

## Index

- Age of Copper, 48–49  
 Akha peoples, 191  
 Akurgal, E., 227  
 alcohol  
   during funeral feasts, 107, 292–293  
   production of, 262  
 Alişar paradigm, 233–239  
   İkiztepe settlement and, 229–230, 234–237  
 Alkim, U. B., 230  
 alloys  
   with arsenic, 90–92, 289  
   copper, 90–94, 214–215  
   with lead, 92–93  
   in metallurgy, 90–94  
   with nickel, 286  
   with silver, 93–94  
   in western coastal region, 214–215  
 Anatolian coastal region, 12–14  
   *See also* Dündartepe settlement;  
   İkiztepe settlement  
 Alişar paradigm, 233–239  
 archaeological fieldwork in, 227–232  
 cereal grains in, 244  
 during chalcolithic period, 233–234  
 climate of, 12, 243–244  
 domestic architecture in, 240–241  
 European influences on, 253–256  
 farming practices, 41–42, 244  
 food gathering in, 243–245  
 food storage in, 245–246  
 grave sites in, 241–243  
 hunting practices in, 245  
 Kolkheti lowlands, 14  
 metallurgy in, 250–253  
 millet use, 244  
 pottery in, 237–238, 248, 255–256  
 precipitation levels on, 12, 13–14  
 radiocarbon dating for, 238–239  
 settlement patterns in, 239–243  
 smelting in, 250–251, 315  
 SRAP in, 228  
 topography of, 12–13  
 weaving tools in, 246–248  
 animals, domestication of, 33.  
   *See also* milk production  
   breeding and, 277  
   in grasslands regions, 145–147  
   herding practices, 146, 298  
   in lower Kuban valley, 68–72, 283  
   in Maikop culture, for transport, 103–104  
   tool development for, 34–35, 277  
   transhumance pastoralism and, 70  
   in western coastal region, 194–195  
 animal depictions, on artifacts, 110–113, 114–115, 293  
 animal transport  
   development of, 266–268  
   with hitches, 267  
   in Maikop culture, 103–104  
   with shaft draught system, 267  
   in wheeled vehicles, 103–104, 291–292  
 architecture, domestic  
   in Anatolian coastal region, 240–241  
   at Dündartepe settlement, 240–241  
   in grasslands regions, 160–161  
   at İkiztepe settlement, 240–241  
   in Majaki settlement, 212  
   pit houses, 160–161, 300  
   in Usatovo culture, 179–180, 211–212  
   wagons as, 300  
   in western coastal region, 178, 211–212  
 arsenic copper, 90–92, 289, 308–309  
 Asia, southwest region  
   farming technology in, 31–35  
   food technology in, 35–37  
   lithic technology in, 37–38  
   pyrotechnology in, 38–40  
   technological developments in, 31–41  
   textile development, 37  
 axes. *See specific axes*

