

Index

Page numbers in *italic* denote figures. Page numbers in **bold** denote tables.

- accretionary wedge
 - doubly vergent model, Apulian margin 509, *510*, 512, *516*
 - Lycian Nappes 460–462
 - see also* pro-wedge
- Adria 15, 16, 155, 159
 - Cenozoic 173
 - Cretaceous 171, 172, 174
 - indentation 174
 - Jurassic motion 23–24, 170
 - Palaeozoic 167
 - Permo-Triassic reassembly 17–18, 167
 - Triassic-Jurassic 167–169
- Aegean, extensional province 557, *558*, 577, 579, 591, 592, 671, 683
- Aegean, south
 - tectonic models 93–148
 - Cenozoic setting *101*, 102
 - recognizing settings 95
 - tectonic evolution *101*, 144–148
- Africa-Arabia plate motion 614, 615
- Africa-Europe plate motion 11, 25, 25–27, 27, 30, 309–310, *311*, 691
 - and ophiolite creation and emplacement 26, **28**, 29–31, **29**
 - reconstruction 15–21
- Agios Dimitrios fault 665–666, *666*
- Albania
 - geodynamic evolution 544
 - geology 539, *540*, 541–544
 - ophiolites 267–296, 304
 - geology 268, 269–272
- Albanides *540*, *541*
 - fission-track thermochronology 544–554
- Alboran fragment *14*, 15
- Alborz 184, 185, 191
- Alcı-Keleşli Fault Zone *599*, 601
- Aliakmonas fault zone 663–664, 666, 667
- Almopias Ocean 378
 - subduction 381, 408
- Almopias Zone 373–374, *375*, *376*, *377*, 406–408
 - foreland basin 403, *404*, *405*
 - late Jurassic transgression 389, 393–396, *397*
 - metamorphism 388, 393, 395
 - oceanic crust genesis 380, 381, 398–399
 - Palaeogene suturing 405–406
 - passive margin subsidence 380, 398, 401
 - sea-level rise 401
 - subduction 403
 - Triassic rifting 378, 408
- amphibole
 - blue, Pindos Flysch 502
 - Kömürhan ophiolite **338**, 341, 343
 - Vourinos 246
- amphibolite, Balkan Peninsula 169–170
- Anatolia
 - basin development 591–608
 - northwest, Palaeozoic terranes 53, 58–63
 - ophiolites 305, 327–346
 - plate motion 309, *345*
- Anatolide-Tauride fragment *14*, 15, 21
- Ankara-Erzincan suture 305
 - see also* Izmir-Ankara-Erzincan suture zone
- Anthemountas fault zone 661, 662, 666–667
- apatite, fission-track ages 544–554
- Apulia 15, 507, 542
 - subduction 493, 507–518
 - see also* Adria
- Apulia-Pelagonia suture 493, 507–518, *508*, *516*
- Arabia
 - ophiolites 305–308
 - plate motion 309, *345*, 614, 628, 630, 691
- Arakapas Fault Belt 353, 360
- Armorican Terrane Assemblage 52, 62–63
- Arna unit, metabasic igneous rock 135
- Arnea granite 38, 39
- Aspropotamus complex 242–243, *244*, 249
- Atlantic Ocean, north, continental break-up 11, 12–15, 21, 23
- augengneiss, biotite 37, 39
- Avalonian Terrane 52, 61–63
- Avdella mélange 240, 243, *244*, 384, 388
- Axios Zone *see* Vardar Zone
- Aykayası Formation 426, 429, *428*, 430

- back-arc basins
 - early Mesozoic, Black Sea-Caucasus 179–196
 - Jurassic 185–193
 - Triassic 181–185
 - Jurassic, Vardar Zone 381
- Baër-Bassit ophiolite 306, 318, *352*, 354–355
 - age 366
 - palaeomagnetic studies 351, 353, 355, *357*, 363–364
 - rotation 363–364
- Balkan Peninsula
 - evolution 155–175
 - Cambrian-Devonian **156**, 159, 167–168
 - Carboniferous-Permian **156**, 166–167, *168*
 - Cretaceous **158**, 171–173
 - Maastrichtian-Cenozoic **158**, 173–174
 - rotation 173–174
 - Triassic-Jurassic **157**, 167–171, *168*, *169*
 - geology 157, *160*, 159, *162*, 159
 - oceanic crust 166
 - ophiolites *165*
 - terraces **156–158**, 157, *162*, 159, *164*, 167–173
- Balkan Terrane 53
 - correlation with Istanbul Terrane 61
 - origin 62–63
 - Gondwanan 56, 57
 - palaeogeography 57
 - stratigraphy 55, 56–57
- Baltica 52, 56, 61
- Balyatağı Formation 615–617, *618*
- Bansko fault 674, *677*, *679*, 680, 682
- basalt
 - mid-ocean ridge *see* MORB
 - Pindos thrust sheets, geochemistry 472–474
 - Pontides, geochemistry 420–423, **424**, *425*, 431–432, **432**

- basement, pre-Alpine
 Crete 69–88
 Levantine Basin 206–209
 Serbo-Macedonian Massif 35–48
- basin-ophiolite relationship 309–319
- Baskil arc magmatic unit 328, 329, 331
- biochronology, Mesozoic radiolarites, Lycian Mélange 229–234
- Bitlis Suture Zone 614, 615, 626
- Black Sea-Caucasus
 early Mesozoic back-arc basins, evolution 179–196
- Blagoevgrad Basin 560–569, 578
- Blagoevgrad fault 680, 683
- blueschist 449–450
- boninite 22, 23, 312
- Borlu, Lycian Nappe klippe 453, 455, 456
- Bozdağ fault 594, 595, 596, 600
- Bulgaria
