

## INDEX TO VOLUME 125

This index provides coverage for both the *Initial Reports* and *Scientific Results* portions of Volume 125 of the *Proceedings of the Ocean Drilling Program*. References to page numbers in the *Initial Reports* are preceded by "A" with a colon (A:), and those in the *Scientific Results* (this book), by "B" with a colon (B :).

The index was prepared by Wm. J. Richardson Associates, Inc., under subcontract to the Ocean Drilling Program. The index contains two hierarchies of entries: (1) a main entry, defined as a keyword or concept followed by a reference to the page on which that word or concept appears, and (2) a subentry, defined as a further elaboration on the main entry followed by a page reference.

The index is presented in two parts: (1) a Subject Index and (2) a Taxonomic Index. Both parts cover text figures and tables but not core-description forms ("barrel sheets") or core photographs. Also excluded are bibliographic references, names of individuals, and routine front and back matter.

The Subject Index follows a standard format. Geographic, geologic, and other terms are referenced only if they are subjects of discussion. This index also includes taxonomic entries above the generic level, as well as broad fossil groups such as foraminifers and radiolarians. The notation "ff" following a page listing indicates that reference to a topic continues beyond the last page given but is not sequential. This would be the case where one or more figures or tables follow a principal topic of discussion that makes up a major section. A site chapter in the *Initial Reports* is considered the principal reference for that site and is indicated on the first line of the site's listing in the index. Such a reference to Site 778, for example, is given as "Site 778, A:97-114."

The Taxonomic Index is an index relating to significant findings and/or substantive discussions, not of species names *per se*. This index covers three varieties of information: (1) individual genera and species that have been erected or emended formally, (2) biostratigraphic zones, and (3) fossils depicted in illustrations. A taxonomic entry consisting of both genus and species is listed alphabetically by genus and also by species. Biostratigraphic zones are listed alphabetically by genus; zones with letter prefixes are listed under "zones."

For further information, including available electronic formats, contact the Chief Production Editor, Ocean Drilling Program, 1000 Discovery Drive, College Station, Texas 77845-9547, U.S.A.

## SUBJECT INDEX

- accretion  
   Izu-Bonin forearc, A:81  
   Mariana forearc, B:407-408  
 accretionary complex  
   hydration, B:9  
   Izu-Bonin-Mariana region, B:3  
 accretionary prism, subduction zones, B:373  
 accretionary wedge, fluid-flow element transfer, A:11-12  
 acetate  
   Conical Seamount, B:388, 390, 394-395  
   Torishima Forearc Seamount, B:388  
 actinolite, Torishima Forearc Seamount, B:421, 427-428  
 Agrigan Island, LIL elements, B:303  
 albite, Site 778, B:420, 424  
 aliphatic acid anions, organic precursors, B:387-389  
 alkalinity  
   chloride uptake and, B:381  
   serpentinization vs. sodium effects, A:284-285  
   Site 779, A: 126  
   Site 780, A:158, 161  
   Site 781, A:186-187  
   Site 784, A:281, 284  
   Site 786, A:328-329  
 Alps, French-Italian, Chenaillet Jurassic ophiolites, B:333  
 alteration  
   geochemical effects, B:222-223, 246, 490-491  
   mineralogical effects, B:150  
   serpentine muds, B:355, 600  
   volcanic glass, B:137  
 aluminum  
   in boninite, B:637, 641  
   logging data, B:665-666  
   negative chromium-nickel correlation, B:336-337, 340  
   Site 786, B:122, 124  
 aluminum oxide  
   ash layers, B:279  
   depletion during partial melting, B:647  
   in serpentine sediments, B:334  
   vs. calcium oxide, A:186, 281  
   vs. magnesium oxide, A:328  
 aluminum oxide/silica ratio, in ash sequences, B:287  
 aluminum oxide/titanium dioxide ratio, Mariana forearc, B:409  
 Alutom Formation, Mariana forearc, A:6  
 ammonia  
   chloride uptake and, B:381  
   Conical Seamount, B:384  
   serpentinization vs. sodium effects, A:284-285  
   Site 779, A:126  
   Site 780, A:158, 161  
   Site 786, A:328-329  
 ammonia/pH ratio, in platinum-palladium fluids, B:511, 514-515  
 amphibole  
   in boninite, B:257-258, 643-644  
   chemical composition, B:421  
   chromatographic fractionation, B:643-644  
   crystallization, B:528  
   formation, B:182  
   in groundmass, B:187  
   Mariana forearc, B:408  
   in peridotite, B:230-232, 523, 527  
   petrography, B:173  
   in serpentine mud, B:605  
   Site 778, B:417-418, 423  
   Site 779, B:358  
   in ultramafic rock, B:437  
 amphibolite  
   melting, B:231, 258, 658-659  
   stable isotopes, B:500  
 andesite. *See also* bronzite andesite  
   alteration effects, B:222-223  
   amphibole in, B:187  
   ductile shearing, A:331  
   groundmass, A:205  
   lithological occurrence, B:166  
   mafic phenocrysts, B:182  
   magnesium numbers, B:196  
   mineralogy, B:194  
   petrography, B:180, 239  
   potassium alteration, B:153, 164  
   shallow-level processes, B:227  
   Site 782, B:258  
   Site 786, A:321, 323, 325-326; B:268  
   stable isotopes, B:259  
   strontium isotopes, B:256  
   trace elements, B:222  
   water content and phase equilibria, B:186-187  
   zirconium/strontium ratio, B:223  
 andesite, boninitic, B:186-187, 200  
   rock-water phase diagram, B:200  
 andesite breccia, Site 786, A:323-324, 326, B:267  
 andesite clasts, alteration, B:268  
 annealing, B:528-529  
 antigorite  
   formation temperature, B:439  
   in serpentine deposits, B:361  
   Site 778, B:355  
   Site 779, B:358  
   in ultramafic rock, B:436  
 aragonite  
   in chimney structures, B:355  
   Conical Seamount, A:281  
   fluid upflow and, B:602  
   Mariana forearc seamounts, A:71  
   precipitation, B:376-377  
   in serpentine sediments, A:152; B:332-333, 340, 347, 603  
   serpentine-associated, B:399  
   Site 778, A:101; B:344, 416, 418-419  
   Site 779, A:119  
   Site 784, A:281  
   stable isotopes, A:12, 75  
   in ultramafic rock, B:437  
   vs. strontium, B:336, 398-399  
 aragonite compensation depth, Site 778, B:344  
 arc, intraoceanic, formation, B:3  
 arc-basin systems, tectonic evolution, A:5  
 arc volcanism  
   Mariana forearc, B:595  
   models, A:198  
   tectonic effects on, A:10-11  
 Archaeoan ophiolites, tonalitic-trondhjemitic intrusions, B:258  
 aromatic compounds, in chimney structures, B:376  
 artinite, Site 778, B:355  
 ash, vitric  
   definition, B:675  
   Site 783, B:680  
   Site 786, A:316  
 ash layers  
   age, composition and, B:281-282  
   faulting, A:330  
   geochemistry, B:124, 156  
   magnetic logs, A:220-221  
   major-element geochemistry, B:279-292  
   mantle sources, B:157  
   Miocene-Holocene, B:620  
   oxide variations, B:287-292  
   petrography, B:279  
   Site 782, A:202  
   Site 783, A:255  
   Site 784, A:275-276  
 asthenospheric melt, B:500  
 Atlantic fracture zones, hydrogrossular, B:333  
 Atlantic Ocean C, transform-to-transpression changes, B:630  
 augite  
   in boninite, B:178-179  
   in bronzite andesites, B:180  
   Site 786, B:172  
 backarc basin basalt (BABB), carbon dioxide and water content, B:138  
 backarc spreading  
   arc volcanism and, A:10-11, 198  
   initiation, A:5; B:3  
 bacterial mat  
   Conical Seamount, B:600  
   Site 780, B:349  
 Barbados Ridge N, chlorinity, B:382  
 barium  
   Site 784, A:280-281  
   Site 786, B:223  
 basalt. *See also* ocean island basalt  
   age, B:296-297  
   analytical methods, B:297-299  
   forearc, A:7  
   geochemistry, B:302-304  
   glassy chilled margin, A:183  
   magnetic properties, A:189  
   mineralogy, B:299-302  
   origin, A:195  
   petrography, A:183-184; B:299  
   seismic reflection profiling, A:43-44  
   Site 782, A:202  
   stable isotopes, B:304  
 basalt, glassy aphyric, Site 786, A:324-325  
 basalt, iron-titanium, formation, B:406  
 basalt, massive, Site 781, A:373  
 basalt, phyric, Site 786, A:326  
 basalt, porphyritic, Site 781, A:181  
 basalt pebbles, Site 781, A: 183  
 basement  
   age, B:131, 145, 173, 208, 237  
   composition, A:6-10  
   deformation, B:529  
   geochemistry, B:408  
   igneous units 1-30, A:320-327  
   igneous units 1-34, B:146-149  
   Izu-Bonin forearc, A:367; B:5ff  
   lithology, A:6-10  
   lithostratigraphy, B:203-204, 211-213  
   logging data, A:217, 220, 335  
   magnetic properties, A:212  
   Mariana forearc, A:367; B:5ff  
   multichannel seismic surveys, A:199  
   present-day configuration, B:624  
   seismic reflection profiling, B:8, 586  
   Site 786, A:339, 375, 377-378  
   stratigraphy, B:131, 173  
   structural model, B:275  
 beidellite  
   Site 782, B:120

- Site 786, B:124  
 beidellite, magnesium-, Site 786, B:124  
 blueschist facies  
   metamorphosed, B:606  
   serpentine seamounts, B:426  
 Bonin arc, system construction, B:156-157  
 Bonin Islands, clockwise rotation, B:8, 629  
 Bonin Trough, rifting event, B:156  
 boninite  
   in ash layers, B:286  
   crystallization sequence, B:182-183, 198  
   fractionation, B:152  
   geochemistry, B:150, 240-241, 636-637  
   Izu-Bonin Islands, A:8, 199  
   lithological occurrence, B:166  
   mafic phenocrysts, B:182  
   magnesium numbers, B:197  
   mantle source, B:156, 500, 641, 637-641  
   mineralogy, B:632  
   olivine-pyroxene fractionation, B:632  
   olivine stability field, B:183, 185  
   Pacific MORB mantle component, B:639-640  
   pelagic component, B:652  
   petrology, B:630-632  
   primary compositions, B:640  
   Site 786, A:321, 325; B:162  
   in SSZ ophiolites, B:8  
   stable isotopes, B:246-260, 633  
   subduction component, B:229, 643-645  
   trace elements, B:229, 232, 632-633, 641-642  
   two-component mixing, B:250, 252-253, 255  
   vs. spatially related peridotite, B:501, 504  
   water saturation, B:137-138  
 boninite, high-calcium  
   crystallization temperature, B:645  
   distribution, B:631  
   Izu-Bonin-Mariana region, B:154  
   petrography, B:178-179, 185-186  
   rifting correlation, B:156  
   rock-water phase diagram, B:199  
 boninite, intermediate-calcium  
   alteration effects, B:222-223  
   crystallization temperature, B:645  
   distribution, B:631  
   mantle source, B:637  
   mineralogy, B:185-187  
   petrography, B:238-239  
   shallow-level processes, B:226-227  
   Site 786, B:178  
   trace elements, B:217  
   zirconium/strontium ratio, B:223  
 boninite, low-calcium  
   crystallization temperature, B:645  
   distribution, B:631  
   Izu-Bonin-Mariana region, B:155  
   mantle source, B:637  
   mineral zonation, B:187  
   mineralogy, B:177-178, 184  
   neodymium isotopes, B:255  
   petrography, B:173, 238  
   rock-water phase diagram, B:199  
   shallow-level processes, B:225-226  
   Site 786, B:154  
   trace elements, B:213  
 boninite genesis  
   melting, B:645-647  
   models, B:623-624, 647  
   post-subduction, B:648-650  
   regional variation, B:650-652  
   by slab melting in amphibolite facies, B:644-645  
   subduction, B:641-643, 649-650  
 boudinage, Conical Seamount, B:416  
 breccia. *See also* andesite breccia; bronzite andesite; hyaloclastite breccia; microbreccia  
   argillitized and mineralized, A:331  
   Site 778, A:100-101  
   Site 786, A:317, 321; B:264-265  
   trace elements, B:681-682  
 breccia, monomictic, Site 786, B:146-147  
 breccia, oligomictic, Site 786, A:321, 326  
 breccia, pillow, Site 786, B:265  
 breccia, polymictic  
   Site 786, A:326; B:146-147, 266-268  
   sources, B:148  
 breccia, pyroclastic, Site 786, B:268-269  
 breccia, serpentine, B:612  
   Site 778, A:101, 110; B:328, 344  
   Site 779, A:137  
 brecciation, Site 779, A 128  
 bromide  
   pore water, B:379  
   Site 779, A:127  
   Site 780, A:159, 161  
   Site 784, A:284  
   Torishima Seamount, B:381  
 bronzite andesite  
   alteration, B:268  
   breccia, B:264, 268  
   evolution, B:188  
   geochemistry, B:150  
   lithological occurrence, B:166  
   mafic phenocrysts, B:182  
   magnesium numbers, B:197  
   mineralogy, B:177-178, 632  
   petrography, B:173  
   Site 786, B:154-155, 264, 268  
   stable isotopes, B:249-250  
 bronzite andesite, intermediate-calcium  
   mineralogy, B:190-193  
   shallow-level processes, B:226-227  
   Site 786, B:179-180  
   trace elements, B:217  
 bronzite andesite, low-calcium  
   mineralogy, B:184  
   shallow-level processes, B:225-226  
   trace elements, B:213, 217, 222  
 brucite  
   iron oxide content, B:317  
   serpentinization temperature, B:440-441  
   in ultramafic rock, B:436-437  
 Brunhes Chronozone  
   Site 782, B:548  
   Site 783, A:265; B:551  
   Site 784, B:551  
 calcite, Site 778, B:333  
 calcium  
   Site 779, A:126  
   Site 780, A:159  
   Site 782, A:211; B:120  
   Site 784, A:284  
 calcium carbonate  
   logging data, B:669  
   Site 778, A:105  
   Site 779, A:127  
   Site 781, A:187  
   Site 782, A:208, 212  
   Site 783, A:258-259  
   Site 784, A:281  
   Site 785, A:310  
 calcium oxide  
   in boninite, B:229  
   depletion during partial melting, B:647  
   in serpentine sediments, B:334  
   vs. aluminum oxide, A:186  
 calcium oxide/aluminum oxide ratio, vs. titanium, B:641  
 calcium oxide/magnesium oxide ratio, Site 786, B:151  
 calcium oxide/silica ratio  
   in ash sequences, B:288  
   Site 786, B:149-150  
 calcium/strontium ratio, aragonite correlation, B:332-333  
 California Coast Ranges, phacoidal serpentine, B:363  
 Cam clay ideal model, B:369  
 canyons, submarine, Izu-Bonin forearc basin, A:6  
 Cape Vogel, low-calcium boninite, B:155  
 carbon, inorganic  
   Site 784, A:281-283  
   Site 785, A:310  
   Site 786, A:332  
 carbon, organic  
   Site 778, A:105  
   Site 779, A:125  
   Site 780, A:157  
   Site 781, A:187  
   Site 782, A:208  
   Site 783, A:258-259  
   Site 784, A:281-283  
   Site 785, A:310  
   Site 786, A:328, 332  
   thermogenic origin, B:376  
 carbon, total  
   Site 779, A:126  
   Site 780, A:156  
   Site 781, A:186-187  
   Site 782, A:209-212  
   Site 784, A:281-284  
   Site 785, A:310  
   Site 786, A:332  
 carbon, total organic  
   Site 779, A:126  
   Site 780, A:156  
   Site 781, A:186  
   Site 782, A:209-212  
   Site 784, A:284  
 carbon isotopes, vent fluids, A:75  
 carbonate  
   Conical Seamount, B:398  
   in serpentine muds, A:72  
   X-ray diffraction pattern, B:316  
 carbonate carbon  
   Site 779, A:126  
   Site 780, A:156  
   Site 781, A:187  
   Site 782, A:209-211  
   Site 784, A:282-284  
   Site 785, A:310  
   Site 786, A:332  
 carbonate cement, Site 786, A:316  
 cerium  
   mafic rocks, B:406  
   negative anomaly, B:121, 128-130  
   Site 784, A:280-281  
 cerium/ytterbium ratio, Site 786, B:230  
 cerium/zirconium ratio, neodymium isotope co-variation, B:255  
 chalk, nannofossil, Site 782, A:202  
 Chichijima  
   amphibole, B:187  
   boninite, B:162, 171, 259-260, 624, 650, 652-653  
   boninite-andesite-dacite sandstone, B:266  
   boninite-dacite, B:208  
   dikes, B:145-146  
   igneous geochemistry, B:154-157, 162

