami
 co-seismic uplift 218
 earthquake damage 221
 human casualties **216**
 tsunami 222
 coral terraces 17, 208
 geological summary 88, 88
 location map 2
 seismicity 205, 206, 207
- Long Formation 153, **155**, 160–161, 227
- Long Island 2, 160, 226, 227
- Macpherson Strait 9
- mantle plumes 42, 43, 47
- mapping, history of 1–5
- mega-thrust earthquakes *see* 2004 earthquake and tsunami
- mélange rocks 111
see also Mithakhari Mélange
- mélange rocks, Ophiolite Group 96, **97**, 98
- Melville Limestone **155**, 158, 159–161, 227
- Mergui Basin 27, 28, 47, 193, 194
 aging 34–35, 35
 initiation of extension 29–30, 30, 31, 32
- Mergui Fault 30, 31, 32, 38
- Mergui Ridge 31, 32, 34–35, 193
- metamorphic rocks, Ophiolite Group 95–96, **97**, 98
- Middle Andaman
 2004 earthquake and tsunami
 earthquake damage 216, 218–221, 220
 human casualties **216**
- Andaman Flysch
 distribution and field attributes 81, 133–134, 134, 142, 142
 geochronology 145
 petrography and heavy minerals 144, 146, **146–147**, 148, 149, 150
 beaches 13
 chromitites 229
 coral and coral reefs 17
 geological summary 226
 limestone resources 225–227, 226
 location map 2
 structural features 78, 80, 81
 topography 9, 10
 water resources and hydrogeology 12
see also Andaman Ophiolites; Mithakhari Mélange
- Middle Strait 9

- Mithakhari Mélange 79–80, **82**, 83, 84, 87, 96, 111–130, **112**, *114*, *115*, *116*, 198, 199
- biostratigraphy 80–83, **82**, *122*, 125
- contact with ophiolites 80, 83, 113
- distribution *81*, 86, 89, 89, 113, 142, *142*
- geochronology 125–126, **126**, *127*, **128**, *128*, *129*
- Hope Town Conglomerate 68, 80, 115, *116*, *117*, 125, 126, 142, *145*, *150*
- limestones 225–227, 226
- Lipa Black Shale 87, 113–115, *114*, 125, 126, 229
- Namunagarh Grit 64, 116–118, *116*, 126, 142, *145*, *150*
- biostratigraphy 125
- building stone 229
- depositional environment 123–125
- geochemistry 118
- petrography 121–125, *124*
- provenance 23–24, 33, 34, 68, 69, *129*, 130
- sections mapped as 118–121, *119*, *120*, *121*
- Mogok–Mandalay–Mergui Belt (MMM Belt) 64, 69
- Mogok Metamorphic Belt 21, 22, 55, 57, 64
- Moho 38, 39, 40, 41, 42, 197
- Moho Transition Zone (MTZ) 96, **97**, 98–99, 98, *100*, 101–102
- mud volcanoes 1, 83–84, 85, 230
- Muralat Chalk Formation 154–156
- Myanmar
- oil and natural gas 231, 231
- ophiolites 55, 61–62, 62
- Naga Hills Ophiolite 56, 58, 61, 62, 62, 63, 68, 69
- Namunagarh Grit 64, 116–118, *116*, 126, 142, *145*, *150*
- biostratigraphy 125
- building stone 229
- depositional environment 123–125
- geochemistry 118
- petrography 121–125, *124*
- nanofossils **155**
- Narcondam Island 4, 5
- location map 2
- volcanism 22, 64, 90, 185–189, *186*
- lavas and pyroclastics *182*, 187–189, *187*, *188*
- nature of crust below 189
- tectonic setting 167, *169*
- National Gas Hydrate Programme (NGHP) 231
- National Geophysical Research Institute (NGRI) 5
- national parks 10
- natural gas 225, 230–231, 231
- natural resources 225–231
- chromite 227–229, 228
- coal 229
- construction materials 229, 230
- gold 229
- limestone 225–227, 226, 227
- nickel 229
- oil and natural gas 225, 230–231, 231
- platinum group of elements (PGE) 227–229
- sulphides 229
- sulphur 229–230
- volcanic ash 230
- Neill Formation 84, 153–154, **155**, *159*
- Neill Island
- Archipelago Group *159*, *160*, 161, 162
- beaches 13
- coral and coral reefs *16*, 17
- karstic landforms *14*, 16
- location map 2
- Neotethys 20, 21, 64
- Nereites 156, *156*
- New Exploration Licensing Policy (NELP) 231, 231
- nickel 229
- Nicobar Fan 9, 78, 194, 196, 202
- Nicobar Islands 9–17
- 2004 earthquake and tsunami
- co-seismic subsidence *216*, 217, 218, 220
- earthquake damage 221