 Palaeozoic terranes 53, 54–57, 61–63
 southwest
 active faults 671–684
 geology 672
 late Cenozoic
 extension 557–586, 559, 672
 regional kinematics 578–581
 slip rates 577–578
 vertical crustal motion 581–584
 mammal fossils 560, 565–566, 569, 575
 sedimentary correlation 575–576
 tectonics 672, 673
- Cadomian magmatism 59, 61
- Calabria 14, 15
- Çameli Basin 595, 596
 evolution 596–610
 early-mid Pliocene 599–602
 fault kinematics 604–605, 606–607, 608
 late Miocene 594–597
 latest Pliocene 601
 Quaternary 601–602
- Çameli Formation 594, 595, 596, 598
- Carboniferous-Jurassic, basement evolution, Crete 69–88
- Carboniferous-lower Triassic succession
 western Crete 109–119
 interpretation 117–119
 sediment chemistry 111, 112
- Carboniferous-Permian, Balkan Peninsula 166–167
- carpholite, Fe-Mg 448, 449, 452–453, 452, 453, 454–458, 459, 460–462
- Caucasus, early Mesozoic back-arc basins 179–196
- Cenozoic
 late, southwest Bulgaria, extension 557–586
 South Aegean region 102
 thrust belts 96
- Central Bosnian Mountain terrane 159, 164, 166–167
- Chalkidiki Peninsula 36, 37
- Chamezi crystalline complex 71, 81, 83, 84, 87, 88, 119
 garnet zonation 79–81
 microfabrics 73, 79
 Phyllite-Quartzite unit 120–123
 structural evolution 77
- chromite, Vourinos 246, 253
- Cibyra Fault Zone 601–602
- Cimmerian orogeny 21, 92, 105, 107, 119, 131, 138, 139, 184
- Circum-Rhodope belt 37, 157
see also mélange, Pirgadikia Unit
- Çivril, Lycian Nappe klippe 453–455, 457, 459, 460
- clinopyroxene 272–273, 274, 278, 279, 283, 293–294
 geothermobarometry 283–284, 286–287, 289–290, 291
 Kömürhan ophiolite 337, 341, 343
- conglomerate
 Mana unit 115–117, 118–119
 Tripokefala beds 123
- Corsica 14, 15
 MORB ophiolites 30
- Crete
 central, Phyllite-Quartz unit 119–130
 eastern, Phyllite-Quartz unit 119–132
 geology 70–71
 pre-Alpine basement 69–88
 tectonic model 85–88
 U-Pb dating 69–70, 71, 74–76
 sedimentary studies 104–132
 tectonostratigraphy 102–104
 western, Phyllite-Quartz unit 109–119
- Crimea, deformation 192
- crust
 continental 157
 oceanic
 Balkan Peninsula 166
 transitional 13
see also Almpias Zone, oceanic crust generation
- cumulates, ultramafic
 Albanian ophiolites 269, 270, 271, 272–296
 geochemistry 276, 279, 281, 284
- Cycladic Blueschist Complex 449–450, 451
- Cyprus
 geology 358
 mid-Cretaceous ophiolites 20, 24–25, 30–31
see also Troodos ophiolite complex
- Cyprus Arc 613, 614
- Dalmatian-Herzegovina Composite terrane 159, 165
- Dead Sea Fault Zone 355, 581, 615, 616, 617, 629
- deformation
 and HP-LT metamorphism 458
 kinematics, Mesohellenic Trough 524–529
 synsedimentary, Hatay Graben 621–622
- Degne Member, Çameli Formation 594, 598
- Delchevo Formation 569, 571, 573, 578
- Derindere Member, Çameli Formation 594, 598
- Devolli ophiolite 269, 270, 271–272, 273, 287
- Devonian, Balkan Peninsula, terranes 161–162
- Dilek Peninsula 449–450, 451, 452
 Lycian Nappe klippen 452–453, 460
- Dinaridic ocean basin 159, 165, 169–170
 closure 169–170
- Dirmil fault 594, 595, 596, 600
- Dobrovo fault 677, 679, 680, 681–682
- Dotsikos strip ophiolite 249–250
- Drama-Prosotsani fault zone 656–659, 666
- Dramala complex 242–243, 244
 crustal section 248–249
 fabric analysis 254
 kinematic zones 251–252
 mantle section 246
- Drina-Ivanjica terrane 159, 164, 166–167, 170

- dunite, Pindos-Vourinos ophiolite 246, 247, 248, 249
dykes
 Albanian ophiolite 269
 Hatay ophiolite 354
 Kömürhan ophiolite 331
 Pindos-Vourinos ophiolite 246, 247, 248–249, 259, 260
 Troodos ophiolite 353
Dzherman detachment 562, 584, 680
- earthquakes
 Izmit 635–646
 northern Greece 649, 651, 666–667
 prediction 689–705
 geological observations 697, 699–704
 preshocks 689, 691, 692–693
 seismic strain model 692–697
 accelerating 692–693, 694
 decelerating 693–694
 southwest Bulgaria 671–672, 674
East Anatolian Fault Zone 577, 580, 613, 614, 615, 629
East Bosnian-Durmitor terrane 159, 164, 169
East Coast Magnetic anomaly 12, 14
East Serbian Carpatho-Balkanides 166, 167
Eastern Hellenides Platform 159, 161
Ecemiş Fault Zone 614, 615
Elazığ area
 geochemistry 333, 334–338, 339–341
 mineral chemistry 341–344
 petrography 331–333
 regional geology 328–331
 tectonic model 345, 346
Elazığ magmatic unit 328, 329, 331
Epirus area, convergent model 513–514
Eptahori Formation 512, 512, 523, 524, 524–526, 527, 528, 529, 530, 532, 534, 535