- lava, B:630  
lead isotopes, B:259  
Marubewan Formation, B:208  
oxidized clasts, B:148-149  
rare earth elements, B:232-233  
tuffaceous sediments, B:208
- chimney, carbonate  
Conical Seamount, A:72  
geochemistry, A:12; B:595  
stable isotopes, A:77  
vent fluids, A:75
- chimney, silicate, Conical Seamount, A:72-73
- chimney structure  
aragonite-bearing, B:355  
Conical Seamount, B:8, 375-376  
vent fluids, A:148
- chloride  
fluid uptake and depletion of, B:602-603  
iowaite and, B:317, 319, 358-359  
seawater-rock interaction and uptake of, A:160-162  
solid phase, B:378, 381  
uptake during serpentinization, B:377-381
- chloride/pH ratio, in platinum-palladium fluids, B:511-513, 518
- chloride/silica ratio, in ash sequences, B:289
- chlorinity  
hydrocarbon maxima and, B:383-384  
interstitial waters, A:160-163  
negative charge, B:381  
pore water, B:377-384  
Site 778, A:110-111  
Site 779, A:127  
Site 781, A:190  
Site 783, A:260  
Site 784, A:284  
Site 786, A:329, 368-369  
subduction zones, B:373  
Torishima Seamount, B:381  
vs. seawater, A:159-160
- chlorite  
Conical Seamount, B:419  
in iowaite, B:315  
in serpentine sediments, B:332  
Site 778, B:424  
Site 779, B:425  
Site 786, A:318  
Torishima Forearc Seamount, B:423, 427-428  
in ultramafic rock, B:437
- chromium  
melting trends, B:227-228  
in serpentine sediments, B:336, 340  
Site 778, A:104  
Site 779, A:122-123  
Site 780, A:155  
Site 781, A:186  
Site 783, A:258  
Site 784, A:280  
Site 786, A:327, 329
- chrysotile  
decomposition, B:317  
formation temperature, B:439  
in serpentine deposits, B:355, 358, 361  
in serpentinite muds, B:323  
Site 778, B:354  
X-ray diffraction pattern, B:315
- clasts, in serpentine, A:199; B:599
- clasts, igneous, in serpentine matrix, A:119
- clasts, mafic  
metamorphosis, A:110  
petrology, A:102
- clasts, metamorphic, in serpentine matrix, A:119
- clasts, oxidized  
Chichijima, B:148-149  
Site 786, B:148
- clasts, ultramafic, petrology, A:102, 110, 300
- clay, Site 779, B:604
- clay, serpentine  
Site 778, A:101  
Site 779, A:117-119; B:348  
Site 780, B:349
- clay, silty  
deformation, A:285  
Site 784, A:275-276
- clay, vitric  
platinum-palladium content, B:510-511  
Site 781, A:180, 182
- claystone  
deformation, A:300, 375  
Site 784, A:275-276; B:352, 354
- claystone, vitric, Site 786, A:316
- claystone-serpentine transition  
geochemistry, A:281, 284  
interstitial-water chemistry, A:300  
pore-water composition, A:259-260
- cleavage, anastomosing, Conical Seamount, B:347, 349, 605
- cleavage, helicoidal, Site 779, A:135
- cleavage planes  
in serpentine sediments, A:133  
Site 778, A:106-107  
Site 779, A:127
- clinoenstatite, Site 786, B:172, 177
- clinoptilolite, B:118
- clinopyroxene, B:118  
mineral chemistry, B:299  
in peridotite, B:500, 522-523  
petrography, B:172  
rare earth elements, B:638  
Site 779, B:526  
Site 786, B:179-180  
trace elements, B:492-493, 495-498  
in ultramafic clasts, A:102  
in ultramafic rock, B:436  
zirconium/titanium ratio, B:643
- coalingite  
Site 778, B:355  
in ultramafic rock, B:438
- color banding, serpentine sediments, A:261
- Conical Seamount  
alteration and metamorphic processes, A:12  
*Alvin* dive studies, A:72-75  
basement lithologies, B:448  
bathymetry, A:149; B:374, 450, 521  
biostratigraphic summary, B:615-616  
boninite genesis, B:641-646  
carbonate chimneys, A:12, 148  
carbonate enrichment, A:281; B:376-377  
clast distribution, B:606, 608  
emplacement, B:8  
fault planes, B:344  
flank, B:603-606  
flow features, A:71-75  
fluid flux, A:79  
forearc wedge hydration, B:610  
formation mechanics, A:167; B:351, 600-601  
geological setting, A:6; B:374-375  
hydrous mineral dehydration, A:163  
internal structure, A:11  
interstitial-water chemistry, A:159-160, 260; B:377-384  
lithology, A:7  
lithostratigraphy, B:563  
low-salinity fluid, A:163-164  
magma genesis, B:637-641  
metamorphic rocks, B:426
- origin, A:11; B:457  
peridotite, B:451, 456  
petrography, B:415-416, 563  
petrology, B:606, 608  
physical properties, B:8  
seismic reflection profiling, A:75-77  
serpentine, B:9-10, 338, 340  
sonar imagery, B:343, 346  
summit, B:600-602  
ultramafic rocks, A:75; B:431, 433-443  
vent fluids, B:8, 595, 597
- convergent margins, metamorphism, A:77
- convolute structures, A:22  
Conical Seamount, B:603-605
- copper, in harzburgites, A:258
- corrensite, in iowaite, B:315
- crust, oceanic  
Mariana forearc vs. Pacific forearc, A:98  
melting, B:231
- crystallization sequence  
calc-alkaline and boninite series, B:183, 198  
definition, B:182
- cumulates, Site 786, B:181-182
- dacite  
amphibole in, B:187  
groundmass, A:205  
lithological occurrence, B:166  
mafic phenocrysts, B:182  
magnesium numbers, B:196  
mineralogy, B:195  
parental magma, B:188  
petrography, B:180, 239  
shallow-level processes, B:227  
Site 782, B:258  
Site 786, A:324  
stable isotopes, B:259  
trace elements, B:222  
zirconium/strontium ratio, B:223
- dacite flow, Site 786, A:325
- debris flow  
Conical Seamount, B:343  
serpentine, A:264  
Site 778, B:340
- deformation  
asthenospheric conditions, B:531  
Conical Seamount, B:349  
during proto-arc formation, B:531  
extensional, A:262; B:352  
hard rock, A:128  
heterogeneous, B:523, 527-528  
Izu-Bonin forearc, B:3  
lateral tectonic, B:612  
in lithified sediments, A:285-289  
mechanisms, A:107-108; B:605  
in pelagic volcanoclastic mud, A:260-261  
in serpentine sediments, A:107, 127-128, 260-261, 289-290, B:8  
in serpentinization fabric, A:166, 290, 291  
in unlithified sediments, A:285
- deformation, brittle, B:528, 531, 609, 611
- deformation, ductile, peridotite, B:611
- deformation, high-temperature  
peridotite, A:262; B:529  
ultramafic rock, A:164
- deformation, penetrative  
harzburgites, A:153  
Site 779, A:121  
ultramafic rocks, B:433
- deformation, plastic  
serpentinite muds, B:369  
Site 786, B:268
- degassing, Site 786, B:137-138

- dehydration, of hydrous minerals, B:384
- density
- logging data, A:335
  - serpentinized peridotite, B:582
  - Site 778, A:109
  - Site 779, A:131
  - Site 780, A:169, 171-172
  - Site 781, A:194
  - Site 782, A:213, 230
  - Site 784, A:293
  - Site 785, A:311-312
  - Site 786, A:333-334, 348
  - vs. magnetic susceptibility, A:191; B:567, 572
  - vs. porosity, B:583-584, 606
- desautelsite, Site 778, B:355
- detrital layer, Site 786, A:318; B:267
- dewatering, serpentine debris flows, A:264
- diabase intrusion, in serpentinized rocks, B:407
- diapirism. *See also* serpentine diapirism
- in boninite genesis, B:647-648
  - mechanisms, B:611
  - in peridotite formation, B:611
  - seamounts, A:88
  - supra-subduction zones, B:611
- diatoms
- biostratigraphy, A:120, 153, 183, 205, 256, 277-278, 309, 320
  - Miocene-Quaternary, B:91-94
  - occurrence, B:617
  - Pliocene/Pleistocene boundary, A:277
  - zonation, A:25-28, 265
- dike, boninite
- mineralogy, B:188
  - neodymium isotopes, B:249-250
  - Site 786, A:327
  - trace elements, B:217, 222, 227
- dikes, Site 786, A:327; B:145-146, 239
- diopside
- chemical composition, B:462
  - in peridotite, B:462
  - rare earth elements, B:451, 492-493
  - in serpentinized harzburgite, B:449
  - trace elements, B:502
- dunite
- geochemistry, A:280
  - metamorphism and alteration, B:438
  - petrography, B:433, 435
  - petrology, A:121, 154, 257, 279
  - Site 778, A:102
  - Site 779, B:576-577
  - Site 780, B:349
  - tectonized, A:121, 154
- electrical resistivity
- Site 782, A:213, 232
  - Site 786, A:334-335, 347
- enstatite, Site 786, B:177
- epidote
- in serpentine sediments, B:333
  - Site 778, B:347, 420
  - Torishima Forearc Seamount, B:421, 427-428
- Esmerelda Bank, LIL elements, B:303
- ethane
- in chimney structures, B:376
  - organic acids and dissolved, B:388, 394-395, 603
  - pore water, B:380
  - Site 779, A:125-126, 129
  - Site 783, A:260
- europium
- negative anomaly, B:226-227, 306
  - positive anomaly, B:124, 129, 491
- exotic rock, Site 778, B:328, 338
- explosive eruptive products, Izu-Bonin forearc, B:277
- extension, brittle-ductile, B:609
- Site 783, B:352
- Facpi Formation, Mariana forearc, A:6
- fault gouge, Site 779, A:127-128
- fault zone
- argillitized and mineralized, A:331
  - Conical Seamount, B:358
- faulting
- ash layers, A:330; B:273-274
  - dip orientation, A:288-290
  - Site 784, A:286-287
  - Site 786, B:273
  - subsidence and, B:271
- ferromanganese oxides, Site 786, A:316
- fertile MORB mantle (FMM), B:638-639
- flow features, seamounts, A:71
- fluid flow
- accretionary wedges, A:11-12
  - Conical Seamount, B:438-439
  - Izu-Bonin-Mariana forearc, A:12
  - metamorphic reaction, B:612
- fluid migration, with vertical tectonic movement, B:359
- fluoride/silica ratio, in ash sequences, B:289
- folding
- convolute, in serpentine sediments and flows, A:133
  - plastic, in serpentine microbreccia, B:332
  - Site 779, B:349
- foliation
- anastomosing, B:609
  - dip orientation, B:526
  - folds affecting, A:107
  - mantle, A:128-129
  - preferred orientation, B:605
  - in serpentine sediments, A:133
  - shear, A:261-263; B:609
  - Site 778, A:106-107; B:344, 347
  - whorled, A:262
- foraminifers, benthic
- bathyal-abyssal transition, B:74, 76-77
  - deep-water cosmopolitan forms, B:74
  - Eocene/Oligocene boundary, B:76-77
  - occurrence, B:617
  - paleobathymetry, B:76-77
  - Site 786, B:73
- foraminifers, planktonic
- biostratigraphy, A:102, 120, 152-153, 183, 277, 309, 319-320
  - Cenozoic, A:205, 207
  - occurrence, B:617
  - provincialism, B:73-74
  - zonation, A:25-28; B:74
- forearc
- evolution, A:11-12, 69, 307-308; B:595
  - intraoceanic, B:407
  - ocean-continent, B:407
- forearc basement high, B:143
- constructional history, B:263, 269-271
  - geochemistry, B:292
  - subsidence events 1-4, B:271
- forearc flexure, Izu-Bonin forearc, A:199
- forearc terrane
- chemical fluxes, A:11-12
  - origin and evolution, B:3, 6, 8
  - serpentine deposits, B:9-10
- formate
- Conical Seamount, B:390, 394-395
  - in serpentine pore waters, B:387-388
- forsterite
- in boninite, B:178
  - magnesian phenocrysts, B:183
- Fourier transform infrared (FTIR) spectroscopy, B:131, 135-136
- fractures, Site 786, A:331
- Franciscan Complex (California), magmatic intrusions, B:407
- Franciscan Formation, peridotite emplacement B:611
- Frankenstein veins
- Site 780, A:165-166
  - Site 783, A:263
- Fukujin Seamount, LIL elements, B:303
- garnet, Site 779, B:419, 425
- garnierite, B:316
- gas hydrates, chlorinity and, B:381, 383
- Gauss Chronozone, B:22
- Site 781, A:189
  - Site 784, B:551
- Gauss/Matuyama chronozone boundary, B:23
- geochemical logging
- data reduction, B:664-666
  - Izu-Bonin forearc, B:663-673
  - lithostratigraphic correlation, A:335
  - major oxide estimates, B:669, 672-673
  - Site 782, A:213-215, 233-240
  - Site 786, A:336, 338
  - summary, A:244-252, 349-363
  - units, A:215-217, 222, 373
- geochemistry, fluid. *See also* interstitial-water chemistry
- analytical methods, A:28-29
  - Site 778, A:105-106
  - Site 779, A:125-127
  - Site 780, A:157-164
  - Site 781, A:186-187
  - Site 782, A:208, 211
  - Site 783, A:259-260
  - Site 784, A:281, 284-285
  - Site 785, A:310
  - Site 786, A:328-329
- geochemistry, igneous
- alteration effects, B:222-223, 246
  - analytical methods, B:149
  - ash layers, B:279-286
  - ashes vs. forearc basement high, B:292
  - Bonin Trough, B:169
  - cogenetic series, B:223
  - Conical Seamount, B:371
  - effects of metamorphism on, B:404-405
  - forearc basement high, B:169
  - fractional crystallization differentiation, B:280
  - fractionation phases, B:164-165
  - high-, low-magnesian groups, A:327
  - Izu-Bonin-Mariana forearc, B:162, 167
  - petrogenetic relations, B:151-154
  - shallow-level processes, B:223, 226-227
  - shipboard vs. laboratory results, B:149-151, 158-161, 170-173
  - Site 778, A:102-105
  - Site 779, A:122-124
  - Site 780, A:155-156
  - Site 781, A:184-185
  - Site 782, A:207, 222
  - Site 783, A:257-258
  - Site 784, A:280-281
  - Site 786, A:327-331; B:149-151, 154-157, 162-163, 212-213, 217, 222
  - subduction component, B:643-645
- geochemistry, major-element, B:318
- clay fraction, B:121
  - lithologic correlation, B:337-338