- human casualties 216–217, **216**, 221
- tsunami 221, *221*, 222
- Andaman Flysch
- distribution and field attributes 133, 134–135, *134*, 142, *142*
- geochronology *145*
- petrography and heavy minerals *143*, *144*, *144*, 145, 146, **146–147**, 148, *149*, *150*
- Archipelago Group *142*, 154, 161
- climate 9, *11*
- coasts 13–17
- coral and coral reefs *16*, 17, *17*
- tombolo 14–15, *14*
- colonization 1–4
- construction materials 229
- economic development 10–11
- geological summary 88–89, 89, 142, *142*
- historical earthquakes 193–194, 205–207, 208, 209, **210**
- history of mapping and exploration 1–5
- location map 2
- vegetation 10
- water resources and hydrogeology 11–13, **12**
- see also* Andaman–Nicobar accretionary ridge; *individual islands*
- Nicobar Series 153–154
- Ninety-East Ridge 23, 77, 78, 194, *194*, 195–196, *195*
- North Andaman
- 2004 earthquake and tsunami
- co-seismic uplift *216*, 218
- earthquake damage *216*, 218–221, 220
- Andaman Flysch
- distribution and field attributes *81*, 133, *134*, *142*
- petrography and heavy minerals 137, *137*, *143*, 144, *144*, **146–147**, 148, *149*, *150*
- beaches 13
- chromitites 97, 228–229, 228
- coral terraces 17, 208, 209
- location map 2
- Saddle Peak 9, *10*, *11*
- structural features 78, *80*, *81*
- tombolo *14*, 15
- topography 9, *10*
- water resources and hydrogeology 12
- see also* Andaman Ophiolites; Mithakhari Mélange
- North Reef Island 17, *17*
- North Sentinel Island 2, *216*, 218, *218*
- North Sumatra Basin 28, 29–30, 30
- Oil and Natural Gas Commission (ONGC) 5, 77, 225, 230, 231
- oil resources 225, 230–231, 231
- Older Alluvium 4
- Older Sedimentaries 79, 84, 87
- olistoliths 84, 96, 111, 113, *114*
- olistostromes 96, 111, 113, *114*
- Ophiolite Group *see* Andaman Ophiolites
- ophiolites 20–21, 197–198
- in Myanmar 55, 61–62, 62
- Naga Hills Ophiolite 56, 58, 61, 62, 62, 63, 68, 69
- see also* Andaman Ophiolites
- Paget Island
- Archipelago Group 156, 162
- beach rock *13*, 14, 17
- coral terraces 208, 209
- location map 2
- passive margin development 27–29, 29, 42, 43, 44, 46–47
- petrography 5
- Andaman Flysch 136–137, *137*, 142–143, *143*, 144, *144*, **146–147**, 148–149, *150*
- Archipelago Group 161–162, *161*
- Barren Island 179–180, *181*
- Namunagarh Grit 121–125, *124*
- Narcondam Island 187–188, *188*
- PGE *see* platinum group of elements (PGE)
- phytokarst *14*, 16, *16*, 17
- pillow lavas 89, 89, 99, *100*, 102–103, **102**, *103*
- plate tectonic setting 62–63, 62
- platinum group of elements (PGE) 227–229
- Plinian eruptions 183
- plume-related magmatic activity 42, 43, 47
- podiform chromitites 57, 97, *100*, 101, *102*, 228–229, 228
- Point Island
- Archipelago Group 156, *156*, *161*, 162
- coral terraces *217*, 218

- Port Blair Series 4, 79, **82**
pyrite 229
- quarrying 229, 230
- Ranong Formation 34–35, 35, 37
reef terraces *see* coral terraces
regional tectonics 51–70, 52
 Andaman Sea crust type and age
 51–53, 52
 crust underlying Andaman Islands
 59–61, 60, 61
 crust underlying Indo-Burma Ranges
 58–59
 dual-arc model 64
 major terranes and sutures of eastern
 Asia 53–54, 54–58, 55, 56
 ophiolites in Myanmar 55, 61–62, 62
 palaeogeographic restoration 66–67,
 68, 69–70
 plate tectonic setting 62–63, 62
 subduction geometry 64–68, 66–67, 68
Ritchie's Archipelago 9, 88
 Archipelago Group 142, 154, 154,
 162, **163**
 beaches 13
 construction materials 229
 hydrocarbon exploration 230, 231
 limestone resources 225
 location map 2
Round Formation 153, 154, **155**, 158–159
Rutland Island
 Andaman Flysch
 distribution and field attributes 81,
 133, 134
 geochronology 145
 petrography and heavy minerals 144,
 144, 145, 146, **146–147**, 148
 Archipelago Group 162, **163**