- Azov, Sea of, 8
- Azov steppes, habitation sites in, 55–60
- Balkan coastal region  
copper archaeology in, 43, 278  
farming along, 42–43
- Bauer, A., 229
- beads. *See* faience
- beneficiation, of copper, 87–90
- biodiversity  
in Black Sea, 16–17  
in grasslands regions, 9–10  
human impact on, 274  
in western coastal region, 11
- Black Sea. *See also* Anatolian coastal region; Balkan coastal region; grasslands regions; Kuban valley, lower; sea level changes; western coastal region  
Age of Copper for, 48–49  
biodiversity in, 16–17  
maritime trading routes for, 48  
Mediterranean water in, 15  
during Neoeuxinian stage, 14  
New Black Sea stage, 15  
Old Black Sea stage, 14–15
- Boltenko, M. F., 170
- Budde, L., 227
- burial mounds. *See* grave sites
- Burney, C., 227, 229, 230
- Bzhanian, V. V., 232
- carnelian, 295
- casting of metal, 94  
in western coastal region, 214–215
- cattle. *See* animals, domestication of
- Caucasian coast. *See also* Kuban valley, lower  
aceramic period on, 47–48  
farming technology on, 46–48  
grave sites along, 65–66  
Great Khorasan Road and, 121–129  
lithic technology on, 46–47  
Shulaveri-Shomutepe culture and, 46
- cemeteries. *See also* funerals; funeral feasts, in Maikop culture; grave sites  
along Caucasian coast, 65–66  
ceramics in, 63–65  
funeral feasts in, 62–63, 67–68, 104–108  
in lower Kuban valley, 60–66  
for Maikop culture, 53–55, 65, 66–67, 108  
at Majaki site, 191  
stone grave architecture, in north Black Sea region, 162–164  
in Usatovo culture, 191
- ceramics. *See also* pottery  
on Anatolian coast, 42  
on Caucasian coast, 47–48  
for Cernavoda III culture, 209  
coiling in production of, 78  
development of, 264–265  
in grasslands regions, 150–153  
at grave sites, 63–65  
in lower Kuban valley, 78–86  
in Maikop culture, 51–53, 54  
in northern lowlands, 44–45  
pyrotechnology for, 40  
social practices through, 220  
in Usatovo culture, 203–208
- ceramic ecology, 275
- cereal grains  
in Anatolian coastal region, 244  
components of, 35  
cultivation of, 32–33  
food storage for, 71–72  
in grasslands regions, 144–145  
ground stone technology for, 35, 72  
LAB fermentation and, 261–262, 316  
in lower Kuban valley, 69  
maize, 244  
at Majaki site, 192–193  
milk consumption and, 36–37  
millet, 244  
in northern lowlands, 44  
thermal treatment of, 36  
Usatovo culture and, 192–193
- Cernavoda III culture  
discovery of, 171–173, 175–176  
pottery of, 209  
radiocarbon dating for, 177  
resource exploitation by, 305  
social practices in, 220–223
- chaff-faced pottery, 118–121
- chaîne opératoire approach, to technology, 22–23, 276
- chalcolithic period, 131–133  
Alişar paradigm and, 233–234  
Anatolian coastal region during, 233–234
- Chernykh, E. N., 87–88, 153
- Childe, V. G., 20
- clay cones, 72
- clay ovens, 246
- climate  
of Anatolian coast, 12, 243–244  
of Crimean peninsula, 9  
grasslands regions, 143–144  
for western coastal region, 11
- coastal formation, 14–16
- coiling, 78
- communication networks, 268–271  
Maikop culture as, 269–271  
for technological developments, 268–269
- copper. *See also* Age of Copper  
alloys, 90–94  
on Anatolian coast, 42

Cambridge University Press

978-1-107-03219-4 - The Black Sea and the Early Civilizations of Europe, the Near East and Asia

Mariya Ivanova

Index

[More information](#)

- arsenic alloys, 90–92, 289, 308–309  
 in Balkan coastal region, 43, 278  
 beneficiation of, 87–90  
 flat axes, 96–97  
 in grasslands regions, 154–158  
 lead alloys, 92–93  
 for Maikop culture, 87–88  
 mining of, 87–90  
 nickel alloys, 286  
 in northern Black Sea region, 157–158  
 pickaxes, 290  
 pyrotechnology for, 40, 278  
 as resource, 10, 265–266  
 shaft-hole axes, 98  
 silver alloys, 93–94  
 silvering of, 96  
 smelting of, 87–90, 278  
 types of, 87–88  
 in western coastal region, metallurgy  
 with, 212–220
- copper silvering, 96
- cotton, in lower Kuban valley, 74, 283
- cows. *See* animals, domestication of
- craftspeople, technology for, 29–30
- Crimean peninsula  
 climate of, 9  
 grasslands along, 8  
 pottery evidence in, 152  
 precipitation levels on, 8
- crops, domestication of, 33  
 in lower Kuban valley, 68–72  
 stages of, 277
- crucibles, in smelting technologies,  
 89–90, 308
- cultural ecology  
 ceramic ecology in, 275  
 technology and, 21, 275
- culture  
 definition of, 275  
 feedback process in, 275  
 innovation influenced by, 24  
 technology and, 19
- cupellation, 287–288, 310
- cylinder seals, 293
- daggers  
 manufacture of, 218–220  
 violence with, 221–222
- Danilenko, V. M., 131
- Danube delta, 171, 274  
 Dnestr-Danube Rescue Expedition,  
 171  
 grave sites in, 190  
 settlement sites, 180–181
- Dietler, M., 106
- Dneprovskij, K., 55–56
- Dnestr-Danube Rescue Expedition, 171
- domestic architecture. *See* architecture,  
 domestic
- Dönmez, Ş., 230
- Doonan, O., 228
- Dündartepe settlement  
 clay ovens in, 246  
 domestic architecture at, 240–241  
 food storage at, 245–246  
 pottery at, 237–238, 248  
 weaving technology at, 246–248
- Earle, T., 68
- economics, technology influenced  
 by, 24
- Eurasia  
 farming development in, 31–35, 41–48  
 Neolithic package and, 31
- Europe  
 Anatolian coastal region contact, 226  
 western coastal region contact, 226
- Evdokimov, G. L., 131
- faience  
 in lower Kuban valley, 86–87  
 in Mesopotamia, 86–87  
 in Tripolie culture, 210  
 in Usatovo culture, 209–210
- families, grave sites for, 66
- farming practices. *See also* food  
 gathering; food production  
 along Anatolian coast, 41–42, 244  
 along Balkan coast, 42–43  
 on Caucasian coast, 46–48  
 through controlled breeding, 32  
 cultivation of cereals, 32–33  
 development of, 260–261  
 domestication of animals, 33  
 domestication of crops, 33  
 in grasslands regions, 10, 143–148, 274  
 ground stone technology for, 35  
 Korenevskij on, in lower Kuban  
 valley, 68–69  
 in lower Kuban valley, 68–72  
 in northern Black Sea region,  
 143–148  
 in northern lowlands, of Black Sea,  
 43–46  
 during PPNA period, 32–33  
 during PPNB period, 32–33  
 in southwest Asia, technological  
 advancements in, 31–35  
 throughout Eurasia, development of,  
 31–35, 41–48  
 tool development, 277  
 for Usatovo culture, 192–196  
 in western coastal region, 192–196,  
 197–198
- farming tools, archaeological  
 evidence of  
 development of, 34–35, 277  
 in grasslands regions, 144  
 in lower Kuban valley, 69–70  
 in western coastal region, 193–194