- Site 782, B:120  
 Site 784, B:122, 130  
 Site 786, B:122, 152-155  
 volcanic glass, B:138-139  
 geochemistry, metamorphic  
 Site 778, A:102-105  
 Site 779, A:122-124  
 Site 780, A:155-156  
 Site 781, A:184-185  
 Site 782, A:207  
 Site 783, A:257-258  
 Site 784, A:280-281  
 Site 786, A:327-331  
 geochemistry, sediment  
 analytical methods, A:26-27  
 Site 778, A:105-106  
 Site 779, A:125  
 Site 780, A:156-157  
 Site 781, A:186  
 Site 782, A:207-211  
 Site 783, A:258-259  
 Site 784, A:281  
 Site 785, A:310  
 Site 786, A:328  
 geophysical logging  
 operations, A:213-215  
 Site 780, A:169-174  
 Site 782, A:233-240  
 Site 786, A:334-335; B:588  
 summary, A:244-252  
 units 1-4, A:215-217, 222  
 Gilbert Chronozone, Site 782, B:549  
 glass, boninitic  
 alteration, B:137  
 water content, B:136-138  
 glass, dacitic, B:136-138  
 glass, rhyolitic, B:136-138  
 glass, volcanic  
 alteration, B:137, 266  
 analytical methods, B:131, 135-136, 277-279  
 carbon dioxide and water content, B:136  
 classification, B:675-676  
 degree of crystallinity, B:279  
 framework-grain composition, B:677-678  
 liquid line of descent, B:280-281  
 major-element geochemistry, B:138-139  
 major-oxide geochemistry, B:136  
 montmorillonite-bearing, B:269  
 Site 781, A:184  
 Site 786, B:138  
 gold, in serpentinite seamounts, B:509-513  
 graded beds, Site 784, A:375  
 grain size, magnetic properties and, B:566  
 GRAPE density  
 Site 779, A:143  
 Site 781, A:191, 194  
 Site 782, A:213, 229-230  
 Site 783, A:266, 269  
 Site 784, A:293  
 Site 786, A:333-334, 346  
 gravity modeling, Izu-Bonin forearc, A:88, 93-94  
 Great Valley Sequence (California), sedimentary  
 serpentinite deposits, A:11  
 greenalite, Site 779, B:358, 605  
 Guam  
 Alutom Formation, B:154  
 boninite, B:258-259, 501, 504, 650, 652-653  
 clockwise rotation, B:629  
 lava, B:232-233  
 Hachijojima forearc, bathymetry, B:448  
 Hahajima, boninitic-dacitic rock, B:208  
 Hahajima Seamount, mantle peridotite, B:451  
 Hakone, igneous geochemistry, B:150-151, 163  
 haloes  
 Site 780, A:164  
 Site 783, A:263  
 Site 784, A:291  
 HARVI program, A:30, 32  
 harzburgites  
 deformation, A:278  
 degree of partial melting, B:456, 646  
 geochemistry, A:280  
 metamorphic minerals, B:438  
 mineralogy, A:75, 257, 368  
 petrography, B:449  
 petrology, A:267  
 positive europium anomaly, B:491  
 serpentinized, A:257, 263; B:438  
 Site 778, A:102  
 Site 779, A:121, 128  
 Site 780, A:153-154; B:349  
 Site 783, A:256-257  
 Site 784, A:278-279; B:354, 576-577  
 Site 779, A:121  
 Site 780, A:153-154  
 trace elements, A:258  
 from supra-subduction zone ophiolites, B:501, 505  
 heat flow  
 Site 780, A:174  
 Site 782, A:221  
 hectorite, Site 778, B:354  
 hematite  
 Site 778, B:420  
 Site 786, B:265  
 in volcanic sandstones, B:267  
 high-field-strength (HFS) elements, B:487  
 mobilization, B:230, 233  
 Site 781, B:303-304  
 hornblende  
 in harzburgites, B:449, 461  
 in peridotite, B:450-451  
 relict, B:416, 427  
 hyaloclastite  
 breccia, potassium-argon dating, B:207  
 Site 786, A:326  
 hydrates, carbonate hydroxide  
 Site 778, B:354  
*in situ* alteration, B:355  
 hydrocarbon gas  
 Site 778, A:105  
 Site 785, A:310  
 hydrocarbons  
 Site 779, A:133  
 Site 780, A:157-158  
 in vent fluid, B:8  
 hydrogarnets, Site 778, B:333  
 hydrogen sulfide  
 Site 779, A:126  
 Site 780, A:159  
 in vent fluids, A:12; B:595  
 hydrogrossular  
 Conical Seamount, B:605  
 Site 778, B:333, 347  
 hydromagnesite, Site 778, B:355  
 hydrotalcite pyroaurite group, Site 778, B:355  
 hydrothermal circulation, Site 786, B:264  
 igneous petrology  
 analytical methods, A:30-35  
 Site 778, A:102  
 Site 779, A:121-122  
 Site 780, A:153-155  
 Site 781, A:183-184, 195  
 Site 782, A:205, 207  
 Site 783, A:256-257  
 Site 784, A:278-280  
 Site 786, A:320-327  
 igneous rock  
 forearc generation models, B:305-306  
 provenance, A:75  
 illite, B:117, 128  
 incompatible elements  
 basaltic rocks, B:405-407  
 MORB source, B:303  
 vs. active arc volcanoes, B:305  
 vs. compatible elements, B:638  
 induration, classes of, A:22-23  
 interstitial-water chemistry, A:300; B:683-687  
*See also* geochemistry, fluid  
 Conical Seamount, B:375-384, 601-603  
 dehydration and freshwater generation, B:384  
 fluid mixing, A:163-164; B:384  
 freshened pore water source, B:373-374  
 gradients, B:376  
 low-chlorinity, B:377-384, 603  
 seawater-rock interaction, B:377-378  
 Site 778, A:108-109, 131-133, 159, 260;  
 B:375-384, 683-687  
 Site 779, A:126, 130-131, 159, 260; B:375-384, 683-687  
 Site 780, A:158-162, 260; B:375-384, 683-687  
 Site 781, A:188-189; B:683-687  
 Site 782, A:214-215, 222; B:683-687  
 Site 783, A:259-261, 269; B:375-384, 683-687  
 Site 784, A:281, 284-287, 375; B:375-384, 683-687  
 Site 785, A:310-311; B:683-687  
 Site 786, A:328-329, 333-334, 372; B:683-687  
 strontium isotopes, B:398-399  
 subduction zones, A:162-163  
 Torishima Forearc Seamount, B:375  
 iowaite  
 chemical composition, B:315-316  
 chloride depletion and, B:358-359  
 decomposition, B:317  
 in serpentine mud, B:317-319, 323, 603  
 Site 778, B:354  
 iron, in spinels, B:450  
 iron/aluminum partitioning, B:421  
 iron/aluminum ratio  
 epidote, B:425  
 in lawsonite, B:417  
 iron/magnesium partitioning, B:183  
 iron oxide  
 in brucite, B:317  
 in serpentine sediments, B:334  
 iron oxide/magnesium oxide ratio, vs. silica,  
 B:162, 286  
 iron oxide/silica ratio, in ash sequences, B:287  
 island arc tholeiite (IAT)  
 boninitic affinities, B:328  
 major-element geochemistry, B:302  
 MORB-like rock association, B:407  
 isotopes. *See* lead isotopes; neodymium isotopes;  
 strontium isotopes  
 isotopes, stable. *See also* boninite  
 aragonite, A:12, 75  
 carbonate chimney, A:12, 75, 77  
 pelagic sediment, B:246-247  
 regional variations, B:258-259  
 Izu-Bonin forearc  
 ash layers, B:279-292  
 basement, A:8, 199; B:8, 624  
 bathymetry, A:83-84, 198; B:347

- biostratigraphic summary, B:616-617  
 boninite volcanism, B:208  
 chemical interactions, A:81  
 deformation, B:3  
 diapirism, B:611  
 frontal arc morphology, B:5, 597  
 geological setting, A:81-83, 253-254, 367; B:624, 626  
 igneous geochemistry, B:154-157, 162, 167  
 magmatic events, B:204-206  
 mud volcanism, B:370  
 northward drift, B:8  
 outer-arc high, B:3  
 Pacific Plate subduction, A:81-82  
 petrogenesis, A:8-9  
 plate rotation, A:200  
 potassium-argon dating, B:204-206  
 regional setting, B:238  
 seamounts, A:81, 84-90; B:343  
 sedimentation, A:253-254; B:617-620  
 serpentinite, B:313-320, 612  
 subsidence, B:77  
 tectonic evolution, A:199, 367  
 terrane origin and evolution, A:5, 199; B:3  
 volcanism, B:6, 208, 370
- Izu-Bonin forearc basin, submarine canyons, A:6  
 Izu-Bonin Islands, boninite, A:8, 199  
 Izu-Bonin-Mariana region, evolution, A:5; B:3  
 Izu-Bonin outer-arc high  
 Eocene-Oligocene geology, B:624  
 lithostratigraphy, B:630
- Izu-Bonin trench  
 Eocene-Oligocene geology, B:626-627  
 outer forearc ridge, B:599
- Izu-Ogasawara forearc, Eocene-Oligocene geology, B:626
- Izu-Ogasawara-Mariana island arc, bathymetry, B:146
- Japan, active late boundaries, B:520  
 Jaramillo Chronozone  
 Site 782, B:548  
 Site 784, B:551
- kaolinite, B:117  
 kerogen  
 Site 779, A:119-120  
 Site 789, A:372
- lamination  
 Site 783, A:262  
 Site 784, A:276, 287-288
- lanthanum, Site 781, B:303-304  
 lanthanum/samarium ratio, boninite, B:501, 504, 632  
 lanthanum/ytterbium ratio, B:491-492
- large-ion-lithophile (LIL) elements, B:633  
 melt-related enrichment, B:229  
 mobility during alteration, B:223  
 Site 781, A:185; B:303  
 Site 786, A:327-328
- Lau Basin, backarc basin basalt (BABB), B:138  
 lava, pillow  
 potassium-argon dating, B:207  
 Site 786, A:326
- lawsonite  
 Mariana forearc, B:408  
 Site 778, B:416-417, 419-421
- layering  
 convolutions, A:106  
 folds affecting, A:112-113  
 Site 778, B:344
- lead isotopes  
 alteration effects, B:225, 242, 248, 250  
 analytical methods, B:239, 242, 246  
 basalt sill, B:307  
 in boninite, B:650  
 covariation, B:250-252  
 Izu-Bonin forearc, B:247, 250-252, 258-260  
 Northern Hemisphere Reference Line, B:633, 642  
 Site 786, B:223
- lead/thorium ratio, Izu-Bonin forearc, B:248-249  
 lead/zirconium ratio, neodymium isotope covariation, B:254
- Leg 37  
 basalt, B:583  
 serpentinite, A:11  
 serpentinized peridotite, B:582
- Leg 45  
 serpentinite, A:11  
 serpentinized peridotite, B:582
- Leg 56, water-escape structures, A:288  
 Leg 57, water-escape structures, A:288  
 Leg 60, tholeiites, B:258, 260  
 Leg 67, *en echelon* sigmoidal veinlets, A:285  
 Leg 78, water-escape structures, A:288  
 Leg 82, serpentinized peridotite, B:582  
 Leg 107, serpentinized peridotite, B:582  
 Leg 109, serpentinized peridotite, B:582  
 Leg 110, chlorinity, A:162  
 Leg 125, objectives, A:5, 10, 367-368; B:3, 344, 401-402, 488, 595-600, 623-624
- lherzolite, Mariana Trench, B:456  
 light rare earth elements (LREE), in peridotite, B:498-500
- lithophile oxides, as mantle depletion measure, B:155, 168
- lithosphere  
 cooling effect, B:646  
 mantle sources, B:254-255, 258  
 subduction, A:367; B:5, 649-650, 656-657
- lithosphere, arc, B:630-635  
 lithosphere, forearc, B:358, 611-612
- lithostratigraphy. *See also under specific sites*  
 basement, B:131, 173  
 biostratigraphic correlation, B:73  
 clay-claystone transition, A:256  
 depositional environment, A:318  
 igneous units, B:144-149, 211-213  
 lithologic Unit I, A:100-101, 109-110, 117-119, 132, 151-152, 175, 180-182, 193, 195, 201-202, 221, 255-256, 275-277, 309, 316, 338, 368, 370, 372-373, 375; B:328, 330, 344, 347, 349, 351-352
- lithologic Unit II, A:101, 110, 119-120, 132, 152, 175-177, 202, 221, 256, 277, 316-317, 338-339, 368, 370, 372-373, 375; B:328, 330, 344, 347-349, 352, 354
- lithologic Unit III, A:120, 317, 339, 372, 375; B:348-349
- lithologic Unit IV, A:317-318, 339, 375; B:145
- logging correlation, A:215-217  
 Oligocene-Miocene, A:316, 373  
 sequential relationships, B:203-204  
 Site 779, A:145  
 Site 780, A:177  
 Site 781, B:296  
 Site 782, A:243  
 Site 783, A:272  
 Site 784, A:305  
 Site 786, B:214-216
- lizardite, B:317
- formation temperature, B:439  
 in serpentine sediments, B:332, 361  
 Site 779, B:358
- loss on ignition (LOI)  
 negative silica correlation, B:334-335  
 Site 779, A:122  
 Site 780, A:155  
 Site 784, A:280  
 ultramafic rock, A:103-104  
 vs. silica, A:125; B:336
- loughlinite, in serpentine deposits, B:358
- mafic rock  
 bronzite andesite vs. boninite series, B:632  
 Conical Seamount, B:606-607  
 deformation, A:133  
 formation, B:402, 406, 408  
 Mariana forearc, B:402-409, 411-412  
 metamorphism, B:403-404, 606  
 petrogenesis, A:185  
 petrography, B:403-405  
 in serpentine deposits, B:355  
 Site 778, A:104  
 Site 779, A:124-125  
 tectonic environments, B:402  
 titanium oxide content, B:337  
 Torishima Forearc Seamount, B:427
- magma, parental  
 boninite dikes, B:227  
 mantle source depletion, B:227, 229  
 origin, B:227, 229-232  
 petrogenesis, B:227  
 two-source differentiation, B:187-189
- magma crystallization sequences, supra-subduction zone, B:182-183
- magma genesis, pre-subduction mantle composition, B:637-641
- magma melting  
 degree of, B:227, 229, 327  
 hydrous conditions, B:233  
 oxidation state, B:183
- magma mixing  
 components, B:254-257  
 Izu-Bonin forearc, B:254-257, 260  
 trace element enrichment and, B:229
- magmatic events, B:205  
 17-Ma episode, B:207  
 41-Ma episode, B:205, 207-208  
 Izu-Bonin forearc, B:204-206, 208
- magmatic intrusions, in ocean-continent forearcs, B:407
- magmatism  
 anomalous near-trench, B:649  
 subduction-related, B:519
- magnesite, in ultramafic rock, B:437
- magnesium  
 phenocrysts vs. bulk-rock numbers, B:196-197  
 Site 779, A:126  
 Site 780, A:159  
 Site 782, A:211  
 Site 783, A:260
- magnesium hydroxycarbonate, Site 778, B:333
- magnesium oxide  
 ash layers, B:279  
 in serpentine sediments, B:334  
 silica relationship, B:149-150, 217  
 in volcanic glass, B:136  
 vs. aluminum oxide, A:328
- magnesium oxide/calcium oxide ratio, Site 786, B:151
- magnesium oxide/silica ratio  
 in ash sequences, B:288

- boninite, B:630-632  
 Site 782, A:208  
 magnetic anomalies, A:43  
 magnetic properties, A:41; B:535-544  
   analytical methods, A:29-30  
   characteristic direction, B:535, 537-538  
   chemical remanent magnetization (CRM),  
     B:566-567  
   degree of serpentinization and, B:567, 570  
   demagnetization, B:549, 566  
   density and, B:567, 572  
   drilling disturbance effects, B:535, 537, 542-  
     544  
   inclination flattening, B:538  
   Koenigsberger ratio, B:564  
   magnetic susceptibility, A:167-168, 190-192,  
     213, 220, 265-266, 291, 293, 300,  
     311, 332, 339; B:564, 567, 570, 573  
   magnetization, B:564, 566-567  
   Miocene/Pliocene translation, A:291, 300,  
     331, 375  
   natural remanent magnetization (NRM),  
     A:130, 167-168; B:564  
   peridotite, B:564-574  
   remanence, A:187-189, 212-213, 216-217,  
     220, 265, 290-291, 311, 331-332  
     B:566  
   serpentine sediments, B:561, 564-570  
   Site 778, A:108, 114  
   Site 779, A:140  
   Site 782, B:535, 539  
   Site 784, A:294; B:537, 540  
   Site 786, A:335-336, 338; B:537-538, 540-  
     541  
 magnetite, B:118, 316  
   fractionation, B:227  
   in serpentinite, B:561  
   in serpentinized peridotite, B:563-564, 566,  
     578-579  
   Site 778, B:420  
   stringers, A:164-165  
 magnetostratigraphy  
   biostratigraphic correlation, A:26-28; B:60,  
     618, 620-621  
   Chronozones 5-10, B:549  
   discrete-specimen fluxgate magnetometer  
     data, B:556-560  
   GPTS correlation, B:550-552  
   Izu-Bonin forearc, B:548-552, 617  
   Site 778, A:108  
   Site 779, A:130, 140  
   Site 781, A:187  
   Site 782, A:212-213, 218-219; B:548-549,  
     553-554, 556-558, 618  
   Site 783, A:265-266; B:549, 551, 554, 558  
   Site 784, A:290-292; B:551-552, 554, 558-  
     559, 620  
   Site 786, A:337; B:552, 554-555, 559-560,  
     621  
   whole-core cryogenic magnetometer polarity,  
     B:553-555  
 manganese oxide/silica ratio, in ash sequences,  
   B:287  
 mantle  
   diapirs, B:458  
   lithospheric vs. asthenospheric, B:157  
   sub-arc, B:156-157  
 mantle melting  
   acid magmas from, B:649  
   along-strike variations, B:155  
   in amphibolite facies, B:644-645  
   equilibrium batch, B:506  
   fractional, B:506, 647  
   incremental model, B:498, 501, 638  
   initiation temperature, B:645  
   LIL element enrichment, B:229  
   mantle diapirs vs. peridotite, B:458  
   OIB-like source, B:231-232  
   parameterization of, B:657-658  
   partial, B:492, 494, 502, 641, 645-647  
   pooled fractional, B:638-639  
   shallow, B:648  
   sub-forearc event, B:407-408  
   volatile-induced, B:647  
 mantle mixing, Pacific MORB mantle component,  
   B:639-640  
 Mariana arc  
   bathymetry, B:7, 345, 596  
   geological setting, B:432, 519-521, 628  
 Mariana backarc basin  
   opening, B:593, 595  
   spreading, A:5; B:3  
 Mariana forearc  
   basement, A:6-10; B:293, 624  
   bathymetry, A:71; B:295  
   block diagram, A:369  
   boninite genesis, B:650-652  
   deformation, B:3  
   diapirism, B:611  
   Eocene-Oligocene geology, B:628  
   evolution, A:5, 69, 71; B:407-408, 593, 595  
   fluid flux, A:78-79  
   geological cross section, B:309  
   geological setting, A:367  
   igneous geochemistry, B:154-157, 162, 167  
   metamorphism, A:77  
   Miocene sill, B:207-208  
   MORB-like rock, B:407-410  
   muds, B:313-320, 370  
   northward drift, B:8  
   outer arc high, B:520  
   plate rotation, A:200  
   pore waters, B:373  
   regional setting, B:238  
   seamounts, A:6, 12, 79  
   seismic reflection profiling, B:6, 521  
   serpentine, A:6, 12, 71; B:313-320, 612  
   tectonic setting, A:367; B:293-294, 402  
   terrane, A:5  
   thermal history, B:440  
   volcanism, B:6  
 Mariana/Izu-Bonin convergent margins, geologic  
   setting, B:593, 595  
 Mariana Ridge, Eocene-Oligocene geology,  
   B:627-628  
 Mariana Trough  
   boninite, B:286  
   lead isotopes, B:258  
 marl, nannofossil  
   Site 782, A:201-202  
   Site 786, A:316-317  
 Matuyama Chronozone, B:22  
   Site 782, B:548  
   Site 783, A:265; B:551  
   Site 786, B:552  
 meta-andesite, Site 786, A:326  
 meta-volcaniclastic rock, petrology, A:257, 279-  
   280  
 metabasalt  
   geochemistry, A:124; B:328  
   late-stage fracturing, B:416  
   petrology, A:257, 279  
   Site 778, A:102; B:606  
   Site 779, A:121  
 metadacite, Site 786, A:327  
 metadiabase  
   geochemistry, A:124  
   Site 779, B:403  
 metagabbro, horizontal foliation, A:128-129  
 metamicrogabbro, Site 779, A:121-122  
 metamorphic rock  
   mineral paragenesis, B:423, 425-426, 428  
   mineralogy, B:416-423  
   origin, B:426-427  
   petrography, B:415-416, 420-421  
 metamorphism  
   geochemical effects of, B:404-405  
   mineral paragenesis and, B:423, 425-426  
   prehnite-actinolite facies, B:426  
   retrograde, B:439, 611  
   rodingite, B:403-404, 409  
   temperature-pressure conditions, B:439-410  
   two-stage, B:416  
 metamorphism, blueschist-facies  
   Conical Seamount, B:606  
   convergent margins, B:611  
   in subduction zones, B:426  
 metasomatism, B:647  
   by asthenospheric fluids, B:500  
   isotopic effects, B:258  
 methane  
   alkalinity, A:209  
   in chimney structures, B:376  
   chloride uptake and, B:381  
   chlorinity and, A:163  
   organic acids and dissolved, B:388, 394-395,  
     603  
   pore water, B:380  
   Site 779, A:125-126, 129  
   Site 780, A:157-158, 161  
   Site 781, A:187  
   Site 783, A:260  
   Site 784, A:281  
   Site 786, A:328  
   sources, A:73, 75  
   Torishima Seamount, B:381  
   in vent fluids, A:12, 148; B:595  
 methane/ethane ratio, Site 779, A:129  
 microbreccia, polymictic epiclastic, Site 786, B:267  
 microbreccia, serpentine  
   calcium carbonate content, A:281  
   deformation, A:128, 289-290  
   layering, A:112-113  
   phacoidal, A:277  
   rheology, B:609  
   Site 778, B:328, 331  
   Site 784, B:354  
 microbreccia, serpentinite  
   convolute folding, B:605  
   Site 779, B:348, 604  
 microdiorite, Site 786, B:181-182  
 microfaulting  
   Site 783, B:352  
   Site 784, A:285, 300, 375  
   Site 786, A:330  
   Torishima Forearc Seamount, B:609  
 microgabbro, Site 786, B:268  
 Mid-Atlantic Ridge axis, serpentinized peridotite,  
   B:333  
 mid-ocean ridge basalt (MORB)  
   emplacement mechanisms, B:409-410  
   island-arc tholeiite association, B:407  
   Mariana forearc, A:75  
 mineral melt equilibria  
   for evolved magmas, B:186-187  
   for primitive magmas, B:183-186  
 mineralogy, B:317. *See also* serpentine  
   alteration assemblage, B:489-490  
   alteration effects, B:150