Eratosthenes Seamount 15, 203, 206, 207, 217, 220, 222
Eşen Çay Basin 592, 605, 607
Eskiköy Formation 414–415, 416, 417
Eurasia 91–92, 139, 160
 active margin evolution 413–440
 Black Sea-Caucasus terranes 179–181, 184, 194, 196
 Cretaceous 171
 Gondwana suture zone 92, 155, 159, 159
 see also Izmir-Ankara-Erzincan suture zone
 Maastrichtian-Paleocene 173
 Palaeozoic 161
evaporite, Messinian
 Hatay Graben 616, 620, 626
 Levantine Basin 204–205, 206, 213, 218–219
Evia 138, 139, 140, 141
exhumation, Vardar Zone 391–396, 406
extension
 late Cenozoic, southwest Bulgaria 557–586
 Neogene, southwest Anatolia 591–608
 Permian 19
 Permo-Triassic 148
- Faulting
 active
 northern Greece 649–668
 southwest Bulgaria 671–684
 earthquake prediction 697, 699–704
 Hatay Graben 621, 623–625
 Mesohellenic Trough 524–529
 seismogenic, Izmit 635–646
 southwest Anatolia 592–593, 597, 601, 602–603
 southwest Bulgaria 559–558, 559, 560–586
 low-angle normal 565, 573, 584–585
 Fethiye-Burdur Fault Zone 591, 592–594
 flysch 24
 Albania 542
 Balkan terrane 56–57, 61
 Epirus area 511
 Krania unit 398, 510
 Pindos 243, 244, 510–511
 Vai 127, 128, 131
 Variscan 58
 Fodele unit 105
fossils
 mammal
 late Cenozoic, Bulgaria 560, 565–566, 569, 575
 Neogene, Çameli Basin 594, 595, 596, 597, 601
 micro, Cenozoic, Hatay Graben 615, 617, 617, 619, 620
- gabbro
 Albanian ophiolites 268, 269, 270, 271, 273, 274, 277, 278, 280, 282
 geochemistry 281, 283, 289, 290
 MOR or SSZ 291–296
 Baër-Bassit ophiolite 355
 Hatay ophiolite 354
 Kömürhan ophiolite 331, 336–338, 341, 343, 344
Galicja Bank, peridotite ridge 13
garnet, chemistry, Cretan basement 73–74, 79–81, 85
Gavrovo-Tripolitza carbonate platform 134–138, 148, 471, 481–485
Gavrovo-Tripolitza zone 467, 468, 483, 493, 507, 508, 509, 511, 514
 deformation 484–485
geochronology, Serbo-Macedonian Massif 37, 40–42, 44, 45
geothermobarometry, clinopyroxene 283–284, 286–287, 289–290, 291
Global Palaeomagnetic Database 18
gneiss
 biotite 37
 granitic 135, 137
Göksun ophiolite 327, 344
Golitz fault 187
Gondwana
 Eurasia suture zone 92, 155, 159, 415
 northern margin 48
 in Palaeotethys tectonic models 91–93, 144, 379
 and pre-Alpine basement 48, 86–88
 separation of Pelagonian microcontinent 91–92, 93, 105, 139, 379
 terranes *see* terranes, Gondwana-derived
Gorno Spanchevo Fault 572, 573, 578, 584
Gotse Delchev basin 566, 574–575, 577
Gotse Delchev fault 575, 577
Gradevo-Predela fault 674, 677, 680, 682
Grande Kabylie 14, 15
graptolites, Balkan Terrane 56–57
Greater Caucasus back-arc basin 179, 183, 189, 190, 193, 194, 195
 deformation 191, 192
Greece, northern
 fault stress directions 652–653, 655–666

- fault-plane solutions 651–652
 geotectonics 650–651, 654
 seismicity 649, 651–652
 Greenland-western Europe margin 13, 14
 Guevgueli back-arc basin 187, 381, 391, 408
 gypsum
 Chamezi area 123
 see also evaporite, Messinian, Hatay Graben
- harzburgite
 Central Pontides 425
 SSZ ophiolites 268–269, 272, 273, 306, 307, 312–316
 Vourinos 246, 303
 see also ophiolites, harburgitic
- Hatay Graben 613, 614, 616, 623
 comparison with Tauride Mountains 626, 628–629
 fault kinematics 623–625, 626, 627, 628
 sedimentary evolution 613–619, 623–624
 synsedimentary deformation 621–622
 tectonic models 629–631
- Hatay ophiolite 352, 354–355, 615
 age 366
 palaeomagnetic studies 351, 353, 355, 357, 361–363, 364
 rotation 363, 364
 see also Kızıldağ ophiolite
- Hawasina basin 307, 308
 Heletz fault 215, 221
 Hellenic orogen 48
 Hellenic-Dinaric orogen, ophiolites 20, 22–24, 303–305, 315
 Hellenides 522
 External, orogenic model 507–518
 Internal 35, 36, 48
 Hercynian orogeny 92, 100, 144–146
 deformation and metamorphism 144–145
 Herodotus Basin 15, 19
 hotspots 11, 15
 Iceland 14
 Hun Terrane 48, 92
- Iberia 15
 see also Newfoundland-Iberia margin
 İkiçam Formation 415, 416, 417, 418, 420, 421, 422, 423
 Ionian zone 507, 508, 509–512, 514, 542
 Iraklion, Phyllite-Quartzite unit 119, 130
 Iran
 late-Triassic back-arc rifting 185, 188, 195
 mid-Jurassic deformation 189–191
- island arc
 Balkan Terrane 56, 157
 tholeiite 22, 23, 344, 345, 393
 Isparta Angle 591–592, 593
 Istanbul terrane 53
 correlation with Balkan Terrane 61
 origin 62–63
 palaeogeography 58–59
 stratigraphy 58, 60
 Izmir-Ankara suture zone 229, 233, 234, 457