- Fedorov, P. V., 14–15  
 feedback process, 275  
 females. *See* women  
 fishing practices  
   tools for, 197  
   for Usatovo culture, 197  
   in western coastal region, 196–197  
 flat axes, 96–97  
 flint  
   in grasslands regions, 148–149  
   in lower Kuban valley, 75  
   as resource, 10  
   in Usatovo culture, 202  
 flora and fauna. *See* biodiversity  
 food gathering  
   in Anatolian coastal region, 243–245  
   storage techniques, 35  
 food preparation  
   in clay ovens, 246  
   development of, 261–262  
   at grave sites, 62–63, 67–68, 104–108  
   in lower Kuban valley, 71–72  
   in Maikop culture, 72  
   at Majaki, 199  
   technology for, 30  
   in Usatovo culture, 198–199  
 food production. *See also* cereal grains  
   development of, 261–262  
   milk consumption and, 36–37  
   in southwest Asia, 35–37  
   technology for, 29, 35–37  
 food storage  
   in Anatolian coastal region, 245–246  
   for cereal grains, 71–72  
   in grasslands regions, 145  
   at İkiztepe settlement, 245–246  
   in lower Kuban valley, 59, 71–72  
   in Maikop culture, 59  
   at Majaki, 199  
   for milk products, 314  
   in seranders, 245–246  
   techniques, 35  
   in Usatovo culture, 198–199  
 forest-steppe region, technology in, 224–226  
 funerals  
   preparation of body for, 221, 292  
   symbolism of, social standing and, 67  
   in Usatovo culture, 184  
 funeral feasts  
   among Akha, 191  
   alcohol consumption at, 107, 292–293  
   exceptional practices during, 107  
   in Maikop culture, 62–63, 67–68, 104–108  
   in north Black Sea regions, 143  
   social importance of, 106–107  
   in Usatovo culture, 223  
   in western coastal region, 191  
   gender, technology and, 18–19  
   gold, metallurgy with, 90  
   grasslands regions, 8–10  
     along Crimean peninsula, 8  
     archaeological fieldwork in, 130–131  
   biodiversity in, 9–10  
   ceramics in, 150–153  
   cereal grains as crop in, 144–145  
   during chalcolithic period, 131–133  
   chronology of development in, 133–134  
   climate, 143–144  
   copper artifacts in, 154–158  
   dispersed communities in, 134–143  
   domestic architecture in, 160–161  
   domestication of animals in, 145–147  
   farming in, 10, 143–148, 274  
   flint use in, 148–149  
   food storage in, 145  
   funeral feasts in, 143  
   grave sites in, 131, 134–135  
   herding practices in, 146, 298  
   human figurative stonework in, 161–165  
   hunting practices in, 146–147  
   lithic technology in, 148–150  
   manufacturing technology in, 148–161  
   metallurgy in, 153–159  
   metalwork in, 158–159  
   Mikhajlovka site, 135–138  
   milk production in, 146  
   mineral resources in, 10  
   nomadic pastoralism in, 133, 297  
   ornamental stone use in, 150  
   pottery evidence in, 150–152  
   precipitation levels in, 8  
   radiocarbon dating for, 134  
   resource exploitation in, 147–148  
   smelting technologies in, 154  
   stone grave architecture in, 162–164  
   transport in, 159–160  
   Zhivotilovo type graves in, 165–167  
   grave sites. *See also* funerals; funeral feasts, in Maikop culture  
     along Caucasian coast, 65–66  
     in Anatolian coastal region, 241–243  
     animal skeletons at, in western coastal region, 186  
     bovine skulls at, 141  
     ceramics at, 63–65  
     in Danube delta, 190  
     displays of wealth at, 66, 67  
     fabrics at, 75  
     food ceremonies at, 62–63, 67–68, 104–108  
     in grasslands regions, 131, 134–135  
     at İkiztepe settlement, 241–242, 243  
     kurgans, 63  
     in lower Kuban valley, 51, 60–66

