CHAPTER NINE

ECONOMY

The economy of the Andronovo culture was based on mixed farming and stockbreeding with different emphasis on the various components according to both chronology and region.

Farming

O. A. Krivtsova-Grakova (1948: 103-104) and S. V. Kiselev (1949: 56) were the first to study Andronovo farming. The main indirect evidence of farming is the topography of the Andronovo settlements, the majority of which are situated on fertile grounds in the flood-plains of rivers (Sal’nikov 1951b: 126; 1954: 248). There is little direct evidence for Andronovo farming. At Alekseevka on a ritual mound there were pits with carbonized stalks and grains of wheat (Krivtsova-Grakova 1948: 73). There are old identifications of rye (?) and millet found on settlements in Kazakhstan (Minaeva and Furaev 1934; IK SSR 1977: 111) and palaeo-botanical discoveries of wheat and millet on settlements of the Fedorovo type and the Cherkaskul’ culture (Lebedeva 1996: 54, 55) and neighboring Timber-grave sites of the Urals (Lavrushin and Spiridonova 1999: 102). There is the imprint of cereals preserved on the bronze sickle from a settlement at Malokrasnoyarka (Chernikov 1960: 44, table 36, 19). Traces of burnt roofing material were found at the settlement of Ushkatta 2, consisting of clay-covered straw (the cereal involved was indeterminate to species; excavations by E. E. Kuz’mina).

Primitive stone querns are found on the majority of Andronovo settlements; they are rectangular or oval, 15-25cm long, 2-6cm thick, with artificially deepened surfaces. There are three types of grinding stones: elongated, rectangular in section, round or cylindrical, sometimes with a conical handle, or shaped like a pyramid with a flattened top: Alekseevka, Kipel’, Novo-Burino, Zamaraev, Kambulat 2, Ushkatta 2, Kiimbay, Elenovka, Shandasha, Atasu, Buguly 1, Suubulak, Milykuduk, Tagibay-Bulak, Shortandy-Bulak, Karkaralinsk, Ust’Narym, Malokrasnoyarka, Trushnikovo, settlements of northern Kazakhstan (Krivtsova-Grakova 1948: 103-104, fig. 18, 30; Sal’nikov 1951b: 125, fig. 12; 1967: 333; Kuz’mina 1962a: 88; 1962b: 14, fig. 3, 6; 1964b: 106; Margulan 1979: 262, table 8.1, fig. 126, 134, 162, 164, 165, 172, 180; Chernikov 1960: 37, tables 25, 26.2, 27.13, 39.3,4.7, 50.5, 51; 52; Zdanovich 1979: 11, 18; Chebakova 1975: fig. 3.15, 16; 4. 12; 5. 8). There are interesting finds of querns in the ritual complex of Baksay on the Atasu river in central Kazakhstan and in burials in the Urals at Adamovka and Ataken-say, in the latter case under the head of a girl (Margulan et al. 1966: 260; Sal’nikov 1967: 333; Kuz’mina 1963b: 127). The finding of cereal grains in a ritual context at Alekseevka and the sickle in a woman’s grave at Tulaykin Aul attest to a farming cult among the Andronovans. Judging by the sickle and querns in women’s burials the harvesting and processing of grains was a female occupation among the Andronovans.
However, querns and pestles need not have been used only for grain grinding but also for crushing wild plants and ore (such use is supported by assemblages in industrial complexes at Shandasha, Atasu, Dzhazkazgan, Trushnikovo and near mining sites, cf. Kuz’mina 1964b: 106; Margulan 1979: fig. 126, 180; Chernikov 1960: table 2; 1949: tables 1.1,2,3, 5. 1), which has been supported by use-wear analysis by G. F. Korobkova.

Finds of bronze sickles of several types are known over the entire Andronovo region. The first group comprises sickle-like knives with a slightly concave blade without a defined handle. These appear already in the Sintashta-Petrovka stage (the settlements of Arkaim and Kulevchi, the Sintashta burial), they are known in the Alakul’ and Kozhumberdy complexes (Tulaykin Aul burial, the settlements of Chernyaki 3, Kambulat 2, Starikovskoe, Ushkatta 8, Kamysnoe 1, Petrovka 2, Novonikal’skoe, Bogolyubovo 1) and survive to the Final Bronze Age (Stalinsky Rudnik, Myrzhik) when they become numerous on sites of the steppe cultures of Central Asia and also appear in western Siberia (Grakov 1935: fig. 67.6; Gryaznov 1956: 30-31, fig. 7, 26; Orazbaev 1958: 276, 278, table 10, 2; Chernikov 1960: table 8.4, 5; Kuz’mina 1966: 44-46, table 9; Sal’nikov 1967: 331, fig. 53.7, 8; Zdanovich 1973: 118; Chebakova 1975: fig. 5.10.11; Stokolos 1972: fig. 6. 1; Margulan 1979: 5-9, fig. 166; Avanesova 1979: 14; Zdanovich 1988: tables 10, 20, 21; Kadyrbayev et al. 1992: fig. 118. 11; Gening et al. 1992; fig. 75.6; 148, 164; Zdanovich 1997: fig. 9). Early sickle-shaped knives were polyfunctional and could be used as knives, sickles, and carpenter planes. These tools are quite analogous to Abashevo and Timber-grave ones and are genetically connected with them (Krivtsova-Grakova 1955: 54, fig. 12.12; Sal’nikov 1967: fig. 2, 3, 5, 6.1-5; 24.12; Chernykh 1970: fig. 54. 12-17, 55. 1-9). Their forms developed from slightly curved knife-sickles to a specialized type of knife with a straight blade and then a sickle itself. Its efficiency rose due to an increase in the curvature of the blade. At the end of the Bronze Age sickles often had holes for attaching a handle. Andronovo mass production of sickle-shaped knives is shown by matrices with some negatives in the Urals at Kandravinskaya and at Orenburg (Krivtsova-Grakova 1948: 103; Tikhonov 1960: table 20. 14).

The second group consists of sickle-choppers of the Sosnova-Maza type (Fig. 43: 19-21) found in the Urals, north, central, and eastern Kazakhstan, Semirech’e and in west Siberia, including those found on settlements of the Final Bronze Age at Stepnyak, Alekseevka, Yazevo, Ust’-Narym, Malokrasnoyarka, Konezavod, Chaglinka, in the burial at Zevakino, in the late layer of Petrovka 2 and Novonikal’skoe, and in the hoards of Alekseevskiy, Turksib and Shamshi at the end of the 2nd/beginning of the 1st millennium BC (Chernikov 1949: table 10.4; 1960: 38, 44, 162, tables 36.19, 16.11; Orazbaev 1958: 141; Akshev and Kushaev 1963: 108, fig. 83; Grishin 1960: 123, fig. 1, 6-7, 20; Chlenova 1955: fig. 3, 5; AO 1969: 393; 1973: 467; Kuz’mina 1966: 54-56, table 11; Kozhumberdiev and Kuz’mina 1980: 145-146, fig. 1, 17-19; Krivtsova-Grakova 1948: 107, fig. 27.3; Evdokimov 1975c: 112; IK SSR: fig. 108.1, 2; Arslanova 1974a: tables 1, 4; Zdanovich 1973a: 118; Avanesova 1979: 15; Potemkin 1979: fig. 6.3). The mass production and late date of sickle-choppers is affirmed by a bronze mold (Omsk museum). V. V. Golmsten thought that these tools were not sickles but cutting instruments used for clearing flood land for sowing and for stocking up branches for cattle. Modern Turkmen use an analogous tool for...