- interstitial-water chemistry correlation, B:129  
 lithologic correlation, B:358-359  
 metamorphic, B:416-423  
 paragenesis and metamorphic conditions, B:423, 425-426  
 seawater interaction, B:359  
 Site 778, B:344  
 Site 781, B:118-119, 122  
 Site 782, B:119-120, 123  
 Site 783, B:121, 125  
 Site 784, B:121-122, 126  
 Site 786, A:318; B:122, 124, 127  
 ultramafic clasts, A:102
- minerals, metamorphic  
 Conical Seamount, B:606, 611  
 mafic rocks, B:416-420  
 mottling, in serpentine flow, A:119, 151-152  
 mud. *See also* serpentine mud  
 vitric, B:676, 680  
 volcanoclastic, A:260-261  
 mud volcanism  
 Conical Seamount, B:611-612  
 Mariana-Izu-Bonin forearc, B:370  
 Myojin Sho Forearc Seamount, origin, B:457
- nannofossils, calcareous  
 biostratigraphy, A:101, 120, 152, 182-183, 256, 277, 309, 318-319; B:50-53, 58-61  
 Cenozoic, A:203-205  
 distribution, B:39, 71-74  
 Eocene-Miocene, B:46-53  
 Eocene/Oligocene boundary, A:319; B:46  
 lithologic correlation, B:45  
 Miocene hiatus, A:204  
 Miocene-Holocene, B:15, 17-19  
 Miocene/Pliocene boundary, A:204; B:20, 49  
 occurrence, B:617  
 Oligocene hiatus, A:205  
 Oligocene/Miocene boundary, A:319; B:46, 49, 52, 53, 59  
 Pliocene/Pleistocene boundary, A:204  
 quantitative analyses, B:28-35  
 Site 786, B:263  
 zonation, A:25-28; B:19-28, 46-53  
 natrolite, Site 779, B:425  
 neodymium isotopes  
 alteration effects, B:246-248  
 in boninite, B:633  
 covariation, B:247-250, 253-255, 260  
 Izu-Bonin forearc, B:247-250, 252-253  
 Pacific MORB mantle range, B:254  
 neodymium/zirconium ratio, Izu-Bonin forearc, B:247, 249, 255  
 Nepoui (New Caledonia), boninite, B:155  
 New Guinea Plate, subduction, B:629  
 New Idria, coalingite, B:355  
 nickel  
 in bronzite andesite, B:632  
 in serpentine sediments, B:336, 340  
 Site 779, A:122-123  
 Site 780, A:155  
 Site 783, A:258  
 Site 784, A:280  
 nickel/titanium dioxide ratio, Mariana forearc, B:409  
 niobium, mafic rocks, B:406-407  
 niobium/zirconium ratio, B:639-640  
 nitrogen  
 Site 779, A:127  
 Site 781, A:186-187  
 Site 782, A:208-212  
 Site 784, A:281-285
- Site 785, A:310  
 Site 786, A:328, 332  
 Northern Hemisphere Reference Line (NHRL), lead isotope distribution, B:250, 258-259  
 ocean island basalt (OIB), rare earth elements, B:500  
 Oceanic Formation (Barbados), benthic foraminifers, B:74  
 Ogasawara Islands  
 basement, A:6; B:203  
 forearc basement high, B:143  
 seamounts, B:445  
 Ogasawara Seamount, subsidence, B:271  
 Oki-Daito Ridge, iron-titanium basalt, B:629  
 Olduvai Chronozone  
 Site 782, B:548  
 Site 784, B:551  
 olivine  
 in boninite, B:178  
 chemical composition, B:459  
 in harzburgite, B:453  
 high-temperature deformation, B:523  
 kink bands, B:523  
 melt equilibrium, B:183  
 mineral chemistry, B:299  
 in peridotite, B:450-451, 457, 459, 474-478, 500, 522-523  
 petrography, B:172  
 phenocrysts, B:201  
 poikiloblastic texture, B:523, 529  
 preferred orientation, B:528  
 in serpentinized harzburgites, B:449  
 table-shaped crystals, B:528-529  
 in ultramafic rock, A:102; B:436  
 Oman, peridotite, B:528-529  
 ooze, nannofossil, Site 785, A:309, 312  
 ophiolites  
 forearc terranes, B:449  
 formation, A:10, 199  
 model for origin, B:458  
 Site 786, B:148  
 supra-subduction zone (SSZ), A:10, 199  
 Site 786, B:148  
 Oregon subduction zone, carbonate chimneys, B:376  
 organic acids  
 in interstitial waters, B:387-395  
 in platinum-palladium fluids, B:511  
 precursor material, B:388-389, 603  
 in serpentine sediments, B:387, 603  
 orthopyroxene  
 alteration, A:164  
 boudinage, B:523  
 in bronzite andesites, B:180  
 in harzburgites, B:526  
 high-temperature deformation, B:523  
 melting behavior, B:152-153  
 in peridotite, B:450-451, 500, 522-523  
 petrography, B:172, 177-178  
 resorption, B:522  
 spinifex, B:201  
 in ultramafic rock, A:102; B:436  
 oxidation, surficial, Site 786, B:148-149  
 oxygen isotopes, vent fluids, A:75
- P*-wave velocity  
 Site 779, A:131  
 Site 782, A:213, 231  
 Pac-Man Seamount  
 flow morphology, B:371  
 mantle peridotite, B:451  
 origin, B:457
- serpentine debris, B:612  
 Pacific Ocean W  
 boninite, B:232, 650  
 Eocene-Oligocene geology, B:624-629  
 tectonic evolution, B:630  
 Pacific Plate  
 movement, A:81-82  
 subduction, B:208, 211  
 palagonite, Site 786, B:268-269  
 Palau-Kyushu Ridge  
 Eocene-Oligocene geology, B:628  
 isolation, A:5  
 lava, B:630  
 paleolatitude, Philippine Sea Plate, B:538, 545  
 palladium  
 in serpentine seamounts, B:509-513  
 sources, B:511  
 speciation in pore fluids, B:511-512  
 palygorskite, B:117  
 origin, B:129  
 in serpentine sediments, B:332  
 X-ray diffraction pattern, B:120  
 Parece Vela Basin  
 formation, B:208  
 opening, B:593  
 spreading, A:5; B:3  
 Paul Revere Ridge, magmatic intrusions, B:407  
 pelagic sediment  
 in mantle source, B:650  
 rheology, B:366-368, 609-610  
 peridotite  
 annealing, B:528-529  
 deformation, A:262, 290; B:523, 528-531, 611  
 depletion, B:456-457  
 element ordering, B:492, 495  
 emplacement mechanisms, B:611  
 enrichment pattern, B:606  
 evolution, B:610  
 forearc region, B:451  
 formation, B:606, 611  
 fractionation phases, B:164-165  
 geochemistry, B:449-455, 466-467  
 H-type, B:451, 456-457  
 internal structure, B:523  
 LH-type, B:451, 456-457  
 magmatic-tectonic events 1-6, B:529-531  
 melting, B:492  
 mineralogy, B:489-490  
 petrogenesis, B:501-503, 638  
 petrography, B:520-521  
 petrology, B:488, 522-524, 633-634  
 porphyroclastic texture, B:523  
 primary mineral chemistry, B:450-451  
 rare earth elements, B:492, 494-495, 638  
 secondary mineralogy, B:523  
 seismic properties, B:606  
 subduction component, B:500  
 supra-subduction zone settings, B:519  
 trace elements, B:490-493, 498-500, 634-635, 640, 642  
 upper mantle, B:457  
 vertical distribution, B:463  
 vs. abyssal peridotite, B:634  
 vs. spatially related boninite, B:501, 504  
 vs. supra-subduction zone ophiolites, B:501-502, 505  
 peridotite, serpentinized  
 aragonite content, B:333  
 dehydration temperature, B:370  
 demagnetization behavior, B:566-568  
 exposure via normal faulting, B:612  
 fields A-C, B:335, 337  
 IRM acquisition behavior, B:565, 570

- magnetic carrier, B:566  
magnetic properties, B:561, 564-574  
major-element geochemistry, B:334-336  
oxide petrography, B:563-564  
seamount uplift and hydration of, B:611  
seismic properties, B:581-584  
Site 778, B:328  
thermomagnetic analysis, B:564, 567  
trace element geochemistry, B:336-337, 339  
peridotite, spinel, variation with geological environment, B:457  
peridotite/seawater interaction, Conical Seamount, B:602, 605-606  
Peru continental margin, chlorinity, B:382  
petrography, analytical methods, B:171-173  
petrology, metamorphic  
analytical methods, A:30-35  
Site 778, A:102  
Site 779, A:121  
Site 780, A:153-155  
Site 781, A:183-184  
Site 782, A:205, 207  
Site 783, A:256-257  
Site 784, A:278-280
- pH  
Conical Seamount, B:377-378  
Site 778, A:105  
Site 779, A:126  
Site 780, A:158  
Site 783, A:260
- phacoids  
boudinage, B:352, 609  
Conical Seamount, B:347, 349, 605  
deformation, B:354  
Site 778, B:328  
Torishima Forearc Seamount, B:352, 354, 609-610
- phengite, Site 778, B:419, 424-425  
phenocrysts, basalt, A:184-185  
phenocrysts, mafic, Site 786, B:182  
Philippine Basin W  
Eocene-Oligocene geology, B:628-629  
evolution, B:8  
subocean lithosphere, B:258  
Philippine Islands, active plate boundaries, B:520  
Philippine Sea  
active plate boundaries, B:374  
bathymetry, A:70; B:4, 594  
geologic features, B:4, 326, 344, 594  
plate boundaries, A:369  
relict spreading centers, A:369  
Philippine Sea Plate  
clockwise rotation, B:535  
entrapment hypothesis, B:595  
equatorial ambiguity, B:535  
geological features, B:536-537  
northward movement, A:213  
Pacific lithosphere subduction, A:5  
paleolatitude, B:538, 545  
reconstruction, A:200  
rotation, A:11  
subduction, B:629
- phillipsite, B:118  
phosphate  
mafic rocks, B:406  
yttrium enrichment, B:222-223, 225  
phosphate/silica ratio, in ash sequences, B:289  
photoelectric effect (PEF), logging data, A:335  
physical properties  
serpentine seamounts, B:8  
Site 778, A:108-109, 114  
Site 779, A:130-132, 141-143  
Site 780, A:167-172
- Site 781, A:191-193, 195  
Site 782, A:213, 222-228  
Site 783, A:266ff  
Site 784, A:293, 295-301  
Site 785, A:311-312  
Site 786, A:333-335, 339-345  
plagioclase, B:117  
aggregate, B:201  
andesite-dacite-rhyolite series, B:227  
in boninite, B:178  
bronzite andesite accumulation, B:226  
in bronzite andesites, B:180  
mineral chemistry, B:299  
petrography, B:173  
Site 786, A:327; B:181  
zoning patterns, B:187  
plate tectonics  
Izu-Bonin forearc, A:367  
Mariana forearc, A:367  
relative motion changes, B:630  
platinum  
in serpentine seamounts, B:509-513  
sources, B:511  
speciation in pore fluids, B:511-512  
platinum-group elements (PGE)  
Conical Seamount, B:603  
hydrothermal mobilization, B:507  
platinum/palladium ratio, B:511  
Poisson's ratio  
serpentinite, B:581-583, 606  
vs. porosity, B:583-584, 606  
porosity  
logging data, A:335  
serpentinized peridotite, B:581-583, 606  
Site 778, A:109  
Site 782, A:213  
vs. density, B:583-584, 606  
vs. velocity, B:583  
potassium  
logging data, A:335; B:665-666  
serpentinization vs. sodium effects, A:284-285  
Site 779, A:126  
Site 780, A:159  
Site 782, A:211  
vs. seawater, A:161  
potassium-argon dating  
basalt, B:296-297  
basement, B:237  
Izu-Bonin forearc, B:204-206, 208  
lithostratigraphic relationship, B:206-208  
potassium oxide  
in ash layers, B:282, 291-292  
mafic rocks, B:406  
in serpentinized peridotite, B:335-336  
Site 786, B:223  
potassium oxide-silica diagram, Site 782, A:208  
potassium oxide/silica ratio, in ash sequences, B:288  
potassium oxide/sodium oxide ratio, Mariana forearc, B:406  
prehnite, Torishima Forearc Seamount, B:421, 423, 427-428  
prehnite-pumpellyite veins, Mariana forearc, B:403-434  
pressure compensation level (PCL), Site 786, B:268-269  
propane  
in chimney structures, B:376  
Site 779, A:125-126  
Site 783, A:260  
pumice  
definition, B:675  
Site 783, A:255
- Site 785, A:309, 312  
Site 786, A:316-317  
terrestrial sources, B:267  
pumpellyite  
chemical composition, B:421-423  
Conical Seamount, B:417  
lawsonite and, B:420  
Mariana forearc, B:403-404  
pyroclastic rock, origin, B:268  
pyroxene  
chemical composition, B:459  
geochemistry, B:279, 283-286, 303  
in peridotite, B:458-459, 479-485  
relict, B:424  
pyroxene, sodic  
chemical composition, B:422  
Site 778, B:418, 424
- quartz, Site 778, B:420
- radiolarians  
Izu-Bonin forearc, B:95-104  
Miocene/Pliocene boundary, B:96  
occurrence, B:617  
Pliocene/Pleistocene boundary, B:96  
rare earth elements  
basalt layer, B:299, 302-303  
boninite vs. bronzite andesites, B:226  
clay fraction, B:128-129  
in diopsides, B:451, 4641  
effects of metamorphism on, B:404-406  
kinked pattern, B:406  
in mafic rocks, B:413  
mobility, B:247-248, 632  
peridotite, B:491-493, 495, 638  
Site 786, B:123-124, 222, 226  
subduction component, B:229, 231, 258, 652-653  
two-component mixing, B:255  
U-shaped patterns, B:502, 650  
Red Sea, manganese crust, B:333  
reevesite, Site 778, B:355  
resistivity. *See* electrical resistivity  
rheology  
analytical methods, B:364-365  
Conical Seamount, B:370-371  
effect of drilling disturbance on, B:368  
normal vs. serpentinite muds, B:369-370  
pelagic/volcaniclastic sediments, B:366-368, 609-610  
in plastic solids, B:365  
serpentine, B:352, 354, 359  
serpentinite mud, B:365-366, 369  
Torishima Forearc Seamount, B:352  
yield strength, B:365
- rhyolite  
autobrecciated, B:269  
crystallization phases, B:187  
lithological occurrence, B:166  
mafic phenocrysts, B:182  
magnesium numbers, B:196  
mineralogy, B:195, 632  
neodymium isotopes, B:249-250  
parental magma, B:188  
petrography, B:180-181, 239  
shallow-level processes, B:227  
strontium isotopes, B:246  
trace element enrichment, B:222-223, 226  
zirconium/strontium ratio, B:223  
rhyolite, boninitic  
mineral melt equilibria, B:186-187  
rock-water phase diagram, B:200  
rhyolite flow, Site 786, A:326-327