Cambridge University Press

978-1-107-03219-4 - The Black Sea and the Early Civilizations of Europe, the Near East and Asia

Mariya Ivanova

Index

[More information](#)

- for Maikop culture, 53–55, 65, 66–67, 108
- in northern Black Sea regions, 131, 134–135, 143
- personal ornamentation in, 164–165
- physical construction of, 60–62
- ritual pits, 184
- sacrificial pits, 186
- as site for social gathering, 66–67
- skeletal positioning in, 138–141, 181, 243, 282
- special construction at, in western coastal region, 187–189
- stone grave architecture, in north Black Sea region, 162–164
- for Syro-Anatolian culture, 119, 128–129
- Usatovo culture and, 171
- in western coastal region, 170–171, 176–177, 181–183
- for women, 66
- Zhivotilovo type, 165–167
- Great Khorasan Road, 121–129
- Green Revolution, 26–27
- ground stone technology
  - for cereal grains, 35, 72
  - lithic technology and, 37–38
  - in lower Kuban valley, 76–78
  - mining practices and, 88
- hamlets, in Usatovo culture, 190–191
- Hamon, C., 88
- herding practices, 146
  - disadvantages of, 298
- hitches, 267
- homes. *See* architecture, domestic
- horses. *See* animals, domestication of
- houses. *See* architecture, domestic
- hunting practices
  - in Anatolian coastal region, 245
  - in grasslands regions, 146–147
  - in lower Kuban valley, 70–71
  - for Usatovo culture, 195–196
- Iessen, A. A., 51, 53
- İkiztepe settlement, 229–230
  - Alişar paradigm, 234–237
  - clay ovens in, 246
  - domestic architecture at, 240–241
  - food storage at, 245–246
  - grave sites at, 241–242, 243
  - jewelry at, 251–252, 315
  - metalwork in, 251
  - pottery at, 237–238, 248
  - settlement patterns at, 239–240
  - weaving technology at, 246–248
- Ingold, T., 29, 276
- innovation
  - contemporary technology as influence on, 24–25
  - cultural influences on, 24
  - dispersion of, through opinion, 26
  - economic influences on, 24
  - Green Revolution and, 26–27
  - in prehistorical era, 25
  - reinvention and, 24
  - replication compared to, 24
  - technical factors as influence on
    - adoption of, 26–27
  - in technology, 23–25
  - unintentional, 24
  - variables in development of, 23
  - wealth as influence on adoption of, 26
  - worldview as influence on adoption of, 27–28
- Iran, Syro-Anatolian culture influenced, 122–129
- iron reduction technique, 205, 306
- jewelry, at İkiztepe settlement, 251–252, 315
- Kienlin, T., 215
- kin networks, diffusion of technology
  - within, 25–26
- Kökten, N., 229–230
- Kolkheti lowlands, 14
- Korenevskij, S., 51–52, 54, 55, 67–68
  - on farming practices, in lower Kuban valley, 68–69
  - on pottery production, 78
- Kuban valley, lower. *See also* Maikop culture; Syro-Anatolian culture
  - animal transport in, 103–104
  - archaeological fieldwork in, 50–51
  - ceramic production in, 78–86
  - cereal production in, 69
  - clay cones in, 72
  - cotton textile in, 74, 283
  - crop production in, 68–72
  - cylinder seals in, 293
  - domestic animals in, 68–72, 283
  - dwelling construction style in, 56–59
  - environmental conditions, 7
  - faience technology in, 86–87
  - farming practices in, 68–72
  - farming tools in, 69–70
  - flint resources in, 75
  - food preparation in, 71–72
  - food storage in, 59, 71–72
  - grave sites in, 51, 60–66
  - Great Khorasan Road and, 121–129
  - ground stone technology in, 76–78
  - habitation sites in, 55–60
  - hunting practices in, 70–71
  - Leilatepe culture, 295
  - linen in, 74
  - lithic technology in, 75–78
  - major crossing routes through, 296