 Izmir-Ankara-Erzincan suture zone 413–442, 414
 Izmir-Ankara-Sevan basin 185, 186, 187, 191, 192, 193, 194, 195–196
 Izmit earthquake 635–646
 fault segments 635–636, 637
 trenching sites 639–643
 ¹⁴C dating 643–646
- Jadar block terrane 159, 164, 167
 Jurassic
 Black Sea-Caucasus back-arc basins 185–193
 early, geology 21
 late, reconstruction 24
 mid, ophiolites 21–24
- Kadıkızı Formation 418, 420
 Kakopetria detachment fault 353, 358
 Kalavros crystalline complex 71, 81–82, 84, 87, 88
 garnet zonation 79–81
 microfabrics 78, 79
 structural evolution 77
 Kalimantsi Formation 565–569, 571, 572, 573, 578, 584
 Kalin granite pluton 560, 562
 Karadağ Formation 425, 426, 429, 428, 431
 Karakaya accretionary complex 181, 414
 Karaova Formation 450, 452, 453, 454, 456, 457–458, 459, 460
 Karasu Rift 613, 614
 Karayaprak Mélange 424, 430
 Katakaktis Passage Member 471, 494–495, 496, 497, 498, 499, 500
 palaeocurrents 470, 497, 501
 palaeogeography 501–502
 Kato-Loutraki Fault 378
 Kavala-Xanthi-Komotini fault zone 655, 656, 666, 667
 Kayaaltı Formation 450
 Kerdillion Unit 36, 37
 Kerkini fault zone 660–661, 666–667
 Kirazbaşı Mélange 418, 419–420, 423, 433
 Kırşehir fragment 14, 15, 19, 21, 184–185, 186
 Kızıldağ ophiolite 306, 312, 315, 354
 see also Hatay ophiolite
 Kızılırmak Ophiolite 415, 416, 417, 418, 420, 421, 422, 423
 klippen, Lycian Nappes 451, 452–454
 Klissochori unit 380, 393, 395, 396, 397, 401, 403
 Kocaeli basin 193
 Kömürhan ophiolite 327, 328, 329
 geochemistry 333, 334–335, 339–341, 342
 mineral chemistry 336–338, 341
 petrography 331–333
 Kopaonik block and ridge unit 159, 170–171
 Korab-Western Macedonian terrane 159
 Kraishite region 53, 57
 Krania Formation 233, 523, 524, 525
 Krania Unit 398–399, 400
 flysch 389, 510, 512, 533, 535
 Kresna fault 680, 682
 Kroupnik earthquake 565, 671–672, 674
 Kroupnik normal fault 565, 566, 567, 568, 577, 671–673, 674–675, 676, 678, 680
 Kučaj terrane 157, 164
 motion 163–164, 167
 Kumafşarı Member, Çameli Formation 594, 598
 Küre basin *see* Tauric back-arc basin
 Kyustendil normal fault 562, 577, 677, 678, 680, 681
- Levantine basin 15, 19, 201–223, 202
 crystalline basement 206–209
 depositional supersequences 204–205, 209–210, 211–214, 215–220
 Neotethyan rifting 220–222
 seismic stratigraphy 204–220

- structure 203
- Syrian Arc inversion 222–223
- tectonic evolution 220–223
 - models 203–204
- Iherzolite 246, 268–269, 272, 273, 312, 316–317
 - see also* ophiolites, Iherzolitic
- Ligurian Sea 22, 23–24, 311
- Liki-Margarita unit 393, 397, 403
- Limassol Forest Complex 353, 357, 359, 360, 361, 362
- limestone, 'Bellerophon-type' 167
- Liri unit 139, 140
- Livadia Unit 381
- Lycian Nappes 450
 - accretionary wedge geometry 460–462
 - Çameli Formation 594
 - geology 450, 452
 - HP-LT metamorphism 447–462
 - mineral chemistry 455–457
 - klippen 451, 452–454
- Lycian Ophiolitic Mélange 230–231, 450, 452, 458
 - Mesozoic radiolarites 229–234
- Lycian Thrust Sheets 230, 450, 452, 454
 - peridotite 231, 450, 458

- Maastrichtian-Cenozoic, Balkan Peninsula 158, 173–174
- Macedonia
 - Central, fault stress directions 659–662
 - Eastern, fault stress directions 653, 655–659
 - Western, fault stress directions 662–666
- Maden unit 328, 329
- magma generation, at subduction zones 315–316, 317
- magmatism
 - alkaline, Crete 109, 112, 118
 - Cadomian 59, 61
- magnesiocarpholite *see* carpholite, Fe-Mg
- magnetization 356–357
- Malatya-Keban metamorphic unit 328–329, 344, 346
- Malatya-Ovacik Fault Zone 577, 578, 580
- Mamonia Complex 354
- Mana unit 115–117, 118–119
- Mani unit 134–135
- mantle, Pindos-Vourinos ophiolite 246–248, 251
- mantle wedge 315–316
- marble
 - Dobrostan 569, 571, 574, 574
 - Mana unit 115–117, 118
 - Pirgadikia unit 39
 - Rhizarion 380–381
 - Vassilikon 130
- Maronia-Alexandroupolis fault zone 655, 656, 666
- Mavri Rakhi Formation 389, 391
- Mavrolakkos Unit 397, 398–399
- Mediterranean
 - earthquake prediction 694–705, 696, 697
 - seismicity 690, 691–692
- Meglenitsa ophiolite 398, 399, 405, 407, 408
- mélange 24
 - Avdella 240, 243, 244
 - Pelagonian Zone 383–384
 - Pirgadikia unit 37, 39
 - Vai area 125, 126, 127, 131
 - Vourinos 240, 384
- Melnik Fault 571–572, 578
- Menderes Massif 229–230, 233, 448
 - geology 449
 - HP-LT metamorphism 447–462
- Mesohellenic Trough 508, 509, 510, 521–536, 522, 523