- rifting, volcanism associated with, B:208  
 Romanche fracture zones, hydrogrossular, B:333  
 rubidium  
   alteration effects, B:225  
   Site 786, B:223  
 rubidium/ytterbium ratio, B:491-492  
 Ruby Seamount, LIL elements, B:303
- Saipan, lava, B:232  
 salinity  
   Site 779, A:127  
   Site 780, A:159-160  
   Site 781, A:190  
   Site 784, A:284  
 samarium, positive anomaly, B:633  
 samarium/ytterbium ratio, B:501, 504  
 samarium/zirconium ratio, B:640  
   fractionation, B:230-232  
   Mariana-Bonin arc-basin system, B:256-257  
   neodymium isotope covariation, B:255, 258, 260  
 San Benito Mountains, desautelsite, B:355  
 sandstone, chloritic, Site 786, A:325  
 sandstone, hyaloclastic, Site 786, B:265  
 sandstone, serpentine, Site 778, B:344  
 sandstone, volcanic, Site 786, B:267-268  
 saturation isothermal remanence (SIRM), density, B:564  
 schistosity, Site 779, A:128  
 schlierenlike structures, basalt, A:183-184  
 seafloor spreading, West Philippine Basin, B:628-629  
 seamounts  
   faulting and distribution of, A:79  
   Izu-Bonin forearc, A:82-83  
   seismic stratigraphy, A:87-88  
   types of, A:79  
 seawater/rock interaction  
   chloride uptake and, B:377-378  
   geochemical effects, B:602-603, 605-606  
   mineralogic effects, B:359  
 sedimentary structures  
   Conical Seamount, B:348-349  
   post depositional, A:330  
   Site 778, A:110-111  
   Site 781, A:180-181  
   Site 784, A:276  
   Site 786, A:316; B:267, 270-271  
   tectonically related, B:349  
 sedimentation rate  
   Izu-Bonin forearc, B:617-620  
   Miocene-Holocene, B:619-620  
   Site 782, A:213, 221-222, 373; B:548  
   Site 786, A:332-333, 375  
   stages 1-4, B:60-62  
   tectonic correlation, B:271  
 seismic reflection profiling, A:42  
   basement, B:8, 276  
   comparison, synthetic seismogram, B:585-586  
   Conical Seamount, A:75-77  
   Izu-Bonin outer forearc, B:271  
   lithologic correlation, B:585-586, 589  
   Mariana forearc, B:6  
   Site 778, A:43, 45  
   Site 780, A:45-47  
   Site 781, A:42-45, 48-53, 180; B:294ff  
   Site 782, A:45, 55-57  
   Site 783, A:45, 58-61, 85  
   Site 785, A:45, 62-64  
   Site 786, A:46, 65-67; B:587  
 seismic stratigraphy  
   Izu-Bonin forearc, A:83-88  
   sequences 1-4, A:87-88, 92-93  
   Site 781, B:295  
 sepiolite, B:117  
   Site 779, B:355  
   Site 786, A:318; B:129  
 serpentine. *See also* antigorite; breccia, serpentine; chrysotile; clay, serpentine; lizardite  
   carbonate enrichment, A:281  
   classification, A:24  
   color variations, A:151-152  
   deformation, A:106-107; B:8  
   dehydration temperature, B:370  
   emplacement, B:10, 611  
   fault gouge mobilization, B:611  
   forearc terrane, B:9-10  
   intercalated pelagic sediment, B:358, 609-610, 652  
   interstitial-water chemistry, A:260  
   magnetic properties, A:108, 130  
   mineralogy, B:354-355, 358-359  
   origin and evolution, B:338, 340  
   physical properties, A:293  
   rheology, B:354, 359  
   silt-sized, B:605  
   Site 778, A:101  
   Site 779, A:117-119  
   Site 780, A:151-152, 372  
   Site 784, A:276  
   talc-bearing, B:435  
   in ultramafic rock, A:102, B:436  
 serpentine, aluminum-, Site 778, B:331-334  
 serpentine, magnesium-, Site 778, B:331-334  
 serpentine, phacoidal  
   deformation, A:261-263  
   magnetic properties, B:567, 576-577  
   rheology, A:264, B:352  
   Site 778, A:113  
   Torishima Forearc Seamount, B:354, 609  
 serpentine, unconsolidated  
   deformation, A:127-129  
   geochemistry, A:158  
 serpentine clasts  
   deformation, B:328  
   shape, A:106  
 serpentine diapirism, B:370  
   buoyancy halokinesis, B:363  
   mantle diapirs and, B:458  
   organic acids, B:387  
   petrogenetic model, B:465  
 serpentine flow  
   deformation, A:261-263  
   rheology, A:166-167  
   Site 779, A:119  
   structural features, A:368  
   superposed, B:340  
 serpentine matrix  
   deformation textures, A:166  
   geochemistry, A:281  
   Site 779, A:119-120  
 serpentine minerals, B:439-440  
 serpentine mud  
   alteration, B:600  
   Conical Seamount, B:343-344  
   flow units 1-6, B:358, 605  
   geochemistry, B:603-604  
   Mariana forearc seamounts, A:79  
   mineralogy, B:356-357, 605  
   petrography, B:600  
   rheology, A:72; B:610  
   Site 778, B:328  
   *in situ* alteration, B:355  
   X-ray diffraction, B:348-349  
 serpentine seamounts, B:8-10  
   emplacement, B:8, 611-612  
   formation, B:402, 431  
   horst block type, B:612  
   Mariana forearc, B:3  
   mud volcano type, B:611-612  
   physical properties, B:8  
 serpentine sediment  
   classification, B:563  
   deformation, A:127-129, 261-263, 289-290  
   demagnetization behavior, B:566-568  
   IRM acquisition behavior, B:565-566, 570  
   magnetic properties, B:561, 564-570  
   major-element geochemistry, B:334-336  
   mineralogy, B:331-334  
   physical properties, A:266  
   rheology, A:166-167, 290  
   Torishima Forearc Seamount, B:354  
 serpentine/sediment contact  
   magnetic properties, A:265  
   magnetic susceptibility, A:291, 293  
 serpentine tablet, Site 780, A:164-165  
 serpentinite  
   antigorite-rich, B:453  
   classification, A:24  
   deformation, A:290; B:611  
   diapiric rise, B:611  
   flow morphology, B:371  
   fracture zones, A:11  
   mafic components, B:604  
   magnetic properties, A:130  
   physical properties, A:11, 109, 293  
   rheology, B:363  
   Site 780, A:151-152; B:349  
   slow-spreading ridges, A:11  
 serpentinite, phacoidal sheared, Site 778, B:328  
 serpentinite, sedimentary  
   clast lithology, B:328  
   convergent margins, A:71  
   emplacement mechanism, A:71  
   geochemistry, B:337  
   interstitial-water chemistry, B:397  
   Mariana seamounts, B:343  
   regional comparisons, B:612-613  
   X-ray diffraction, B:329  
   serpentine diapirism  
   blueschist uplift and, B:426  
   Izu-Bonin forearc, A:81  
   physical properties, A:148  
 serpentinite mud, B:313-322  
   creep, B:369  
   critical-state soil mechanics, B:369  
   density, B:370  
   geochemistry, B:317  
   mechanical behavior, B:364  
   mineralogy, B:317  
   rheology, B:351, 365-366, 600-601  
 serpentinite seamounts  
   distribution, B:612  
   emplacement mechanisms, B:370  
   end-member types, A:11  
   forearc and, A:77-78; B:457-458  
   Mariana forearc, A:6  
   origin, A:11; B:595  
   structure, A:11  
 serpentinite sediment, land deposits, A:149  
 serpentinite/sediment boundary, Site 783, A:85-86  
 serpentinization  
   bladed-sheaf, A:165  
   chloride uptake during, A:160-162  
   effect on trace element distribution, B:490-491  
   felted-lath, A:165  
   of forearc mantles, B:402  
   harzburgites, A:121  
   Izu-Bonin forearc, A:90

- major element redistribution during, B:456  
*in situ*, B:359  
 textures, A: 164-165, 262-264  
 Torishima Forearc Seamount, B:8  
 ultramafic rock, A:133; B:431  
 vs. loss on ignition, A:125, 281  
 vs. silica, A:125
- shards  
 definition, B:675  
 Site 783, B:679
- shear, ductile, Site 786, A:331  
 shear bands, Site 778, A:107  
 shear planes, Site 778, B:328  
 shear strength  
 phacoidal serpentine, B:363  
 Site 784, A:293
- shear zones  
 Conical Seamount, B:347, 605  
 ductile, A:128, 288, 290, B:523, 527-529, 531  
 Site 786, A:330; B:265
- Shikoku Basin  
 opening, B:593  
 spreading, A:5; B:3
- sideromelane  
 definition, B:675  
 Site 783, B:679
- silica, B:124  
 in ash layers, B:279, 291-292  
 calcium-magnesium oxide relationships,  
 B:149-150  
 in serpentine sediments, B:334  
 Site 779, A:126  
 Site 783, A:260  
 smectite authigenesis and, B:128  
 sources, B:128, 130  
 in volcanic glass, B:136  
 vs. iron oxide/magnesium oxide ratio, B: 162  
 vs. magnesium oxide covariation, B:217  
 vs. trace element variation, B:224
- silica/magnesium oxide ratio  
 serpentine muds, B:317, 604  
 in serpentinized peridotite, B:334-338
- sill, basalt  
 classification, B:304-306  
 petrography, B:299
- silt, clayey, Site 784, A:275
- silt, serpentine  
 pore water, B:375  
 Site 780, B:349
- silt, vitric, Site 781, A:180, 182
- siltstone, clay-rich, deformation, A:154
- siltstone, vitric, deformation, A:285
- Site 208, Oligocene hiatuses, B:71  
 Site 210, Oligocene hiatuses, B:71  
 Site 287, Oligocene hiatuses, B:71  
 Site 290, andesitic breccia, B:628  
 Site 292  
 alkali basalt, B:629  
 Eocene-Oligocene sediments, B:71
- Site 296  
 andesitic breccia, B:628  
 calcareous nannofossils, B:20
- Site 334, magnetic properties, B:561  
 Site 395, pore waters, B:381  
 Site 438  
 chlorinity, A:162-163  
 pore waters, B:381  
 subsidence, B:77
- Site 439  
 chlorinity, A:162-163  
 pore waters, B:381  
 subsidence, B:77
- Site 445, foraminifers, B:71
- Site 446, foraminifers, B:71
- Site 448  
*Discoaster hamatus*, B:49  
 island-arc basement, B:628  
 island-arc tholeiite, B:402
- Site 449, island-arc tholeiite, B:402
- Site 450, *Discoaster hamatus*, B:49
- Site 453, lawsonite, B:426
- Site 458  
 arc tholeiites and boninite, A:199; B:6  
 basement, A:8; B:628  
 boninite, B: 182, 650, 652-653  
 boninitic-tholeiitic rock, B:232  
 igneous geochemistry, A207-208  
 iron-gabbros, B:406  
 LIL elements, B:303, 305  
 palygorskite, B:129  
 peridotite, B:501  
 tholeiitic andesites, B:155  
 Zirconium/samarium ratio, B:233
- Site 459  
 arc tholeiites and boninite, A:199; B:6  
 basement, A:8; B:628  
 igneous geochemistry, A207-208  
 LIL elements, B:303  
 palygorskite, B:129  
 peridotite, B:501
- Site 460  
 arc tholeiites and boninite, A:199  
 basement, A:8  
 benthic foraminifers, B:77  
 forearc subsidence, B:271  
 palygorskite, B:129  
 polymict assemblage, B:628  
 subsidence, B:77
- Site 461  
 arc tholeiites and boninite, A:199  
 basement, A:8  
 polymict assemblage, B:628
- Site 490  
 chlorinity, A:162  
 pore waters, B:381
- Site 491  
 chlorinity, A:162  
 pore waters, B:381
- Site 492, pore waters, B:381
- Site 496  
 chlorinity, A:162  
 pore waters, B:381
- Site 497  
 chlorinity, A:162  
 pore waters, B:381
- Site 504, ocean-floor metamorphism, B:426-427
- Site 516, *Reticulofenestra reticulata*, B:58
- Site 565  
 chlorinity, A:162  
 pore waters, B:381
- Site 568  
 chlorinity, A:162  
 gas hydrates, B:381
- Site 570  
 chlorinity, A:162  
 pore waters, B:381-382
- Site 592, Eocene-Oligocene sediments, B:71
- Site 637, passive margin serpentinite, A:11
- Site 670  
 magnetic properties, B:561  
 serpentinite, A:11
- Site 674, chlorinity, A: 162
- Site 679, chlorinity, A:162; B:382
- Site 682, chlorinity, A: 162; B:382
- Site 683, chlorinity, A: 162; B:382
- Site 685, chlorinity, A:162; B:382
- Site 688, chlorinity, A:162; B:382
- Site 732, serpentinite, A:11
- Site 734, serpentinite, A:11
- Site 778, A:97-114. *See also* geochemistry; interstitial-water chemistry; Magnetostratigraphy physical properties seismic reflection profiling thermal conductivity; velocity, water content  
 calcareous nannofossils, B:15-17  
 lithology, B:341, 509  
 lithostratigraphy, A:100-101, 109-110, 371; B:349, 563, 602-404  
 location, A8; B:327, 374, 431, 433, 450, 562  
 mafic rocks, B:402-409  
 metamorphic rocks, B:415-420, 425-426  
 mineralogy, B:423  
 objectives, B:598-599  
 peridotite, B:445-458, 466, 468, 474, 479, 489-505, 529-531  
 planktonic foraminifers, A:102  
 platinum-group elements, B:509-513  
 seismic reflection profiling, A:43, 45  
 serpentine sediments, B:331-337, 354-355  
 serpentinite mud, B:319  
 site summary, A:268-269; B:344, 347  
 trace elements, B:489-505  
 ultramafic rocks, B:431, 433-443
- Site 779, A:115-145. *See also* geochemistry; interstitial-water chemistry Magnetostratigraphy; physical properties; seismic reflection profiling; velocity  
 calcareous nannofossils, B:15-17  
 lithology, B:509, 522  
 lithostratigraphy, A:117-120, 132, 371; B:350, 520, 563, 602, 604-605  
 location, A:8; B:327, 374, 431, 433, 450, 562  
 mafic rocks, B:402-409  
 metamorphic rocks, B:415-420  
 mineralogy, B:423  
 objectives, B:598-599  
 peridotite, B:445-458, 466, 468-471, 474-475, 479-481, 489-505, 524-525, 529-531  
 platinum-group elements, B:509-513  
 rheology, B:365-371  
 serpentine, B:355, 358  
 serpentinite mud, B:320  
 site summary, A:369-370; B:347-349  
 trace elements, B:489-505  
 ultramafic rocks, B:431, 433-443
- Site 780, A: 147-178. *See also* geochemistry, interstitial-water chemistry Magnetostratigraphy; physical properties; seismic reflection profiling thermal conductivity, trace elements; velocity  
 calcareous nannofossils, B:15-17  
 lithostratigraphy, A:151-152, 175-177, 371; B:350, 520, 563, 600, 602  
 location, A8; B:327, 374, 431, 433, 450, 562  
 objectives, B:595  
 peridotite, B:445-458, 466, 471, 474-475, 481-482, 489-505, 524-525, 529-531  
 rheology, B:366-368  
 seismic reflection profiling, A:45-47  
 serpentine, B:355, 358-359  
 serpentinite mud, B:321, 365-366, 368-371  
 site summary, A:372; B:349, 351  
 trace elements, B:489-505  
 ultramafic rocks, B:431, 433-443
- Site 781, A:179-195. *See also* geochemistry, interstitial-water chemistry; Magnetostratigraphy; physical properties; seismic