- Kuban valley, lower (*cont.*)  
 metallurgy in, 87–102  
 milk processing in, 70  
 mobile households in, 59–60  
 obsidian use in, 75–76  
 precipitation levels in, 7  
 resource allocation in, 68–72  
 semi-sedentary settlements in, 59–60  
 strategic resources, 8  
 textile production in, 73–75  
 topographic boundaries within, 7  
 village structure in, 56
- Kubyshev, A. I., 131
- kurgans, 63  
 in western coastal region, 181–183, 304
- lactic acid bacteria (LAB) fermentation,  
 261–262, 316
- Lagodovskaja, E. F., 199
- lapis lazuli, 115–116
- lead  
 in copper, 92–93  
 metallurgy with, 90
- Leilatepe culture, 295
- Lemonnier, P., 23
- Leshtakov, K., 308
- lime plaster, 38–40
- linen, in lower Kuban valley, 74
- lithic technology  
 on Caucasian coast, 46–47  
 with flint, 10, 75  
 in grasslands regions, 148–150  
 ground stone technology and, 37–38  
 in lower Kuban valley, 75–78  
 within Maikop culture, 76–78  
 naviform cores, 38  
 in northern Black Sea region, 148–150  
 with obsidian, 75–76  
 in southwest Asia, 37–38  
 in Usatovo culture, 200–203
- Maikop culture. *See also* funeral feasts, in  
 Maikop culture  
 animal transport in, 103–104  
 chronology of, 51–53, 54  
 as communication network, 269–271  
 copper trade in, 87–88  
 definition of, 279  
 dwelling construction style in, 56–59  
 food preparation in, 72  
 food storage in, 59  
 funeral feasts in, 67–68, 104–108  
 grave sites for, 53–55, 65, 66–67, 108  
 lithic technology within, 76–78  
 long-distance trading for, 108–118  
 in lower Kuban valley, 51–53  
 Mesopotamian influence on, 53–54  
 metal sheet work in, 95  
 metalwork in, 94–95  
 mobile households in, 59–60  
 pottery within, 78–83  
 power structure in, wealth as  
 influence on, 68  
 radiocarbon dating for, 54–55  
 semi-sedentary lifestyle in, 59–60  
 social valuables in, 104–108  
 during Uruk expansion, 52–53  
 village structure for, 56  
 violence in, 67–68  
 wire work in, 95
- Majaki settlement, 180  
 cemetery at, 191  
 cereal grain use, 192–193  
 discovery of, 170  
 domestic architecture in, 212  
 domestication of animals in, 194–195  
 farming tools at, 193–194  
 food storage and preparation at, 199  
 kurgans at, 181–183  
 violence in, 221–222, 311
- manganese black technique, 205
- Maran, J., 211
- maritime trading routes, 48
- Mesopotamia  
 faience artifacts in, 86–87  
 Maikop culture influenced by, 53–54  
 reserved-slip pottery, 81, 285
- metallurgy. *See also* copper; metalwork;  
 smelting technologies  
 alloying, 90–94  
 in Anatolian coastal region, 250–253  
 beneficiation and, 87–90  
 casting and, 94  
 cupellation and, 287–288, 310  
 development of, 265–266  
 with gold, 90  
 in grasslands regions, 153–159  
 with lead, 90  
 in lower Kuban valley, 87–102  
 mining and, 87–90  
 in northern Black Sea region, 153–159  
 with silver, 90  
 smelting of ores and, 87–90  
 in western coastal region, with  
 copper, 212–220
- metalwork  
 copper silvering, 96  
 in grasslands region, 158–159  
 in İkiztepe settlement, 251  
 in Maikop culture, 94–95  
 manufacturing methods for, 95–96  
 metal sheet work, 95  
 in Syro-Anatolian culture, 120  
 in Tripolie culture, 216  
 in Usatovo culture, 214–215, 216–218  
 in western coastal region, 215–218  
 with wire, 95
- migration, of Syro-Anatolian culture,  
 120
- Mikhajlovka site, 135–138