 - deformation kinematics 524–529
 - geology 523–524
 - ophiolites 235–261
 - structural evolution 521–536, 529–536
 - tectonic events 526–529
- Mesovouni massif 250
- Mesozoic
 - early
 - back-arc basins, Black Sea-Caucasus 179–196
 - Tethyan tectonic models 93–148
 - radiolarites, Lycian Mélange 229–234
- Mesta River 557, 574, 574, 582
- metabasites 112–113, 135
- metamorphism
 - Almopias Zone 388, 403
 - Alpine, Crete 71, 112–113
 - east Arabian ophiolite 308
 - Hercynian 144–145
 - HP-LT
 - Crete 102, 112, 148
 - Lycian Nappes 447–462
 - deformation 458
 - mineral chemistry 455–457
 - Vardar zone 403, 406
 - Pelagonian Zone 388
 - pre-Alpine, Crete 69, 71, 81
 - Serbo-Macedonian Massif 36–38
- metaquartzite, mylonitic 38, 39, 42
- metaserpentine 135
- microdiamonds, Rhodope 11–12
- Mid-Atlantic Ridge 13, 23, 24
- Mirdita ophiolites 268–269, 542–543
- Mirdita-Pindos ophiolites 159, 165, 169–170, 238
- Moesian microplate 155, 157, 171
 - motion 161, 166, 173
- Moesian Terrane 53, 54–56
 - correlation with Zonguldak Terrane 61
 - Gondwanan affinities 56
 - origin 61–63
 - palaeogeography 55–56
 - stratigraphy 54–55
 - Triassic folding 185
- monazite, U-(Th)-Pb dating, Crete 69, 71, 76, 77, 81, 85
- Morava ophiolite 269, 270, 271, 287
- MORB 20, 21, 22, 23, 30, 303
 - Mirdita ophiolite 268–269, 291–296
 - Pindos ophiolite 239
 - Voras Massif 378
- Mouzaki area 514–515
- Myrsini crystalline complex 71, 81–85, 84, 87, 88
 - garnet zonation 79–81
 - microfabrics 78
 - Paraspori orthogneiss 76
 - structural evolution 77

- Nafpaktos area, convergence 513–514
- neotectonics 2, 3, 4
- Neotethys 105, 144, 170–171
 - biochronology, Mesozoic radiolarites 233–234
 - Cenozoic 102

- closure 102, 223
 Cretaceous 172, 327, 353
 definition 7–8
 Mesohellenic Trough, evolution 237, 239
 Mesozoic, Leventine Basin 201, 203
 Mesozoic subduction 230–231
 origin of ophiolites 11, 302
 palaeomagnetic studies 351–368
 rifting, early-Mesozoic, Levantine basin 220–222
 spreading 92, 93, 96, 107, 109, 351–368
 palaeomagnetic implications 364–366
 Newfoundland-Iberia margin 13, 14, 24, 29
 Nilüfer Plateau 21
 plumes 15
 Nission Fault 378, 399, 404
 North Anatolian Fault Zone 558, 577, 578, 579, 580–581, 614, 615
 Izmit earthquake 635–646, 636
 palaeoseismology 636–639
 North Dobrogea basin 183–184, 185, 193
 Northern Almopia fault zone 660
 Northern Pieria fault zone 662, 663, 666, 667
 Nurzeytin Formation 618, 617–618
- obduction 169, 317–319
 north Arabian ophiolites 306
 Ofrinio-Galipsos fault zone 658–659, 666
 Ograzhden Fault 573
 olivine
 Albanian ophiolite 272–273, 274, 275, 293
 Kömürhan ophiolite 332, 336, 341, 343, 344
 Oman, basin margin 308
 Ondria Formation 523, 524, 533
 ophiolites
 Albania 267–296, 304
 gabbro 269, 270, 271, 273, 274
 geochemistry 276, 279, 281
 geological setting 269–272
 MOR vs. SSZ origin 291–296
 tectonic setting 294–295
 ultramafic cumulates 269–296
 Anatolia 305, 327–346
 Apennine-Ligurian-Alpine 11, 21–22, 23, 28, 29–30
 Arabian
 east 307–308
 north 305–307
 Balkan Peninsula 165
 Cretaceous
 formation 309–312
 models 312–317
 internal structure 311–312
 late, palaeomagnetic studies 351–368
 mid 20, 24–5, 30
 Tethyan, emplacement 11–31
 developmental stages 309–319
 distribution 20
 harzburgitic 11, 246, 268–269, 273, 303–304, 306, 307, 312–316
 Hellenic-Dinaric 11, 22–24, 28, 30, 303–305, 315
 IAT 303, 305, 306, 312
 Jurassic, mid 21–24
 lherzolitic 246, 268–269, 273, 304, 312, 316–317
 MOR 291–296, 303, 316–317
- MORB 20, 21, 22, 23, 30, 239, 303, 312
 Mirdita 268–269, 291–296
 MOR and SSZ, Pindos 239
 obduction 317–319
 origin 302–303
 Othris 303–304
 Pelagonian Zone 383–392
 Pindos-Vourinos 237–263, 303–304, 406
 crustal section 248–249
 fabric analysis 254, 257
 kinematic zones 251–253
 mantle section 246–248, 251
 metalliferous zones 253–254
 original geometry 257–259
 slab heterogeneity 259–263
 spreading characteristics 249
 Pontides, Central 181–182
 supra-subduction zone 12
 Anatolia-Arabia 305–306, 307, 308
 developmental stages 309–319, 313
 Hellenic-Dinaric 22–23, 24–25, 30, 303–305
 Mirdita 268–269, 291–296
 Vourinos 239–241
 tectonization 317–319
- orthogneiss
 mylonitic, Pirgadikia unit 37–39, 42, 48
 radiogenic dating, Crete 69, 71, 74–76
 orthopyroxene 272, 273, 274, 277
 Kömürhan ophiolite 337, 343, 344