- reflection profiling thermal conductivity; velocity  
 basalt, B:296-304  
 calcareous nannofossils, B:15-19  
 lithostratigraphy, A:180-182, 193, 195, 371; B:118  
 location, A:8; B:116, 294, 327, 374, 562  
 mineralogy, B:118-119  
 potassium-argon dating, B:296-297  
 seismic reflection profiling, A:42-45, 48-53; B:294-295  
 seismic stratigraphy, B:295  
 serpentinite mud, B:322  
 site summary, A:372-373
- Site 782, A: 197-252. *See also* geochemistry, interstitial-water chemistry; magnetostratigraphy; physical properties; seismic reflection profiling; thermal conductivity; water content  
 ash layers, B:279-287  
 calcareous nannofossils, B:18-22, 29-30, 50-52  
 diatoms, B:91, 93  
 geochemical logging, B:663, 666-667  
 lithostratigraphy, A:201-202, 221, 374; B:119, 547, 617-618  
 location, A:7, 370; B:102, 116, 144, 203-204, 278, 347, 548, 562  
 major-element geochemistry, B:120  
 mineralogy, B:119-120  
 radiolarians, B:95-96  
 sedimentation, B:617-619  
 seismic reflection profiling, A:45, 55-57  
 site summary, A:373  
 stable isotopes, B:246-253  
 trace elements, B:120-121, 253-258
- Site 783, A:253-272. *See also* geochemistry interstitial-water chemistry; magnetostratigraphy physical properties; seismic reflection profiling, thermal conductivity; velocity  
 calcareous nannofossils, B:18-19  
 diatoms, B:91, 93  
 lithology, B:509  
 lithostratigraphy, A:255-256, 374; B:352, 547, 608-609  
 location, A:7, 370; B:116, 347-348, 351-352, 375, 446, 548, 562  
 metamorphic rocks, B:420-423, 426  
 mineralogy, B:121  
 objectives, B:600  
 peridotite, B:445-458, 467, 471-472, 476-477, 482-483, 489-505  
 platinum-group elements, B:509-513  
 rheology, B:366-368, 609-610  
 seismic reflection profiling, A:45, 58-61, 85  
 seismic stratigraphy, A:87-88, 92-93  
 serpentine, B:355, 359  
 serpentinite mud, B:365-366, 368-371  
 site summary, A:373  
 trace elements, B:489-505
- Site 784, A:273-305. *See also* geochemistry, interstitial-water chemistry; magnetostratigraphy; physical properties; seismic reflection profiling; temperature; thermal conductivity; velocity  
 ash layers, B:279-287  
 calcareous nannofossils, B:18-19, 52  
 geochemistry, B:122  
 lithology, B:509  
 lithostratigraphy, A:275-277, 374; B:353, 547, 563, 609
- location, A:7, 370; B:102, 116, 144, 278, 347-348, 375, 446, 548, 562  
 metamorphic rocks, B:420-423, 426  
 mineralogy, B:121-122  
 objectives, B:600  
 peridotite, B:445-458, 467, 472-474, 477-478, 483-485, 489-505  
 planktonic foraminifers, A:277  
 platinum-group elements, B:509-513  
 radiolarians, B:96-102  
 rheology, B:366-368, 609-610  
 sedimentary sequence, B:617  
 sedimentation rate, B:620  
 serpentine, B:355, 359  
 serpentinite mud, B:365-366, 368-371  
 site summary, A:373, 375; B:352, 354  
 strontium isotopes, B:399  
 trace elements, B:489-505
- Site 785, A:307-312. *See also* geochemistry, interstitial-water chemistry; magnetostratigraphy; physical properties; seismic reflection profiling; velocity  
 calcareous nannofossils, B:18-35  
 diatoms, B:93-94  
 lithostratigraphy, A:309, 374  
 location, A:7, 370; B:347, 562  
 seismic reflection profiling, A:45, 62-64  
 site summary, A:375
- Site 786, A:313-363. *See also* geochemistry; interstitial-water chemistry; magnetostratigraphy; physical properties; thermal conductivity  
 ash layers, B:279-287  
 benthic foraminifers, B:74-76  
 calcareous nannofossils, B:18-35, 52-53, 71-74, 263  
 diatoms, B:93-94  
 forearc basement, B:206-208  
 forearc basement high, B:269-271  
 geochemical logging, B:663-664, 666, 670-671  
 igneous geochemistry, B:149-154, 158-161, 170-173, 212-213, 217, 222-223, 226-227  
 lithology, B:146-147, 589  
 lithostratigraphy, A:316-318, 338-339, 376-379; B:122, 144-149, 174-176, 214-216, 547, 619  
 location, A:7, 370; B:72, 102, 116, 144-145, 203-204, 278, 314, 347, 548  
 mineral melt equilibria, B:183-186  
 mineralogy, B:122, 124, 173-182  
 objectives, B:71  
 paleobathymetry, B:76-77  
 parental magma, B:227  
 petrography, B:173-182  
 planktonic foraminifers, B:73-74  
 potassium-argon dating, B:204-208  
 radiolarians, B:97, 103-104  
 sedimentary hiatuses, B:619  
 sedimentation rate, B:622  
 seismic reflection profiling, A:46, 65-67; B:585-589  
 site summary, A:375-378  
 stable isotopes, B:246-248  
 stratigraphic column, B:132-134, 206, 242-245  
 structure of basement, B:269-271  
 synthetic log, B:272  
 synthetic seismogram, B:585-587  
 temperature, A:372  
 trace elements, B:217-222, 232-233, 253-258, 681-682
- volcaniclastic rocks, B:264-269  
 Site 793, phosphate-yttrium enrichment, B:222  
 sjogrenite mineral group  
 Conical Seamount, B:600  
 in serpentinite muds, B:438  
 Site 778, B:354-355  
 Torishima Forearc Seamount, B:359  
 smectite  
 cerium deficiency, B:128-130  
 crystallinity, B:129  
 in iowaite, B:315  
 origin, B:124, 128  
 silica and formation of, B:129  
 Site 780, B:119  
 X-ray diffraction pattern, B:117-120
- sodium  
 in boninite, B:637, 641  
 shipboard vs. laboratory results, B:149  
 Site 779, A:126-127  
 Site 780, A:159  
 Site 784, A:284  
 sodium oxide  
 in volcanic glass, B:136  
 vs. titanium oxide, B:641, 644  
 vs. water content, B:137  
 sodium oxide/silica ratio, in ash sequences, B:288  
 sodium oxide/titanium dioxide ratio, Site 786, B:151
- sphene  
 Site 778, B:420, 424  
 Site 779, B:425
- spinel  
 chemical composition, B:464  
 in peridotite, B:455, 522  
 petrography, B:173  
 spinel, chrome  
 in boninite, B:229  
 in peridotite, B:450, 455-456, 468-473  
 in serpentinitized peridotite, B:563-564  
 Site 786, B:182  
 in ultramafic rocks, B:431
- stress/strain behavior, B:365  
 serpentinite mud, A:291; B:351, 370, 600  
 Torishima Forearc Seamount, B:609
- strontium  
 alteration effects, B:225  
 andesite-dacite-rhyolite series, B:227  
 in andesites, B:632  
 in diopsides, B:493  
 during boninite genesis, B:643  
 enrichment pattern, B:500  
 mobility, B:223  
 in peridotite, B:498-500  
 from peridotite clinopyroxenes, B:495-498  
 positive anomalies, B:492  
 in serpentine sediments, B:336  
 Site 784, A:281  
 vs. zirconium, B:223
- strontium/calcium ratio  
 in serpentine sediments, B:336  
 Site 778, B:340
- strontium isotopes  
 alteration effects, B:246-247  
 analytical methods, B:239, 242, 246  
 covariation, B:248-250  
 deep source, B:610  
 Izu-Bonin forearc, B:246-247  
 port waters, B:398-399, 603, 606, 610  
 sources, B:398-399
- strontium-lead isotope covariation, Izu-Bonin forearc, B:252-253, 259  
 strontium-neodymium isotope covariation  
 basalt sill, B:306

- Izu-Bonin forearc, B:259  
 strontium/ytterbium ratio, B:491-492  
 strontium/zirconium ratio, B:640  
 bronzite andesites, B:226  
 Izu-Bonin forearc, B:249  
 neodymium isotope covariation, B:256, 260  
 subduction  
 amphibole-bearing boundary layer, B:643-644  
 beneath active ridge crest, B:648-649  
 boninite genesis, B:623, 648-650  
 forearc wedge hydration during, B:610  
 of hot lithosphere, B:649-650  
 initiation, B:623, 629-631, 648-550  
 mass transfer processes, B:373  
 thermal models, B:384  
 subsidence  
 forearc basement high, B:271  
 forearc terranes, B:77  
 Izu-Bonin forearc, A:199; B:630  
 sulfate  
 Conical Seamount, B:384  
 pore waters, B:683-684, 688  
 Site 784, A:284  
 Torishima Seamount, B:381  
 vs. seawater, A:158-159, 161  
 sulfate/pH ratio, in platinum-palladium fluids,  
 B:511, 516-517  
 sulfate reduction  
 Site 779, A:126  
 Site 784, A:284  
 Site 786, A:329  
 sulfide, in vent fluids, A:148; B:8  
 sulfur  
 Site 779, A:125  
 Site 780, A:157  
 Site 781, A:187  
 Site 784, A:281-283  
 sulfur isotopes, pore waters, B:683-684, 688  
 Sumisu Rift, backarc basin basalt (BABB), B:138  
 superconducting quantum interference device  
 (SQUID), A:29-30  
 supra-subduction zone (SSZ) ophiolites  
 conditions of formation, B:6, 8  
 rare earth elements, B:487-488  
 vs. forearc peridotite, B:501-502, 504  
 synthetic seismogram, Site 786, B:585-587  
 tachylite  
 definition, B:675  
 Site 783, B:679  
 takovite, Site 778, B:354-355  
 talc-chlorite lenses, B:523  
 talc-serpentine, Site 778, A:102  
 tantalum/ytterbium ratio, Site 786, B:229-230  
 tectonic erosion  
 Izu-Bonin forearc, A:81  
 Mariana forearc, B:408  
 tectonic fabric, Site 779, A:138-139  
 tectonics  
 extensional, B:271  
 Izu-Bonin and Mariana forearcs, A:5-6  
 penetrative, A:121  
 postdepositional, B:271  
 transform-to-subduction transition, B:648, 652  
 temperature  
 Conical Seamount, B:376, 602  
 Site 780, A:169-176  
 Site 782, A:241  
 Site 783, A:266-267, 271  
 Site 784, A:293, 299, 302-303  
 Site 786, A:372  
 subduction, B:610-611  
 vs. thermal resistivity, A:177, 272, 304  
 temperature logging tool (TLT)  
 Site 780, A:169-174  
 Site 782, A:221  
 thermal conductivity  
 Site 778, A:109  
 Site 779, A:131, 143-144  
 Site 780, A:168, 171-172, 176  
 Site 781, A:191, 193  
 Site 782, A:213, 229, 242  
 Site 783, A:266, 272  
 Site 784, A:293, 299, 304  
 Site 786, A:333, 345, 347  
 thermal resistivity  
 Site 780, A:174, 176  
 Site 782, A:242  
 Site 783, A:272  
 Site 784, A:299, 304  
 temperature vs. integrated, A:177  
 vs. temperature, A:267  
 thermogravimetric analyses (TGA), B:316-317  
 tholeiite  
 Izu-Bonin-Mariana region, B:6  
 strontium isotopes, B:256  
 thomsonite, Site 779, B:425  
 thorium  
 alteration effects, B:225  
 logging data, B:665  
 Site 781, B:303-304  
 thorium/uranium ratio, Izu-Bonin forearc, B:248-  
 249  
 thorium/ytterbium ratio, Site 786, B:229  
 thorium-zirconium covariation, Izu-Bonin forearc,  
 B:248-249  
 thorium/zirconium ratio, B:369, 640  
 neodymium isotope covariation, B:254  
 Site 786, B:223  
 thulite, Site 783, A:255  
 Tinaquillo  
 lherzolite, B:637, 647  
 peridotite, B:164-165  
 titanium  
 in clinopyroxene, B:499-500  
 negative anomaly, B:633  
 positive anomalies, B:492  
 in serpentine sediments, B:334  
 shipboard vs. laboratory results, B:149  
 titanium oxide  
 basalt layer, B:299  
 in boninite, B:229  
 Izu-Bonin-Mariana region, B:154-155  
 mafic rocks, B:405-406  
 melting trends, B:227-228  
 Site 786, A:327  
 vs. sodium oxide, B:641, 644  
 titanium oxide/silica ratio, in ash sequences,  
 B:286-287  
 titanium oxide/sodium oxide ratio, Site 786, B:151  
 titanium-vanadium covariation, Mariana forearc,  
 B:408  
 titanium/ytterbium ratio, in clinopyroxenes, B:498  
 titanium-zirconium covariation, Mariana forearc,  
 B:408  
 titanium/zirconium ratio, B:369, 640  
 fractionation, B:230  
 Mariana-Bonin arc-basin system, B:256-257  
 neodymium isotope covariation, B:254-255,  
 258, 260  
 peridotite, B:493  
 Tonga forearc, tectonic erosion, B:408  
 Torishima forearc, bathymetry, B:448  
 Torishima Forearc Seamount  
 alteration and metamorphic processes, A:12  
 basement lithologies, B:448-449  
 bathymetry, B:10, 348, 375, 451, 599  
 boninite genesis, B:641-646  
 capping material, B:599-600  
 carbonate enrichment, B:377  
 fault blocks, B:344  
 formation, B:457, 611  
 geological setting, A:6; B:374-375  
 hydration, B:9  
 interstitial-water chemistry, B:381, 384  
 lithology, B:608-609  
 location, B:445  
 magma genesis, B:637-641  
 oxide petrography, B:563-564  
 peridotite, B:451, 456  
 petrology, B:610  
 pore-water chemistry, B:610  
 seismic reflection profiling, A:83-84, 86  
 seismic stratigraphy, A:83  
 serpentinization, B:8-10  
 strontium isotopes, B:398  
 structure and physical properties, B:609-610  
 subduction component, B:610  
 trace elements, B:318  
 alteration effects, B:222-224, 490-491  
 analytical methods, B:212-213, 488-489  
 andesites, B:213, 217-222  
 boninite, B:632-633  
 clay fraction, B:124  
 in clinopyroxenes, B:492-493  
 components A-C, B:639-640  
 enrichment patterns, B:491-493, 641-642  
 forearc terranes, A:11-12  
 high- vs. low-silica group, A:207  
 isotope ratios, B:256-257  
 isotopic end members, B:642  
 Izu-Bonin-Mariana forearc, B:232-233  
 mafic rock, A:104-105, 124-125  
 mantle source, B:229-232, 595, 597  
 multistage enrichment models, B:501-502  
 OIB-like source, B:232-232  
 peridotite, B:336-337, 339, 501, 634-635  
 pore waters, B:683-687  
 relative to N-MORB, A:185  
 Site 780, A:155-156  
 Site 782, B:120-121  
 Site 786, A:327-328; B:152-155, 218-219  
 stable isotope covariation, B:253-258, 260  
 subduction component, B:641-645  
 transport mechanism and enrichment of, B:233  
 ultramafic rock, A:104, 122-124, 258, 280-  
 281  
 volcanoclastic breccia, B:681-682  
 vs. silica variation, B:224  
 tuff, welded  
 flow-banding and microfaulting, A:330  
 Site 786, B:268-269  
 turbidites  
 Bouma sequences, A:180-181  
 Site 781, A:373  
 ultramafic rock  
 Conical Seamount, B:431-443  
 deformation, A:133, 164  
 geochemistry, A:103-104, 122-124, 154-155,  
 257-258, 280-281; B:435  
 Izu-Bonin forearc, A:9, 79  
 magnetic contribution, B:561, 563, 570  
 Mariana forearc, A:9, 79  
 metamorphism, A:75  
 mineralogy, B:434-438  
 petrography, B:431, 433, 435  
 petrology, A:121, 153-155, 256-257, 278-279  
 in serpentine deposits, B:355

## ultramafic rock (cont.)

## SUBJECT INDEX

serpentinization, B:343, 431, 435  
 Site 786, A:372  
 trace elements, A:104, 122-124, 258, 280-281  
 Umatac Formation, Mariana arc correlated, A:6;  
 B:207  
 Unst ophiolites, platinum-group elements, B:507  
 upwelling  
 pore waters, B:375-377  
 serpentinite seamounts, B:426  
 uranium, logging data, A:335; B:665  
 uranium-thorium covariation, Izu-Bonin forearc,  
 B:248-249  
 vanadium, Site 784, A:281  
 veinlets, sigmoidal, *en echelon* subvertical,  
 A:285, 287  
 veins  
 in serpentinite muds, B:609  
 serpentinization, A:164-165  
 Site 786, A:331  
 veins, antigorite, Site 779, A:128, 137  
 veins, chrysotile, Site 779, A:128, 135  
 veins, harzburgite, Site 779, A:128  
 veins, natrolite, Torishima Forearc Seamount,  
 B:423  
 veins, serpentine  
 Conical Seamount, B:431  
 Site 779, A:121-122  
 Site 780, A:165  
 Site 783, A:262-263; B:352  
 Site 784, A:290  
 in ultramafic rock, A:136  
 velocity  
 serpentinized peridotite, B:581-583  
 Site 778, A:109  
 Site 779, A:143  
 Site 780, A:167-168, 172  
 Site 781, A:191-192, 194  
 Site 783, A:266, 270  
 Site 784, A:293  
 Site 786, A:334, 348  
 vs. porosity, B:583  
 Vema fracture zone, hydrogrossular, B:333  
 vent fluids  
 Conical Seamount, A:148  
 geochemistry, A:148; B:507, 595, 597

hydrocarbons in, A:12  
 source, B:8  
 strontium isotopes, B:398-399  
 volatiles  
 along faults, B:611  
 Site 786, B:149  
 volcanic arcs, intraoceanic, formation, A:5  
 volcanoclastic rock  
 classification, A:23-24  
 depositional environment, B:269  
 Site 786, A:316-318; B:264-269  
 sources, B:267  
 volcanism. *See also* arc volcanism; mud volcan-  
 ism  
 arc evolution and, B:6  
 forearc models, B:308  
 Izu-Bonin arc, B:3  
 Mariana backarc basin, B:3  
 rifting and, B:208  
 Site 786, B:269-271  
 subduction and, A:199; B:208  
 volcanogenic sediment, rheology, B:366-368,  
 609-610  
 water content  
 alteration effects, B:137  
 of boninite mantle source, B:641  
 intermediate-calcium boninite, B:185  
 phase equilibria and, B:187  
 Site 778, A:109  
 Site 782, A:213  
 Site 786, B:132-134  
 of volcanic glass, B:136, 138  
 water-escape structures, Site 784, A:285, 289  
 winchite, Site 778, B:416, 418, 422, 423  
 Wolf Creek meteorite, reevesite, B:355  
 Wyoming, dolomitic oil shales, B:358  
 X-ray amorphous constituents, B:316  
 X-ray diffraction, A:32; B:313, 362  
 analytical methods, B:115  
 Site 778, A:101  
 Site 779, A:120  
 X-ray fluorescence, B:115, 316  
 analytical methods, A:32-35  
 xenolith

Conical Seamount, B:401, 407  
 peridotite, B:528-529  
 ytterbium/zirconium ratio, neodymium isotope co-  
 variation, B:255  
 yttrium  
 in boninite, B:229  
 mafic rocks, B:405-406  
 melting trends, B:227-228  
 phosphate enrichment, B:222-223, 225  
 positive anomalies, B:492  
 Site 786, A:327  
 yttrium/chromium ratio, mafic rock, A:104-105  
 yttrium/zirconium ratio, neodymium isotope co-  
 variation, B:254-255  
 Zambales ophiolite  
 Acoje Block, B:629  
 Coto Block, B:629  
 counterclockwise rotation, B:629  
 rare earth element depletion, B:233  
 trace elements, B:650, 652-653  
 zeolite  
 Site 779, B:419  
 Site 781, A:184  
 Site 786, A:318  
 zinc, Site 783, A:258  
 zirconium  
 boninite vs. bronzite andesites, B:226  
 enrichment, B:500, 640  
 mafic rocks, B:405-406  
 Pacific MORB mantle range, B:256  
 in peridotite, B:498-500  
 from peridotite clinopyroxenes, B:495-498  
 positive anomalies, B:492, 633  
 vs. strontium, B:223  
 zirconium-hafnium enrichment, B:229-230  
 zirconium/thorium ratio, Site 786, B:223  
 zirconium/titanium ratio, mafic rock, A:104-105  
 zirconium/ytterbium ratio, B:491-492  
 Site 786, B:229  
 zones, fossil. *See in* Taxonomic Index under  
 zones (for letter prefixes) and alphabeti-  
 cally (for generic-specific designations)