- domestic architecture at, 160–161  
 flint use at, 148–149  
 milch pastoralism, 299  
 milk production  
   consumption and, archaeology for, 36–37  
   food storage and, 314  
   in grasslands regions, 146  
   LAB fermentation and, 261–262, 316  
   in lower Kuban valley, 70  
   in western coastal region, 305  
 millet, 244  
 mineral resources. *See* resources  
 mining practices  
   for copper, 87–90  
   ground stone technology and, 88  
   metallurgy and, 87–90  
   in western coastal region, 212–214  
 mobile households, in Maikop culture, 59–60  
 Moche pottery, 285  
 Munchaev, R. M., 51  
 myth of subsistence, 28–29
- Nahal Hemar, textiles in, 37  
 naviform cores, 38  
 Neoeuxinian stage, of Black Sea, 14  
 Neolithic package, 31  
 networks. *See* kin networks, diffusion of technology within  
 New Black Sea stage, 15  
 nickel copper alloys, 286  
 nomadic pastoralists, 133  
   archaeological evidence of, 297  
 northern regions, of Black Sea  
   *See also* grasslands regions; Kuban valley, lower; Tripolie culture  
 archaeological fieldwork in, 130–131  
 cereals in, 44  
 during chalcolithic period, 131–133  
 chronology of development in, 133–134  
 copper artifacts in, 157–158  
 dispersed communities in, 134–143  
 domestic architecture in, 160–161  
 farming in, 143–148  
 farming technology in, 43–46  
 funeral feasts in, 143  
 grave sites in, 131, 134–135, 143  
 human figurative stonework in, 161–165  
 kurgan discoveries in, 130  
 lithic technology in, 148–150  
 metallurgy in, 153–159  
 Mikhajlovka site, 135–138  
 mineral resources in, 10  
 nomadic pastoralism in, 133, 297  
 pointed-bottom ceramics in, 279  
 radiocarbon dating for, 134  
 resource exploitation in, 10, 147–148  
 smelting technologies in, 154  
 steppes, grave sites in, 143  
 stone grave architecture in, 162–164  
 Tripolie culture in, 134  
 Zhivotilovo type graves in, 165–167
- obsidian, in lower Kuban valley, 75–76  
 Odessa Archaeological Museum, 171  
 Old Black Sea stage, 14–15  
 opinion leaders, adoption of innovation influenced by, 26  
 ornamental stone  
   carnelian, 295  
   in grasslands region, 150  
   lapis lazuli, 115–116  
   in Syro-Anatolian culture, 123–124  
   trading of, 114–118  
   turquoise beads, 114–115  
 Orthmann, W., 234  
 Özdoğan, M., 234, 255  
 Özgüç, N., 229–230  
 Özgüç, T., 229–230
- Passek, T. S., 173  
 pastoralists. *See also* farming  
   in grasslands regions, 133  
   in lower Kuban valley, 68–72  
   milch, 299  
   nomadic, 133, 297  
   in northern Black Sea region, 133  
   transhumance and, 70, 305–306  
 Patokova, E. F., 170  
 Peterenko, V. G., 170  
 Pfaffenberger, B., 20, 21, 276  
   on technology in sociotechnical system, 22  
 pickaxes, 290  
 pit houses, 160–161  
   environmental conditions for, 300  
 pointed-bottom ceramics, 279  
 potter's marks, 82–83, 285  
 pottery  
   in Anatolian coastal region, 237–238, 248, 255–256  
   for Cernavoda III culture, 209  
   coiling, 78  
   in Crimean peninsula, 152  
   decoration techniques for, 80–81  
   at Dündartepe settlement, 237–238, 248  
   firing technology for, 81–82  
   in grasslands regions, 150–152  
   at Ikiztepe settlement, 237–238, 248  
   iron reduction technique for, 205, 306  
   Korenevskij on, 78  
   within Maikop culture, 78–83  
   manganese black technique for, 205  
   Moche, 285  
   potter's marks, 82–83, 285