 Othris ophiolites 239, 242, 246, 303–304
- Padezh Basin 567, 585
 Paikon ridge 187
 Paikon Zone 373, 377, 378, 381, 395, 401, 405
 palaeocurrents, northwest Peloponnese 470, 471, 485, 495, 497, 501
 palaeomagnetism 16–18
 Black Sea-Caucasus 179
 and tectonic rotation 318, 351–368
 database 355–357
 Palaeotethys 16
 definition 7–8
 evidence in Balkan terranes 167
 evidence in Pelagonian zone 138–141, 378–379
 nomenclature 7, 93
 Tauric basin subduction zone 181, 182, 183, 193
 tectonic models 91–95, 94, 109, 130–142, 145, 144
 convergence related 92, 93, 95, 109, 131, 139, 144
 divergence related 91, 92–93, 95, 102, 107, 109, 119, 130, 138, 144
 counter-arguments 142–145
- Palaeozoic
 late-early Mesozoic, Tethyan tectonic models 93–148, 147
 terranes 51–63
 Balkan Peninsula 159, 164, 161–163
 Bulgaria 53, 54–57
 palaeogeography 55–56, 57
 northwest Turkey 53, 58–61
 palaeogeography 58–59
 palaeogeography 51, 52
 palynomorphs, Balkan Peninsula 172
 Pannonia 24
 Panthalassa 91

- Parnon window 516, 517, 519
- Pechenega-Camena fault 183–184, 193
- Pelagonia 14, 15, 21, 23
 - separation from Gondwana 91–92, 93
 - Triassic volcanism 19
 - see also* Apulia-Pelagonia suture
- Pelagonian Massif terrane 159, 493
- Pelagonian Zone 373–374, 376, 377, 406–408
 - carbonate platform 138–141, 380–381, 382, 383, 384
 - evidence for Palaeotethys model 138–141, 378–379
 - foreland basin 403, 404, 405
 - late Jurassic transgression 389, 393–396
 - metamorphism 388, 392, 393, 395
 - ophiolite emplacement 384, 388–389, 392, 406
 - ophiolitic mélange 383–384, 385, 386, 406
 - Palaeogene suturing 405–406, 510
 - passive margin subsidence 380, 399, 401
 - sea-level rise 401
 - subduction 24, 392, 403
 - Triassic rifting 378–379
- Peloponnese
 - convergent model 514–517
 - northwest 468, 469
 - Pindos Flysch Formation 470, 471, 493–504
 - Pindos Ocean evolution 467–487
 - succession 132–135
 - interpretation 136
 - tectonostratigraphy 132–134
- Penrose pseudostratigraphy 241, 306, 312, 353
- Pentalophos Formation 523, 524, 526, 528, 529, 531, 532, 534, 535
- Peonais Zone 373, 378, 381, 395, 405, 408
- peridotite *see* Lycian Thrust Sheets, peridotite
- Permian
 - Balkan Peninsula 161–163
 - extension 19
- Permo-Triassic
 - extension 148
 - reassembly 17–19
 - rifting, Vardar Ocean 378–380
 - succession, western Sicily 96–102, 97
- Peshkopia tectonic window 542, 544
- Petite Kabylie 14, 15
- Phyllite-Quartzite Unit 509
 - Crete 69, 70, 71, 72, 86, 88, 103, 105, 106
 - central 119, 129, 130
 - eastern 106, 119–132, 146
 - western 106, 108, 109–119
 - sediment chemistry 111, 112, 113
 - Peloponnese 132, 133, 134, 135, 137, 516–518
- Pietra di Salomone block 97, 99, 100
- Pindos Flysch Formation 493–504, 510–511
 - palaeocurrents 470, 471, 497, 501
 - palaeogeography 499, 501–502, 503
 - petrology 502
 - stratigraphy 494–495
 - tectonics 502–504
- Pindos Group sediments 468–469, 470, 471
- Pindos Mountains 237, 238, 467
- Pindos Ocean 23, 109, 137, 139, 147, 148, 237, 507
 - accretionary processes 479, 481
 - continent-ocean transition zone 471–474, 485
 - evolution 467–487
 - foreland 481–485
 - passive margin 468–469, 471, 481
 - regional evidence 485–487
 - thrust sheets 471–481
- Pindos ophiolite 238, 239, 241–243, 241, 244, 245, 259–263, 303–304, 485
 - crustal section 248–249
 - fabric analysis 254, 257
 - mantle section 246–248, 251
 - metalliferous zone 254
 - original geometry 258, 259
 - slow spreading 249
- Pindos suture 468, 485
- Pindos thrust sheets 471–481, 482
 - basalt 472–474
 - Central Imbricates 476, 477
 - Eastern Imbricates 476, 478, 479
 - Frontal Imbricates 475, 476, 4797
 - genesis and emplacement 474–481
- Pindos unit 70, 103, 104
- Pindos zone 467, 468, 493, 507, 509, 514, 517
 - evidence for Palaeotethys model 138
- Pirgadikia Unit
 - geochemistry 40
 - geochronology 40–42, 43, 44, 45, 46
 - geology 37–39
 - metaquartzite 38
 - mylonitic orthogneiss 37–39, 48
 - shear 37–39
 - Sr-isotope ratios 45, 47–48
- Pirin massif 557, 569, 573
- plagioclase 273, 276, 282
 - Kömürhan ophiolite 336, 341, 343
- plate margins, late Jurassic 24
- platforms, carbonate 100, 148
 - Crete 103, 107
 - Pelagonian zone 380–381, 382, 383, 384
 - see also* Gavrovo-Tripolitza carbonate platform; Pelagonian zone, carbonate platform
- Plattenkalk Unit