## TAXONOMIC INDEX

- abisectus*, *Cyclicargolithus*, n. comb., B:46  
*Acarinina bullbrooki*, Site 786, B:83, 90  
*acquilonium*, *Stylocontarium*, B:98, 110-111  
*Actinocyclus moronensis* Zone, Izu-Bonin forearc, B:94  
*Actinomma boreale*, B:98, 111  
*Actinomma* sp., B:112  
*aculeata*, *Siphonodasaria*, Site 786, B:81, 86  
*acuta*, *Pleurostomella*, Site 786, B:81, 86  
*acutus*, *Ceratolithus*  
 Izu-Bonin region, B:19-20  
 Site 782, B:50  
*aglaogena*, *Cyrtolagena*, B:109  
*aglaolampa*, *Cyrtolagena*, B:106  
*alabamensis*, *Hantkenina*, Site 786, B:83, 89  
*alata*, *Dorcadospyrus*, B:102, 108  
*alazanensis*, *Bulimina*, Site 786, B:80, 85  
*altus*, *Chiasmolithus*, Site 786, B:67  
*Amaurolithus amplificus*, Site 782, B:28  
*Amaurolithus asymmetricus*, Site 786, B:33  
*Amaurolithus bizzarus*, Site 782, B:31  
*Amaurolithus delicatus*  
 Izu-Bonin region, B:119  
 Site 782, B:28, 31, 40, 70  
 Site 786, B:33  
*Amaurolithus primus*  
 Izu-Bonin region, B:18  
 Site 782, B:31, 50  
*Amaurolithus primus* Subzone, B:49-50  
 Izu-Bonin region, B:19  
 Site 782, B:50  
*Amaurolithus* spp., Izu-Bonin region, B:20-21  
*Amaurolithus tamalis*, Site 786, B:33  
*Amaurolithus tricorniculatus*, Site 782, B:31, 70  
*Amphirhopalum ypsilon*, B:100, 109  
*Amphirhopalum ypsilon* Zone, Izu-Bonin forearc, B:97  
*amplificus*, *Amaurolithus*, Site 782, B:28  
*Anomalinoidea* sp., Site 786, B:81, 87  
*antarcticus*, *Dictyococcites*, B:35, 37, 40  
 Site 782, B:20  
*antepenultima*, *Didymocytis*, Izu-Bonin forearc, B:96  
*Anthocytidium ophirensis*, B:104, 111  
*arachnoidale*, *Hexacoentium*, B:98, 109, 112  
*aragonensis*, *Morozovella*, Site 786, B:83, 90  
*Archipilium quasimacropum* n. sp., B:106, 110  
*Astrophacus* sp., B:100, 108-109  
*asymmetricus*, *Amaurolithus*, Site 786, B:33  
*asymmetricus*, *Discoaster*, B:22, 35  
 Site 782, B:27, 34  
*auriculata*, *Otosphaera*, B:109, 112  
*auritus*, *Botryostrobus*, B:109  
 Leg 215, B:103  
*axotrias*, *Hexacoentium*, B:98, 111
- barbadiensis*, *Discoaster*, Site 782, B:67  
*berggrenii*, *Discoaster*  
 Site 782, B:27, 50  
 Site 786, B:52  
*bicorne*, *Pterocanium*, B:105, 110  
*bicorne*, *Stichopilium*, B:106, 110  
*bicornis*, *Clathrocyclas*, B:103, 110  
*biernigi*, *Pleurostomella*, Site 786, B:86  
*bimarginata*, *Cornutella*, B:105, 110  
*bisecta*, *Reticulofenestra*, B:46, 48, 59  
 Site 782, B:52, 68  
 Site 786, B:69  
*bisectus*, *Dictyococcites*, Site 782, A:205  
*bizzarus*, *Amaurolithus*, Site 782, B:31
- boreale*, *Actinomma*, B:98, 111  
*Botryostrobus auritus*, B:109  
 Leg 215, B:103  
*Botryostrobus bramlettei*, B:103, 109  
*Botryostrobus miralestensis*, B:103, 111  
*bouei*, *Pseudoolina*, Site 786, B:79, 84  
*bramlettei*, *Botryostrobus*, B:103, 109  
*brevis*, *Pleurostomella*, Site 786, B:86  
*bullbrooki*, *Discoaster*, B:22, 34  
 Site 782, A:204; B:25-26, 41, 70  
 Site 786, B:32  
*Bulimina alazanensis*, Site 786, B:80, 85  
*Bulimina glomarchallengeri*, Site 786, B:80, 85  
*Bulimina jarvisi*, Site 786, B:80, 85  
*Buliminella grata*, Site 786, B:80, 85  
*Buliminella grata spinosa*, Site 786, B:80, 85  
*bullbrooki*, *Acarinina*, Site 786, B:83, 90  
*bulloides*, *Pullenia*, Site 786, B:82
- calcaris*, *Discoaster*, Site 782, B:70  
*Calcidiscus leptoporus*  
 Site 782, B:20-21  
 Sites 783/784, B:18  
*Calcidiscus macintyreii*, B:25  
 Site 782, B:69  
*Calcidiscus macintyreii* Subzone, Site 782, B:25  
*Calocycleta costata*, B:103, 108  
*Calocycleta costata* Zone, Izu-Bonin forearc, B:95  
*calvertense*, *Eucyrtidium*, B:105, 111  
*calyculus*, *Catinaster*, B:49, 61  
 Site 782, B:70  
 Site 786, B:53  
*Campylosphaera dela*, Site 782, B:66  
*carcoselleensis*, *Globorotaloides*, Site 786, B:82, 88  
*caribbeanica*, *Gephyrocapsa*, Site 785, B:41  
*carinatus*, *Triquetrorhabdulus*, Site 782, B:69  
*Carpocanium kinugasense*, B:102, 109  
*Cassidulina havanensis*, Site 786, B:80, 85  
*Catapsydrax dissimilis*, Site 786, B:82, 88  
*Catinaster calyculus*, B:49, 61  
 Site 782, B:70  
 Site 786, B:53  
*Catinaster coalitus*, B:61-62  
 Site 782, B:50, 70  
 Site 786, B:53  
*Catinaster coalitus* Zone, B:49  
 Site 786, B:52-53  
*Catinaster mexicanus*, B:62  
 Site 782, B:70  
*Ceratolithus acutus*  
 Izu-Bonin region, B:19-20  
 Site 782, B:50  
*Ceratolithus acutus* Subzone, Izu-Bonin region, B:19-20  
*Ceratolithus cristatus*, B:31  
 Site 782, B:25  
*Ceratolithus cristatus* Subzone, Site 782, B:25  
*Ceratolithus rugosus* Subzone, Izu-Bonin region, B:20-21  
*Ceratolithus separatus*, B:31  
*Ceratolithus* spp.  
 Site 782, B:28  
 Site 786, B:33  
*cerroazulensis cocoaensis*, *Turborotalia*, Site 786, B:74, 83, 90  
*cerroazulensis pomeroli*, *Turborotalia*, Site 786, B:83, 90  
*Chiasmolithus altus*, Site 786, B:67
- Chiasmolithus expansus*, Site 786, B:66  
*Chiasmolithus grandis*, Site 786, B:66  
*Chiasmolithus oamaruensis*  
 Site 782, B:66  
 Site 786, B:67  
*Chiasmolithus oamaruensis* Subzone, B:46  
*Chiasmolithus solitus*, Site 782, B:67  
*Chrysalogonium* sp., Site 786, B:84  
*Cibicidoides eocaenus*, Site 786, B:82, 88  
*Cibicidoides praemundulus*, Site 786, B:76, 82, 88  
*ciperoensis*, *Sphenolithus*  
 Site 782, B:52  
 Site 786, B:68  
*circularis*, *Saturnalis*, B:99, 108  
*circumtexta*, *Periphyramis*, B:105, 111  
*Clathrocyclas bicornis*, B:103, 110  
*Clausicoccus fenestratus*, Site 786, B:68  
*Clausicoccus fenestratus* Subzone, Site 786, B:53  
*Clausicoccus fenestratus* Subzone- *Coccolithus formosus* Subzone, B:48  
*coalitus*, *Catinaster*, B:61-62  
 Site 782, B:50, 70  
 Site 786, B:53  
*Coccolithus formosus*, B:58  
 Site 786, B:68  
*Coccolithus miopelagicus* Subzone, B:49  
*Coccolithus pelagicus*, Site 782, B:20  
*Coccolithus staurion*, Site 782, B:67  
*Coccolithus staurion* Subzone, B:46, 616-617  
 Site 782, B:52  
*compacta*, *Helicosphaera*, Site 786, B:69  
*cornuta*, *Cyrtocapsella*, B:104, 109  
*Cornutella bimarginata*, B:105, 110  
*Cornutella profunda*, B:105, 110  
*corona*, *Siphostichoartus*, B:102, 109  
*corpulent*, *Globigerina*, Site 786, B:82, 88  
*Coscinodiscus gigas diorama* Zone  
 Izu-Bonin forearc, B:91  
 Site 782, A:205  
 Site 784, A:278  
*Coscinodiscus lewisianus* Zone, Site 782, A:205  
*Coscinodiscus yabei* Zone, Izu-Bonin forearc, B:94  
*costata*, *Calocycleta*, B:103, 108  
*Craspedodiscus coscinodiscus* Zone  
 Izu-Bonin forearc, B:94  
 Site 786, A320  
*crassicarinata*, *Pseudofissurina*, Site 786, B:79, 84  
*Cribohantkenina inflata*, Site 786, B:83, 89  
*crisiae*, *Dictyophimus*, B:105, 110-111  
*cristatus*, *Ceratolithus*, B:31  
*Cyclicargolithus abisectus* n. comb., B:46  
*Cyclicargolithus floridanus abisectus* n. comb., B:46, 48-49, 59, 62-63  
 Site 782, B:50, 52, 68-69  
 Site 786, B:53  
*Cyclicargolithus floridanus abisectus* Subzone, B:48  
 Site 782, B:52  
 Site 786, B:53  
*Cyclicargolithus floridanus floridanus*, B:62-63  
 Site 782, B:50, 68-69  
*Cyclicargolithus floridanus floridanus* Subzone, B:48, 58  
*cylindrica*, *Spongocore*, B:101, 109  
*Cyrtocapsella cornuta*, B:104, 109  
*Cyrtocapsella tetrapera*, B:104, 109  
*Cyrtolagena aglaogena*, B:109  
*Cyrtolagena aglaolampa*, B:106



- dela*, *Campylosphaera*, Site 782, B:66  
*delicatus*, *Amaurolithus*  
 Izu-Bonin region, B:18  
 Site 782, B:28, 31, 40, 70  
 Site 786, B:33  
*delmontensis*, *Stichocorys*, B:104, 109, 111  
*dentata*, *Dorcadospyrus*, B:102, 108  
*Diartus petterssoni*, B:99, 108  
 Izu-Bonin forearc, B:95-96  
*Dictyococcites antarcticus*, B:35, 37, 40  
 Site 782, B:20  
*Dictyococcites bisectus*, Site 782, A:205  
*Dictyocoryne profunda*, B:101, 109, 112  
*Dictyocoryne truncaturn*, B:101, 112  
*Dictyophimus crisiae*, B:105, 110-111  
*Didymocyrtis antepenultima*, Izu-Bonin forearc,  
 B:96  
*Didymocyrtis antepenultima* Zone, Izu-Bonin  
 forearc, B:96  
*Didymocyrtis laticonus*, B:99-100, 108  
*Didymocyrtis penultima*, B:99, 108  
*Didymocyrtis penultima* Zone, Izu-Bonin forearc,  
 B:96  
*Didymocyrtis* sp., B:108  
*Discoaster asymmetricus*, B:22, 35  
 Site 782, B:27, 34  
*Discoaster asymmetricus* Subzone, B:21-22  
*Discoaster barbadiensis*, Site 782, B:67  
*Discoaster berggrenii*  
 Site 782, B:27, 50  
 Site 786, B:52  
*Discoaster berggrenii* Subzone, B:49  
 Site 782, B:50  
*Discoaster bifax* Subzone, B:46, 617  
*Discoaster brouweri*, B:22, 34  
 Site 782, A:204, B:25-26, 41, 70  
 Site 786, B:32  
*Discoaster calcaris*, Site 782, B:70  
*Discoaster exilis* Zone, Site 782, B:50  
*Discoaster hamatus*, B:49  
 Site 782, B:50, 70  
*Discoaster hamatus* Zone, B:49  
 Site 782, B:50  
 Site 786, B:52-53  
*Discoaster kugleri*, Site 782, B:50  
*Discoaster kugleri* Subzone, B:49  
 Site 782, B:50  
 Site 786, B:53  
*Discoaster pentaradiatus*, B:22, 35  
 Site 781, B:34  
 Site 782, B:26  
 Site 786, B:32  
*Discoaster pentaradiatus* Subzone, Site 782,  
 B:23, 25  
*Discoaster quinqueramus*, B:28  
 Site 782, B:27, 50  
 Site 786, B:69  
*Discoaster quinqueramus* Zone, Site 786, B:52  
*Discoaster saipanensis*, Site 786, B:67  
*Discoaster saipanensis* Subzone, B:46  
*Discoaster surculus*, B:35  
 Site 782, B:26  
 Site 786, B:32, 40  
*Discoaster surculus* Subzone, B:23  
*Discoaster tamalis*, B:22-23  
 Leg 25, B:35  
 Site 782, B:27, 34  
*Discoaster tamalis* Subzone, B:22-23  
*Discoaster triradiatus*, Site 782, B:25, 41  
*Discoaster variabilis*, B:20, 22, 34  
 Site 782, B:26  
 Site 786, B:32  
*dissimilis*, *Catapsydrax*, Site 786, B:82, 88
- distentus*, *Sphenolithus*, B:58  
 Site 782, B:52, 68  
*Dorcadospyrus alata*, B:102, 108  
*Dorcadospyrus alata* Zone, Izu-Bonin forearc,  
 B:95-97  
*Dorcadospyrus dentata*, B:102, 108
- Ellipsodimorphina* sp., Site 786, B:85  
*Ellipsoglandulina* sp., Site 786, B:85  
*Ellipsoidina* sp., Site 786, B:86  
*elongata*, *Lychnocanoma*, B:106, 108  
*Emiliania annula* Subzone, Site 782, B:25  
*Emiliania huxleyi*  
 Site 781, B:15  
 Site 782, B:18  
*Emiliania huxleyi* Zone, B:28  
*Emiliania ovata* Subzone, B:25  
*eocaena*, *Subbotina*, Site 786, B:82, 88  
*eocaenus*, *Cibicidoides*, Site 786, B:82, 88  
*Ethmodiscus rex*  
 Mariana region, B:91  
 Site 779, A:121  
*euapertura*, *Subbotina*, Site 786, B:82, 88  
*Eucyrtidium calvertense*, B:105, 111  
*Eucyrtidium hexagonatum*, B:105, 110  
*Eucyrtidium hexastichum*, B:105, 111  
*Eucyrtidium matuyamai*, B:105, 111  
*Eucyrtidium punctatum*, B:105, 110  
*euphratis*, *Helicosphaera*, Site 786, B:69  
*expansus*, *Chiasmolithus*, Site 786, B:66
- fenestratus*, *Clausicoccus*, Site 786, B:68  
*floridanus abisectus*, *Cyclicargolithus*, n. comb.,  
 B:46, 48-49, 59, 62-63  
 Site 782, B:50, 52, 68-69  
 Site 786, B:53  
*floridanus floridanus*, *Cyclicargolithus*, B:62-63  
 Site 782, B:50, 68-69  
*formosus*, *Coccolithus*, B:58  
 Site 786, B:68  
*fossilis*, *Scapholithus*, Site 782, B:40
- Gephyrocapsa caribbeanica*, Site 785, B:41  
*Gephyrocapsa caribbeanica* Subzone, Izu-Bonin  
 region, B:25  
*Gephyrocapsa oceanica*  
 Site 782, B:18, 25  
 Site 785, B:41  
*Gephyrocapsa* Zone, small  
 Site 782, B:25  
 Site 783, A:256  
*gigas*, *Spongodiscus*, B:101, 112  
*girardanus*, *Gyroidinoides*, Site 786, B:81, 87  
*Globigerina corpulenta*, Site 786, B:82, 88  
*Globigerina praeturritilina*, Site 786, B:82, 88  
*Globigerina* sp., Site 786, B:88  
*Globigerina tripartita*, Site 786, B:82, 89  
*Globigerinatheka mexicana barri*, Site 786, B:83,  
 89  
*Globigerinatheka mexicana mexicana*, Site 786,  
 B:82-83, 89  
*Globobulimina* sp., Site 786, B:85  
*Globocassidulina subglobosa*, Site 786, B:74, 76-  
 77, 80, 85  
*Globorotalia menardii*, sinistral coiling, A:120  
*Globorotalia truncatulinoides*  
 Site 778, A:102  
 Site 785, A:309  
*Globorotaloides carcoselleensis*, Site 786, B:82,  
 88  
*glomarchallengeri*, *Bulimina*, Site 786, B:80, 85  
*grandis*, *Chiasmolithus*, Site 786, B:66  
*grata*, *Buliminella*, Site 786, B:80, 85
- grata spinosa*, *Buliminella*, Site 786, B:80, 85  
*Gyroidinoides girardanus*, Site 786, B:81, 87  
*Gyroidinoides* sp., Site 786, B:87
- Haeckeliella* sp., B:112  
*hamatus*, *Discoaster*, B:49  
 Site 782, B:50, 70  
*Hantkenina alabamensis*, Site 786, B:83, 89  
*havanensis*, *Cassidulina*, Site 786, B:80, 85  
*Helicosphaera ampliapertura* Zone, B:48-49, 617,  
 619  
*Helicosphaera compacta*, Site 786, B:69  
*Helicosphaera euphratis*, Site 786, B:69  
*Helicosphaera hyalina*, Site 785, B:41  
*Helicosphaera inversa*, B:25  
 Site 785, B:41  
*Helicosphaera kamptneri*, Site 782, B:69  
*Helicosphaera neogranulata*, Site 785, B:41  
*Helicosphaera sellii*, B:25  
*heteromorphus*, *Sphenolithus*, Site 782, B:70  
*Hexacantium arachnoidale*, B:98, 109, 112  
*Hexacantium axotrias*, B:98, 111  
*hexagonatum*, *Eucyrtidium*, B:105, 110  
*hexastichum*, *Eucyrtidium*, B:105, 111  
*huxleyi*, *Emiliania*  
 Site 781, B:15  
 Site 782, B:18  
*hyalina*, *Helicosphaera*, Site 785, B:41
- incrassata*, *Pleurostomella*, Site 786, B:81, 86  
*inflata*, *Cribrorhantkenina*, Site 786, B:83, 89  
*inversa*, *Helicosphaera*, B:25  
 Site 785, B:41  
*Isthmolithus recurvus* Subzone, B:46, 48  
 Site 782, B:52
- japonica*, *Pontosphaera*, B:25  
*jarvisi*, *Bulimina*, Site 786, B:80, 85  
*junonis*, *Lamprocyclus*, B:104, 109, 112
- kamptneri*, *Helicosphaera*, Site 782, B:69  
*Karrerella subglabra*, Site 786, B:79, 84  
*kinugasense*, *Carpocanium*, B:102, 109  
*korotnevi*, *Pterocanium*, B:105, 112  
*kugleri*, *Discoaster*, Site 782, B:50
- lacunosa*, *Pseudoemiliania*, B:22, 25  
*Laevidentalina* sp., Site 786, B:84  
*Lamprocyclus junonis*, B:104, 109, 112  
*Lamprocyclus margatensis*, B:103-104, 110  
*Lamprocyclus maritalis maritalis*, B:104, 110  
*Lamprocyclus maritalis polypora*, B:104, 109  
*Lamprocyclus* sp., B:109  
*laticonus*, *Didymocyrtis*, B:99-100, 108  
*Lenticulina* sp., Site 786, B:80, 85  
*Lenticulina* spp., Site 786, B:74, 76  
*leptoporus*, *Calcidiscus*  
 Site 782, B:20-21  
 Sites 783/784, B:18  
*linaperta*, *Subbotina*, Site 786, B:82, 89  
*Liriospyris mutuarina*, B:101, 108  
*Liriospyris* sp., B:108  
*Lithopera neotera*, B:105, 108  
*Lychnocanium nipponicum*, B:106, 110, 112  
*Lychnocanoma elongata*, B:106, 108
- macintyreii*, *Calcidiscus*, B:25  
 Site 782, B:69  
*margatensis*, *Lamprocyclus*, B:103-104, 110  
*maritalis maritalis*, *Lamprocyclus*, B:104, 110  
*maritalis polypora*, *Lamprocyclus*, B:104, 109  
*matuyamai*, *Eucyrtidium*, B:105, 111  
*menardii*, *Globorotalia*, sinistral coiling, A:120