- pottery (*cont.*)  
 production techniques for, 78–80, 284, 285  
 red-black, in Anatolian coastal region, 255–256  
 reserved-slip, 81, 285  
 in Syro-Anatolian culture, 118–121, 123  
 in Usatovo culture, 203–208  
 PPNA period. *See* pre-pottery Neolithic A period  
 PPNB period. *See* pre-pottery Neolithic B period  
 precipitation levels  
 on Anatolian coast, 12, 13–14  
 on Crimean peninsula, 8  
 in grasslands region, 8  
 in lower Kuban valley, 7  
 in western coastal region, 11  
 prehistorical era, innovation during, 25  
 pre-pottery Neolithic A (PPNA) period, 32–33  
 domestication of animals during, 33  
 tool development during, 34–35, 277  
 pre-pottery Neolithic B (PPNB) period, 32–33  
 domestication of animals during, 33  
 tool development during, 34–35, 277  
 pyrotechnology, in southwest Asia, 38–40  
 for ceramics, 40  
 for copper, 40, 278  
 for lime plaster, 38–40  
 radiocarbon dating  
 for Anatolian coastal region, 238–239  
 for Cernavoda III culture, 177  
 of İkiztepe settlement, 234–237  
 for Maikop culture, 54–55  
 for northern Black Sea region, 134  
 for Usatovo culture, 177  
 Rassamakin, J., 131–133  
 red-black pottery, in Anatolian coastal region, 255–256  
 reinvention, innovation and, 24  
 religion, technology and, 21  
 replication, innovation compared to, 24  
 reserved-slip pottery, 81, 285  
 resources  
 for Cernavoda III culture, 305  
 copper, 10, 265–266  
 flint, 10  
 in grasslands regions, 147–148  
 in lower Kuban valley, 8, 68–72  
 in northern Black Sea region, 10, 147–148  
 ritual, technology and, 21, 275  
 ritual pits, 184  
 royal road, 268–269, 271  
 sacrificial pits, 186  
 sapropel, 274  
 Schmidt, A. V., 53  
 Schoop, U., 235–237, 265  
 scientific knowledge, technology and, 276  
 Sé Girdan site, 129  
 sea level changes, 14–16  
 during Neoeuxinian stage, 14  
 during New Black Sea stage, 15  
 during Old Black Sea stage, 14–15  
 Quaternary oscillation schemes for, 14–15  
 Sea of Azov. *See* Azov, Sea of  
 seranders, 245–246  
 Serezlievka figurines, 134, 161–162  
 settlements. *See also* İkiztepe settlement  
 in Anatolian coastal region, 239–243  
 in Danube delta, 180–181  
 domestic architecture in, 178  
 locations of, 178  
 at Majaki, 180  
 in western coastal region, 177–181  
 shaft draught system, 267  
 shafthole axes, 98  
 sheep. *See* animals, domestication of  
 Sherratt, A., 28–29  
 Shmaglij, N. M., 171  
 Shulaveri-Shomutepe culture, 46  
 silver. *See also* copper silversmithing  
 in copper alloys, 93–94  
 metallurgy with, 90  
 Sinop Regional Archaeological Project (SRAP), 228  
 skeletal positioning, in graves, 138–141, 181, 282  
 smelting technologies  
 in Anatolian coastal region, 250–251, 315  
 archaeological dating of, 89  
 for copper, 87–90, 278  
 crucibles in, 89–90, 308  
 development of, 265  
 in grasslands regions, 154  
 in northern Black Sea region, 154  
 in western coastal region, 212–214, 308  
 social practices. *See also* funerals; funeral feasts  
 through ceramic evidence, 220  
 for Cernavoda III culture, 220–223  
 at grave sites, 66–67  
 in Usatovo culture, 220–223  
 social valuables, in Maikop culture, 104–108  
 status from, 105–106  
 violence and, 105  
 Solovev, L. N., 232  
 SRAP. *See* Sinop Regional Archaeological Project



- stibnite, 311
- stone grave architecture, in north Black Sea region, 162–164
- European influences on, 164
- stone technology. *See* ground stone technology
- Syro-Anatolian culture, 118–129
- chaff-faced pottery, 118–121
- domestic structures for, 118–119
- grave sites for, 119, 128–129
- Great Khorasan Road and, 121–129
- Iranian influences on, 122–129
- metalwork in, 120
- migration of, 120
- ornamental stones as trade in, 123–124
- pottery from, 123
- Sé Girdan site, 129
- Tallgren, A. M., 53
- tanged daggers, 97–98, 291
- technology. *See also* ground stone technology; lithic technology; pyrotechnology, in southwest Asia; smelting technologies
- adaptation through, 21
- adoption of, 25–28
- archaeological approaches to, 20–23
- chaîne opératoire approach to, 22–23, 276
- communication networks for, 268–269
- for craftspeople, 29–30
- cultural ecology and, 21, 275
- culture and, 19, 24
- definition of, 18–20
- development theories for, criticism of, 21–22
- economic influences on, 24
- efficiency functions of, 19
- farming, in southwest Asia, 31–35
- for food preparation, 30
- for food production, 29, 35–37
- gender ideology and, 18–19
- in general line of progress, 20
- holistic view of, 19–20
- innovation in, 23–25
- within kin networks, diffusion of, 25–26
- material products as result of, 19
- myth of subsistence and, 28–29
- from necessity, 20
- religion and, 21
- ritual and, 21, 275
- science and, 276
- in sociotechnical system, 22
- in southwest Asia, 31–41
- transmission of, 25–28
- for Usatovo culture, 224–226
- Telegin, D. Y., 131
- textile development, 262–264
- for cotton, 74, 283
- for linen, in lower Kuban valley, 74
- in lower Kuban valley, 73–75
- in Nahal Hemar, 37
- sources of, 37
- in southwest Asia, 37
- weaving tools for, 73
- with wool, 263–264
- Thissen, L., 235, 254–255
- tools. *See* farming tools, archaeological evidence of, lithic technology, weaving tools, archaeological evidence of, *specific axes, specific tools*
- trading
- archaeological evidence of, 110–113, 114–115, 293
- of lapis lazuli, 115–116
- long-distance, for Maikop culture, 108–118
- maritime routes, 48
- of ornamental stone, 114–118, 123–124
- of turquoise beads, 114–115
- for Usatovo culture, 225–226
- transhumance pastoralism, 70, 305–306
- transportation. *See also* animal transport
- in grasslands regions, 159–160
- for Tripolie culture, 210–211
- in western coastal region, 210–211
- Tripolie culture, 133–134
- faience in, 210
- metalwork in, 216
- Serezlievka figurines and, 134, 161–162
- transport for, 210–211
- Usatovo culture and, 173–175, 176–177
- turquoise beads, 114–115
- Ukraine, grasslands regions in, long-term effects of farming, 274
- unintentional innovation, 24
- Uruk culture, expansion of, 52–53, 120
- Usatovo culture
- archaeological discovery of, 170, 173–176
- cemeteries in, 191
- ceramics in, 203–208
- cereal grains for, 192–193
- daggers in, 218–220
- Dnestr-Danube Rescue Expedition, 171
- domestic animals in, 194–195
- domestic architecture for, 179–180, 211–212
- faience in, 209–210
- farming practices for, 192–196
- farming tools in, 193–194
- fishing practices for, 197
- flint use in, 202