 - Crete 70, 72, 102, 104–107, 144, 148, 507
 - Peloponnese 132, 133, 134–135, 144, 507, 514–515
- plug, uplifted 509, 510, 512, 514, 515–517
- plumes 11, 14
 - Nilüfer Plateau 15
- Podgorie Fault 573, 577
- Pontides 179, 181, 183, 192, 195
 - Central 416–422, 420
 - comparison with Eastern Pontides 433–435
 - geochemistry 420–421, 422, 423 424, 425
 - Eastern 423–431, 428, 429
 - comparison with Central Pontides 433–435
 - geochemistry 424, 425, 431–433, 432
 - IAESZ 413–442, 414
 - structural vergence 433, 433
 - tectonic evolution 433–441
 - models 438–441, 439, 440
- Predela Fault 574, 577
 - see also* Gradevo-Predela fault
- pro-wedge 509, 510–512, 510, 514, 517
- Püttürge metamorphic unit 328, 329
- pyroxene, Pindos-Vourinos ophiolite 248, 251
- radiolarites
 - Almopias Zone 398
 - Mesozoic, Lycian Ophiolitic Mélange 229–234

- Ranovac-Vlasina terrane 157
 motion 166, 166
- Ravdoucha unit 103, 148
- Razlog basin 566, 574–575, 578
- reconstruction
 Africa-Europe continental fragments 15–21
 continental fragments, early Triassic 17–19
 tectonic 7
- Refahiye Complex 424, 425, 426, 429, 428, 429, 429
- Rehove ophiolite 269, 270, 271
- retro-wedge 509–510, 514
- Rhodope 14, 15
 microdiamonds 11–12
- Rhodope Massif 36, 36, 48, 157
 back-arc basin 181, 183, 185, 187
- rift-settings
 counter-arguments 142–144
 evidence from Crete 107, 108, 117–119, 128–130
 evidence from Pelagonian zone 141
 evidence from Peloponnese 136, 137
- rifting
 late-Palaeozoic, Crete 105, 107, 109, 118–119, 130
 late-Triassic, Crete 108
 Neotethyan, Levant basin 220–222
 Permo-Triassic
 Pelagonian and Vardar Zones 378–380
 Sicily 102
see also extension
- Rila massif 557, 560
- Rila normal fault 562–563, 564, 577
- Rilska River 562, 675
 gorge 563, 564, 565
- roll-back 23, 24, 315
- rotation, tectonic
 Balkan Peninsula 173–174
 palaeomagnetic studies 351–368
 Troodos microplate 367–368
- rutile, U-PB dating, Crete 71, 75, 76, 84
- Samandağ Formation 620
- Sana-Una-Banija-Kordun terrane 159, 167
- Sandanski Basin 565, 566, 568, 569, 570, 571, 577, 583–584
- Sandanski Formation 571, 572, 573, 578
- Saparevo normal fault 560, 561, 562, 577, 675, 676, 678, 680–681, 680
- Sardinia 14, 15
- Sarıkavak-Kumafşarı Fault Zone 597, 598–600, 599
- Scythian platform 183, 190
 volcanism 188–189
- sea-level rise, Vardar Zone 401
- sediment
 Cenozoic, Hatay Graben 615–623
 Permo-Triassic, western Sicily 96–102, 146
- seismicity, Mediterranean 690, 691–692
- Selçuk Formation 449–450
- Semail ophiolite 307, 308–309, 312, 315, 317–318
- Serbian-Macedonian Composite terrane 157, 166, 379
- Serbo-Macedonian Massif 35–48, 36, 187
 geology 37–39
- Serbo-Macedonian Zone, Triassic rifting 378
- Serres-Nea Zichni fault zone 657–658, 666
- Shatsky rise 179, 181, 183, 190, 191, 192
- shear, Pirgadiikia Unit 37–39
- Sheeted Dyke Complex 353, 358, 359, 360
- Shipka, Palaeozoic succession 53, 57
- Shpati ophiolite 269, 270, 271–272, 273, 287, 289
- Sicilian basin 96, 148
- Sicily, western
 Permo-Triassic succession 96–102, 97
 interpretation 100–102, 148
- Simitli Basin 565–566, 567, 568–569
- Sipikör Formation 429, 429, 428, 433
- Sisses unit 105, 107
- Sochos-Mavrouda fault zone 660
- Sofular Formation 617–619
- sole, metamorphic 24, 317–318, 333, 338, 339, 342
 Baër-Bassit ophiolite 354–355
 Hellenic-Dinaric ophiolite 22–23, 304
 Zagros ophiolite 307–308
- Solea Graben 357, 358, 359
- Soulopoulo backthrust 512
- South Troodos Transform Fault Zone 353, 357, 359–361, 362
- Southern Mygdonia fault system 661
- spinel 272, 273, 274, 276, 280, 281, 293, 424, 425
- spreading
 Pindos-Vourinos ophiolite 249
 sea-floor 309, 310, 311–312
 Atlantic Ocean 11, 12–15, 21, 24
- Stara Planina-Poreč terrane 157, 164
 motion 166, 163
- Stob fault 675, 676, 678
- Stobski Piramidi 560, 562, 564, 675
- strain, seismic, model 691, 692–694
- Strandzhides, Palaeozoic succession 53, 57
- Stratoni fault 659
- Strouma Lineament 683
- Strouma River 557, 562, 565, 568, 571–572, 573, 582
 active faults 671–672, 674, 676, 677, 682
- subduction 313–317
 Almopias Zone 403
 Alpine 71, 85–86
 at convergent plate margins 509–518, 510
 Mesozoic Tauric basin 181, 182, 185, 191, 192, 193
 pre-Alpine 86, 87, 88
 southward
 late-Palaeozoic 86–88, 92–93, 95, 144, 168, 379
 Triassic 137, 138
 Vardar Ocean 167, 168, 170, 172, 187
see also ophiolites, supra-subduction zone