- mexicana*, *Osangularia*, Site 786, B:82, 87  
*mexicana barri*, *Globigerinatheka*, Site 786, B:83, 89  
*mexicana mexicana*, *Globigerinatheka*, Site 786, B:82-83, 89  
*mexicanus*, *Catinaster*, B:62  
 Site 782, B:70  
*micra*, *Pseudohastigerina*, Site 786, B:74, 83, 89  
*milowii*, *Triquetrorhabdulus*, Site 782, B:69  
*miralestensis*, *Botryostrobus*, B:103, 111  
*Morozovella aragonensis*, Site 786, B:83, 90  
*Morozovella spinulosa*, Site 786, B:74, 83, 90  
*mutuaria*, *Liriospyris*, B:101, 108
- naguwichensis*, *Pseudohastigerina*, Site 786, B:74, 83, 89  
*neogranulata*, *Helicosphaera*, Site 785, B:41  
*neotera*, *Lithopera*, B:105, 108  
*nipponicum*, *Lychnocanium*, B:106, 110, 112  
*Nitzschia jouseae* Zone  
 Izu-Bonin forearc, B:94  
 Site 782, A:205  
 Site 786, A:320  
*Nitzschia miocenica* Zone, Izu-Bonin forearc, B:91, 94  
*Nitzschia porteri* Zone, Izu-Bonin forearc, B:94  
*Nitzschia reinholdii* Zone  
 Izu-Bonin forearc, B:91, 94  
 Site 783, A:256  
 Site 784, A:277  
 Site 785, A:309  
 Site 786, A:320  
*Nodogenerina* sp., Site 786, B:86  
*Nodosarella* sp., Site 786, B:86  
*Nuttallides truempyi*, Site 786, B:81, 87
- oamaruensis*, *Chiasmolithus*  
 Site 782, B:66  
 Site 786, B:67  
*oceanica*, *Gephyrocapsa*  
 Site 782, B:18, 25  
 Site 785, B:41  
*onusta*, *Reticulofenestra*, Site 782, B:66  
*Oolina* sp., Site 786, B:79, 84  
*ophirensis*, *Anthocyrtidium*, B:104, 111  
*orcinam*, *Pterocanium*, B:105, 110, 112  
*Oridorsalis umbonatus*, Site 786, B:82, 87  
*Osangularia mexicana*, Site 786, B:82, 87  
*Otosphaera auriculata*, B:109, 112  
*Otosphaera* sp., B:112
- Palliolatella* sp., Site 786, B:79, 84  
*paucicostata*, *Plectofrondicularia*, Site 786, B:79, 84  
*pelagicus*, *Coccolithus*, Site 782, B:20  
*pentaradiatas*, *Discoaster*, B:22, 35  
 Site 781, B:34  
 Site 782, B:26  
 Site 786, B:32  
*pentas*, *Spongaster*, B:100, 111  
*penultima*, *Didymocyrtis*, B:99, 108  
*peregrina*, *Stichocorys*, B:104, 111  
*Peripyraxis circumtexta*, B:105, 111  
*peterssoni*, *Diartus*, B:99, 108  
 Izu-Bonin forearc, B:95-96  
*Plectofrondicularia paucicostata*, Site 786, B:79, 84  
*Pleurostomella acuta*, Site 786, B:81, 86  
*Pleurostomella bierigi*, Site 786, B:86  
*Pleurostomella brevis*, Site 786, B:86  
*Pleurostomella incrassata*, Site 786, B:81, 86  
*Pleurostomello* sp., Site 786, B:86  
*Pontosphaera japonica*, B:25  
*praecursor*, *Pulleniatina*, Site 785, A:309  
*praemundulus*, *Cibicoides*, Site 786, B:76, 82, 88  
*praetextum eucolpum*, *Pterocanium*, B:105, 112  
*praeturritina*, *Globigerina*, Site 786, B:82, 88  
*predistentus*, *Sphenolithus*  
 Site 782, B:68  
 Site 786, B:53  
*primus*, *Amaurolithus*  
 Izu-Bonin region, B:18  
 Site 786, B:31, 50  
*profunda*, *Cornutella*, B:105, 110  
*profunda*, *Dictyocoryne*, B:101, 109, 112  
*Pseudoemiliana lacunosa*, B:22, 25  
*Pseudoeonotia doliolus* Zone  
 Izu-Bonin forearc, B:91, 94  
 Site 782, A:205  
 Site 784, A:277  
 Site 785, A:309  
*Pseudofissurina crassicarinata*, Site 786, B:79, 84  
*Pseudohastigerina micra*, Site 786, B:74, 83, 89  
*Pseudohastigerina naguwichensis*, Site 786, B:74, 83, 89  
*Pseudonodosaria* sp., Site 786, B:84  
*Pseudoolina bouei*, Site 786, B:79, 84  
*pseudoradians*, *Sphenolithus*, Site 786, B:67  
*pseudoumbilica*, *Reticulofenestra*, Site 782, A:204, B:21, 35, 37  
 Izu-Bonin region, B:19-20  
*Pterocanium bicorne*, B:105, 110  
*Pterocanium kotrnevi*, B:105, 112  
*Pterocanium orcinum*, B:105, 110, 112  
*Pterocanium praetextum eucolpum*, B:105, 112  
*Pterocanium* sp., B:110  
*Pteroconium trilobum*, B:105, 110, 112  
*Pullenia bulloides*, Site 786, B:82  
*Pullenia quinqueloba*, Site 786, B:82, 87  
*Pulleniatina praecursor*, Site 785, A:309  
*punctatum*, *Eucyrtidium*, B:105, 110  
*Pygmaeoseistron* sp., Site 786, B:84  
*pyramidalis*, *Quadratobuliminella*, Site 786, B:80, 85  
*Pyramidulina* sp., Site 786, B:84
- Quadratobuliminella pyramidalis*, Site 786, B:80, 85  
*quasimacropum*, *Archipilium*, n. sp., B:106, 110  
*quinqueloba*, *Pullenia*, Site 786, B:82, 87  
*quinqueramus*, *Discoaster*, B:28  
 Site 782, B:27, 50  
 Site 786, B:69
- reticulata*, *Reticulofenestra*  
 Site 786, B:58, 67  
 size variation, B:61  
*Reticulofenestra bisecta*, B:46, 48, 59  
 Leg 25, B:46  
 Site 782, B:52, 68  
 Site 786, B:69  
*Reticulofenestra bisecta/Cyclicargolithus floridanus* abisectus boundary, B:59  
*Reticulofenestra bisecta* Subzone, B:48, 58  
*Reticulofenestra onusta*, Site 782, B:66  
*Reticulofenestra pseudoumbilica*, Site 782, A:204; B:21, 35, 37  
 Izu-Bonin region, B:19-20  
*Reticulofenestra reticulata*  
 Site 786, B:58, 67  
 size variation, B:61  
*Reticulofenestra samodurovii*, Site 782, B:67  
*Reticulofenestra umbilica*, B:58  
 Site 786, B:68  
*Reticulofenestra umbilica* Zone  
 Site 782, B:52  
 Site 786, B:53  
*rex*, *Ethmodiscus*  
 Mariana region, B:91  
 Site 779, A:121  
*Rhizosolenia praebergonii* Zone  
 Izu-Bonin forearc, B:91, 94  
 Site 782, A:205  
 Site 783, A:256  
 Site 784, A:277  
*rugosus*, *Triquetrorhabdulus*, Site 782, B:70
- saipanensis*, *Discoaster*, Site 786, B:67  
*samodurovii*, *Reticulofenestra*, Site 782, B:67  
*Saturmalis circularis*, B:99, 108  
*Scapholithus fossilis*, Site 782, B:40  
*sellii*, *Helicosphaera*, B:25  
*separatus*, *Ceratolithus*, B:31  
*Siphonodosaria aculeata*, Site 786, B:81, 86  
*Siphonodosaria* sp., Site 786, B:86  
*Siphonodosaria verneuilii*, Site 786, B:81, 86  
*Siphonosphaera spinosa*, B:97-98, 109  
*Siphostichoaster corona*, B:102, 109  
*sol*, *Stylotrochus*, B:100, 112  
*solitus*, *Chiasmolithus*, Site 782, B:67  
*Sphenolithus ciperogensis*  
 Site 782, B:52  
 Site 786, B:68  
*Sphenolithus distentus*, B:58  
 Site 782, B:52, 68  
*Sphenolithus heteromorphus*, Site 782, B:70  
*Sphenolithus heteromorphus* Zone, B:49  
 Site 782, B:50  
 Site 786, B:53  
*Sphenolithus predistentus*  
 Site 782, B:68  
 Site 786, B:53  
*Sphenolithus predistentus-Sphenolithus distentus* Zones, B:48  
 Site 782, B:52  
*Sphenolithus pseudoradians*, Site 786, B:67  
*spinosa*, *Siphonosphaera*, B:97-98, 109  
*spinosa*, *Vulvulina*, Site 786, B:79, 84  
*spinulosa*, *Morozovella*, Site 786, B:74, 83, 90  
*Spiroplectamina* sp., Site 786, B:79, 84  
*Spongaster pentas*, B:100, 111  
*Spongaster pentas* Zone, Izu-Bonin forearc, B:97  
*Spongaster tetras tetras*, B:100, 109, 112  
*Spongocore cylindrica*, B:101, 109  
*Spongodiscus gigas*, B:101, 112  
*staurion*, *Coccolithus*, Site 782, B:67  
*Stichocorys delmontensis*, B:104, 109, 111  
*Stichocorys peregrina*, B:104, 111  
*Stichocorys peregrina* Zone, Izu-Bonin forearc, B:96  
*Stichocorys* sp., B:112  
*Stichopilium bicorne*, B:106, 110  
*Stilostomella subspinosa*, Site 786, B:81, 86  
*Stylocarium acquilonium*, B:98, 110-111  
*Stylotrochus sol*, B:100, 112  
*Subbotina eocaena*, Site 786, B:82, 88  
*Subbotina euapertura*, Site 786, B:82, 88  
*Subbotina linaperta*, Site 786, B:82, 89  
*Subbotina* spp., Site 786, B:74  
*subglabra*, *Karrerella*, Site 786, B:79, 84  
*subglobosa*, *Globocassidulina*, Site 786, B:74, 76-77, 80, 85  
*subspinosa*, *Stilostomella*, Site 786, B:81, 86  
*surculus*, *Discoaster*, B:35  
 Site 782, B:26  
 Site 786, B:32, 40
- tamalis*, *Amaurolithus*, Site 786, B:33

- tamalis, Discoaster*, B:22-23  
 Leg 25, B:35  
 Site 782, B:27, 34
- tetrapera, Cyrtocapsella*, B:104, 109
- tetras tetras, Spongaster*, B:100, 109, 112
- Thalassiosira convexa* Zone  
 Izu-Bonin forearc, B:91  
 Site 786, A:320
- Theocorythium trachelium trachelium*, B:103, 111
- Theocorythium vetulum*, B:103, 109
- Theocyrtis* sp., B:103, 110
- trachelium trachelium, Theocorythium*, B:103, 111
- tricorniculatus, Amaurolithus*, Site 782, B:31, 70
- trilobum, Pterocanium*, B:105, 110, 112
- tripartita, Globigerina*, Site 786, B:82, 89
- Triquetrorhabdulus carinatus*, Site 782, B:69
- Triquetrorhabdulus milowii*, Site 782, B:69
- Triquetrorhabdulus rugosus*, Site 782, B:70
- triradiatus, Discoaster*, Site 782, B:25, 41
- truempii, Nuttallides*, Site 786, B:81, 87
- truncatulinooides, Globorotalia*  
 Site 778, A:102  
 Site 785, A:309
- truncatum, Dictyocoryne*, B:101, 112
- Turborotalia cerroazulensis cocoaensis*, Site 786, B:74, 83, 90
- Turborotalia cerroazulensis pomeroli*, Site 786, B:83, 90
- umbilica, Reticulofenestra*, B:58  
 Site 786, B:68
- umbonatus, Oridorsalis*, Site 786, B:82, 87
- variabilis, Discoaster*, B:20, 22, 34  
 Site 782, B:26  
 Site 786, B:32
- verneuli, Siphonodosaria*, Site 786, B:81, 86
- vetulum, Theocorythium*, B:103, 109
- Vulvulina spinosa*, Site 786, B:79, 84
- ypsilon, Amphirhopalum*, B:100, 109
- zones (with letter prefixes)  
 CN2, B:617, 619  
 CN4, A:204-205, 319  
 CN5, A:205, 319  
 CN6, A:204  
 CN9, A:318  
 CN9b, B:18  
 CN10a, B:52  
 CN10b, A:318  
 CN11b, A:182; B:15  
 CN12, A:182, 277, 318; B:22  
 CN12a, B:15  
 CN13a, A:204  
 CN13b, A:318  
 CN14, A:120, 203, 309
- CN14a, A:101, 182, 277, 318; B:15, 18-19, 615-616  
 CN14b, A:152  
 CN15, A:152, 182, 203, 309; B:615-616  
 CN7/CN8 boundary, A:204  
 CN8/CN9 boundary, A:204  
 CN12/CN13 boundary, A:204  
 CP14, A:205, 256, 319; B:58, 619  
 CP15, A:205, 256, 319; B:53, 58-59  
 CP16, A:205  
 CP16a, A:319  
 CP18, A:319  
 CP19, A:205, 319; B:52-53  
 N17, A:183  
 N18, A:183  
 N19, A:183  
 N21, A:102, 183  
 N22, A:102, 120, 309  
 P10, B:74, 616-617  
 P11, B:74  
 P14, A:205; B:74  
 P15, B:74  
 P16, A:205, 320; B:74  
 P17, A:320; B:74  
 P18, B:74  
 P19, B:74  
 P20, B:74  
 P22, A:205, 320