- Usatovo culture (*cont.*)
- food storage and preparation in, 198–199
  - funeral ceremonies in, 184
  - funeral feasts in, 223
  - grave sites and, 171, 187–189
  - hamlets, 190–191
  - hunting practices for, 195–196
  - kurgans in, 181–183
  - lithic technology in, 200–203
  - metalwork in, 214–215, 216–218
  - ornamentation of body for burial, 221
  - pottery in, 203–208
  - radiocarbon dating for, 177
  - ritual pits, 184
  - sacrificial pits, 186
  - social practices in, 220–223
  - technological development in, 224–226
  - trading for, 225–226
  - Tripolie culture and, 173–175, 176–177
  - violence in, 221–222, 311
  - weaving technology for, 200
- vehicles. *See* wheeled vehicles
- Veselovskij, N. I., 50
- violence
- with daggers, 221–222
  - in Maikop culture, 67–68
  - in Majaki settlement, 221–222, 311
  - in Usatovo culture, 221–222, 311
- von der Osten, H., 234
- wagons
- development of, 268
  - as homes, 300
- wealth
- adoption of innovation and, 26
  - at grave sites, displays of, 66, 67
  - in Maikop culture, power structure influenced by, 68
- weaving tools, archaeological evidence of, 73
- in Anatolian coastal region, 246–248
  - at Dündartepe settlement, 246–248
  - at İlkiztepe settlement, 246–248
  - for Usatovo culture, 200
- western coastal region, 10–11
- See also* Cernavoda III culture; Danube delta; Majaki settlement; settlements, in western coastal region; Tripolie culture; Usatovo culture
- archaeological fieldwork in, 170–173, 176–177
- biodiversity in, 11
- burial customs in, 181–191
- casting metal in, 214–215
- climate for, 11
- copper metallurgy in, 212–220
- Danube delta, 180–181
- Dnestr-Danube Rescue Expedition, 171
- domestic architecture in, 178, 179–180, 211–212
- European contact and, 226
- farming in, 192–196
- farming tools in, 193–194
- fishing practices in, 196–198
- food storage and preparation in, 198–199
- funeral feasts in, 191
- grave sites in, 170–171, 176–177, 181–183, 186, 187–189
- kurgans in, 181–183, 304
- major areas within, 11
- metal alloy use in, 214–215
- metalwork in, 215–218
- milk production in, 305
- mining in, 212–214
- precipitation levels in, 11
- sacrificial pits, 186
- smelting technologies in, 212–214, 308
- social practices in, 220–223
- soil conditions in, 192
- transport in, 210–211
- wheeled vehicles
- animal transport with, 103–104, 291–292
  - development technology for, 268
  - wagons, 268, 300
- women, technology and, 18–19
- wool, textile development with, 263–264
- Zbenovich, V. G., 170, 173–175
- Zhivotilovo type graves, 165–167