 chromitites 97, 227–229, 228
 location map 2
 structural features 78, 80, 81
 see also Andaman Ophiolites
- Saddle Peak, North Andaman 9, 10, 11
Sagaing Fault 22, 27, 37, 44, 45, 46, 56, 56,
57, 193, 195, 201
 see also South Sagaing Fault
Salween River 19, 44
Sawai Bay Formation 153–154, **155**, 159,
160, 161
scoria cone, Barren Island 3, 168, 168, 170,
170, 173, 174, 175, 183
Scripps Institution of Oceanography 34, 77
seamounts 167, 198
 see also Alcock Rise; Sewell Rise
seawards-dipping reflections (SDRS)
 35–36, 43, 47
seismicity 1, 65, 193–194, 205–212
 Andaman Sea 205, 206, 207, 210, 211
 convergence rates and nature of slip
 209–211
 earthquake depths 205, 206
 evidence for older earthquake events
 207–208
 historical earthquakes 193–194,
 205–207, 208, 209, **210**
 see also 2004 earthquake and tsunami
Sewell Group 35–36, 37, 39, 41, 42
Sewell Rise 22, 22, 27, 28, 36, 47, 167,
169, 193, 194, 211
 crust type and age 51–53, 52, 130
 seafloor spreading 30–34, 33, 34,
 45, 47
Shan Scarp Fault 45, 46, 47
Sibumasu 21, 22, 22, 24, 33, 53, 54, 54, 57,
58, 62, 63
solfataric sulphur 229–230
South Andaman
 1941 earthquake 193, 206, 208, **210**
 2004 earthquake and tsunami
 co-seismic subsidence 216, 218,
 219, 220
 earthquake damage 216, 218–221
 human casualties **216**, 217
 post-seismic deformation 211, 212
 tsunami 222–223, 222, 223
Andaman Flysch
 distribution and field attributes 81,
 133–134, 134, 135, 142, 142
 geochemistry 137–139, **138**, **139**
 geochronology 145
 measured section 133, 134
 petrography and heavy minerals
 136–137, 137, 144, 146, **146–147**,
 148, 149, 150
 Archipelago Group 142, 156, 157–158,
 161, 162, 162, **163**
 beaches and beach rock 13, 13, 14
 construction materials 229, 230
 coral terraces 17
 geological summary 81, 84–88, 86
 gold investigations 229
 limestone resources 225, 227
 location map 2
 Moho exposures 197
 structural features 78, 80, 81
 sulphides 229
 tombolo 15
 topography 9, 10
 water resources and hydrogeology
 12, **12**
 see also Andaman Ophiolites;
 Mithakhari Mélange
South Sagaing Fault 28, 31, 32, 36, 37–38,
39, 40, 41, 42
speleothems 15, 16
Strait Formation 153, **155**, 156, 157–158
stratocone, Barren Island 3, 171–173,
172, 180
Strombolian eruptions, Barren Island 3,
170, 173–179, 175, 177, 178,
183, 184
sub-Plinian eruptions 183
subduction *see* Andaman–Nicobar
 subduction system
submarine fan deposits *see* Andaman
 Flysch
subsidence *see* co-seismic land-level
 changes
sulphides 229
sulphur 229–230
Sunda Plate 1
Sunda subduction zone 1, 193, 200, 205
 see also Andaman–Nicobar subduction
 system
Sundaland 20, 21
supra-subduction zone setting, Andaman
 Ophiolites 59, 101, 103, 104, 106,
 228–229
tectonic mélange, Ophiolite Group 96
Ten Degree Channel 9
thematic mapping 5
Tibetan Plateau 19, 21
tombolo 14–15, 14
toothpaste lavas 170, 173, 174
topography, Andaman Islands 9, 10
tourism 10–11
trace elements, Andaman Flysch 138–139,
 139
tsunami
 1881 earthquake 205
 1941 earthquake 206
 2004 earthquake 1, 221–223, 221,
 222, 223
Tugapur Limestone Member 225–227,
 226
turbidites 84, 142
 Namunagarh Grit 117–118,
 121, 121
 see also Andaman Flysch
uplift *see* co-seismic land-level changes
vegetation 9–10
volcanic ash, as resource 230
volcanism 1, 193, 195
 see also inner-arc volcanism
Wadati–Benioff zone 167, 205, 206
water resources 11–13, **12**
West Andaman Fault 27, 28, 33, 47, 77,
 193, 194, 200
West Burma Block 22, 53, 54, 57,
 58, 62
West Mergui Fault 30, 31, 32
Western Belt Ophiolites 55, 61–62,
 68, 95
Western Sunda Arc 167
Wharton Basin 194, 196
White Shale Formation 157–158
Wuntho–Popa Arc 64, 66, 69
Yetagun gas fields, Myanmar 231, 231
Zircon
 U–Pb 127–129, 144–152
 fission track 125–128