- superplume, mid-Cretaceous 11
- supersequences, depositional, Levantine basin 204–205, 209–210, 211–214, 215–220
- Sütçinar Formation 425, 429, 429, 428
- sutures 3, 155
 Gondwana-Eurasia 92, 155, 159
 Vardar zone 405–406
- Svanetia basin 183
- Svoula Flysch 378, 381
- Svoula Schist Formation 38, 39
- Syria, mid-Cretaceous ophiolites 20, 30–31
- Syrian Arc inversion, Levantine basin 222–223
- Talea Ori unit 102, 104–107, 144
- Tauric back-arc basin 179, 181–185, 187–188, 190, 191, 192, 193–196
- Taxiarhis, metaquartzite 38, 39
 zircon dating 40–41, 42

- Taygetos window 514, 515, 517
- terrane accretion, Balkan Peninsula 155
- terranes
- Balkan Peninsula **156–158**, 157, 159, 162
 - see also Balkan Terrane
 - Eurasian margin, Black Sea-Caucasus 180–181
 - Gondwana-derived 48, 51–63, 56, 167, 181, 184, 185, 379–380, 493
- Tethys
- closure 157, 591
 - models 1, 2
 - nomenclature 7–8, 93
 - remnants in Balkan Peninsula 155, 167
 - see also Palaeotethys
- thermochronology, fission-track, Albania 544–550
- tholeiite, island arc 22, 23, 239, 304, 339, 344, 345, 383
- Thrace, fault stress directions 653, 655–659
- Transcaucasian massif 181, 183, 193
- Triassic
- Black Sea-Caucasus back-arc basins 181–185
 - early, reassembly 17–19
 - late, geology 21
 - western Crete
 - inverted succession 113–114
 - right-way up succession 115–117
- Tripali unit 102, 106, 107–109
- Tripolitza Unit 70, 72, 102, 103–104, 128, 148
- troctolite 269, 273
- geochemistry 281, 293
- Troodos ophiolite complex 12, 306–307, 312, 315, 317–318, 352
- age 366
 - geology 353–354
 - palaeomagnetic studies 351, 355, 357–361, 363, 366–368
 - rotation 357–361
 - South Troodos Transform Fault Zone 353, 357, 359–361, 362
- Tsotyli Formation 523, 524–526, 528, 529, 530, 531, 532, 533
- tufa, Çameli Basin 597–598, 599, 601
- Turkey
- Cenozoic, Hatay Graben evolution 613–632
 - late-Cretaceous ophiolite 327–346
 - mid-Cretaceous ophiolite 20, 24, 30–31, 305
 - Palaeozoic terranes 53, 58–63
 - Permo-Triassic reassembly 18–19
 - western, Lycian Belt HP-LT rocks 447–462
- Tyrnyauz-Pshekish fault 189, 190
- Tyros unit 103, 134, 136–137, 148
- uplift, southwest Bulgaria 581–584
- Uzunoluk-Çameli Fault Zone 599, 600, 601
- Vai crystalline complex 81, **84**, 85, 87, 88, 119
- orthogneiss 69, 71, 74–76
 - Phyllite-Quartzite unit 123–128
 - structural evolution 78
- Valais Ocean 29
- Vallamara ophiolite 270, 271–272
- Vardar Ocean 159, 165, 167, 374–375, 378, 485–486
- closure 48, 170–171, 408
 - Main Vardar ophiolitic Belt 159, 165
 - subduction 167, 168, 170, 172, 187
 - western margin, evolution 373–408, 407
- Vardar Zone 37, 159, 162, 373, 375, 378–379
- exhumation 391–396, 406
 - Jurassic subduction 381
 - late-Jurassic-early Cretaceous transgression 393–396
 - oceanic crust 380–381, 398–399
 - passive margin subsidence 380–381, 399, 401
 - Permo-Triassic rifting 378
 - sea-level rise 401
 - Western oceanic basin 165, 167, 171, 172, 173
- Variscan Orogenic Belt 51–52, 63
- Vatolakkos section 250
- Vegoritiss-Ptolemais fault system 664–665, 666, 667
- Vertikos Unit 36, 37, 38–39
- augengneiss, biotite 37, 39–40, 48
 - Sr-isotope ratios 45, 47–48
 - zircon dating 42, 43, **44**, 45, **46**, 47
- volcanism
- late-Jurassic, Almopias unit 398
 - mid-Jurassic, Sicily 102
 - Triassic 19, 121, 122, 136–137, 169
 - Scythian Platform 188–189
- Voras Massif 374, 376, 378, 381, 403
- Voskopoja ophiolite 269, 270, 271, 287
- Vourinos SSZ ophiolite 237, 238, 239–241, 241, 242, 259–263, 303–304, 383, 388
- crustal section 248
 - fabric analysis 254–257
 - fast spreading 249
 - mantle section 246, 248, 251
 - metalliferous zone 253–254
 - original geometry 257–259
- Vourvourou fault 660
- West Crimea fault 183–184
- West Pirin Fault 571, 578
- Yapraklı Formation 415, 416, 418, 419
- Yaylaçayı Formation 415, 416, 418–419, 420, 421, **422**, 423
- Yüksekova complex 328, 329
- Zagros ophiolite belt 307–308
- zircon
- fission-track dating
 - Albanides 544–545, 547, 549, 550, 553, 554
 - Crete 69, 71, 76, 85, 86
 - Pb-Pb dating, Serbo-Macedonian Massif 40–42, 43, **44**, 45, **46**
 - U-Pb dating, Vai orthogneiss, Crete 69–70, 71, 74–76, 81
- Zonguldak Terrane 53
- correlation with Moesian Terrane 61
 - origin 61–63
 - palaeogeography 59, 61
 - stratigraphy 59, 60
- Zygosti ophiolite 250–251