

1 **Asian Wild Ass, Kulan – *Equus hemionus***

Equus hemionus Pallas, 1775.
Perissodactyla, Equidae

1.1

Status and Distribution (Fig. 1.1)

1.1.1

Taxonomic Remarks

Only one subspecies, *E. h. onager* Boddaert 1785, exists in the modern fauna of the former USSR. *E. h. hemionus* Pallas 1775 inhabited the Transbaikal part of the range and has been extinct since the latter part of the 18th century. *E. h. finschii* Matschie 1911 inhabited the Kazakhstan part of the range and became extinct in 1936–1937 (Heptner 1989; Blank and Dzhanyspaev 1990).

1.1.2

Status

Vulnerable (VU–A2c) (Hilton-Taylor 2000).

1.1.3

Distribution (Fig. 1.2)

Distribution Area. Ca. 4,268,000 km² (estimated historical range).

Occurrence in Ecoregions. Temperate steppe (332), temperate desert (342, 343).

1.2

Measurements (Fig. 1.3)

1.3

Habitat (Table 1.1)

Semi-deserts and deserts of uplands and foothills. During winter mostly in deserts, during summer in semi-deserts and more seldom in steppes (Solomatin 1973).

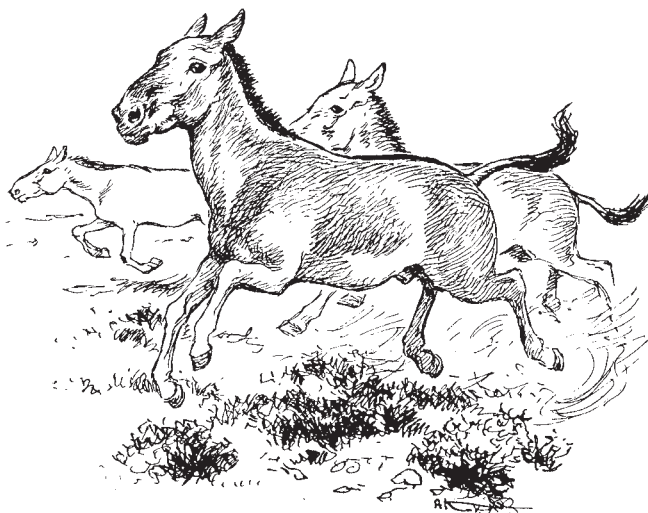


Fig. 1.1. Kulan

Terrain Form. Flat and hilly uplands; foothills of mountains.

Altitude. In upland at 800 m a.s.l. (Badkhyz population).

Snow. Snow is important as water source. At more than 40 cm snow depth animals follow each another. Snow depth more than 60–70 cm is limiting (Sludsky 1963; Solomatin 1973).

Temperature. In the past, kulans inhabited areas with a temperature range from –50 to +45°C.

Water. Need watering except during early spring when food plants are rich in water. On Barsakelmes Island, they can drink salt water (<20 g salt/l, except pregnant females <10 g salt/l). Evacuation of kulans from Barsakelmes Island started due to increasing saltiness of the Aral Sea in 1986 (Blank and Dghanyspaev 1990).

1.3.1

Biotope (Table 1.1)

1.4

Diet and Feeding Habits

1.4.1

Diet (Table 1.2 and Appendix 1, Table 1)

In winter, when snow is absent or not too deep, green parts of sedges, cereals, wormgrass and *Salsola* are the main diet; large herbs and shrubs

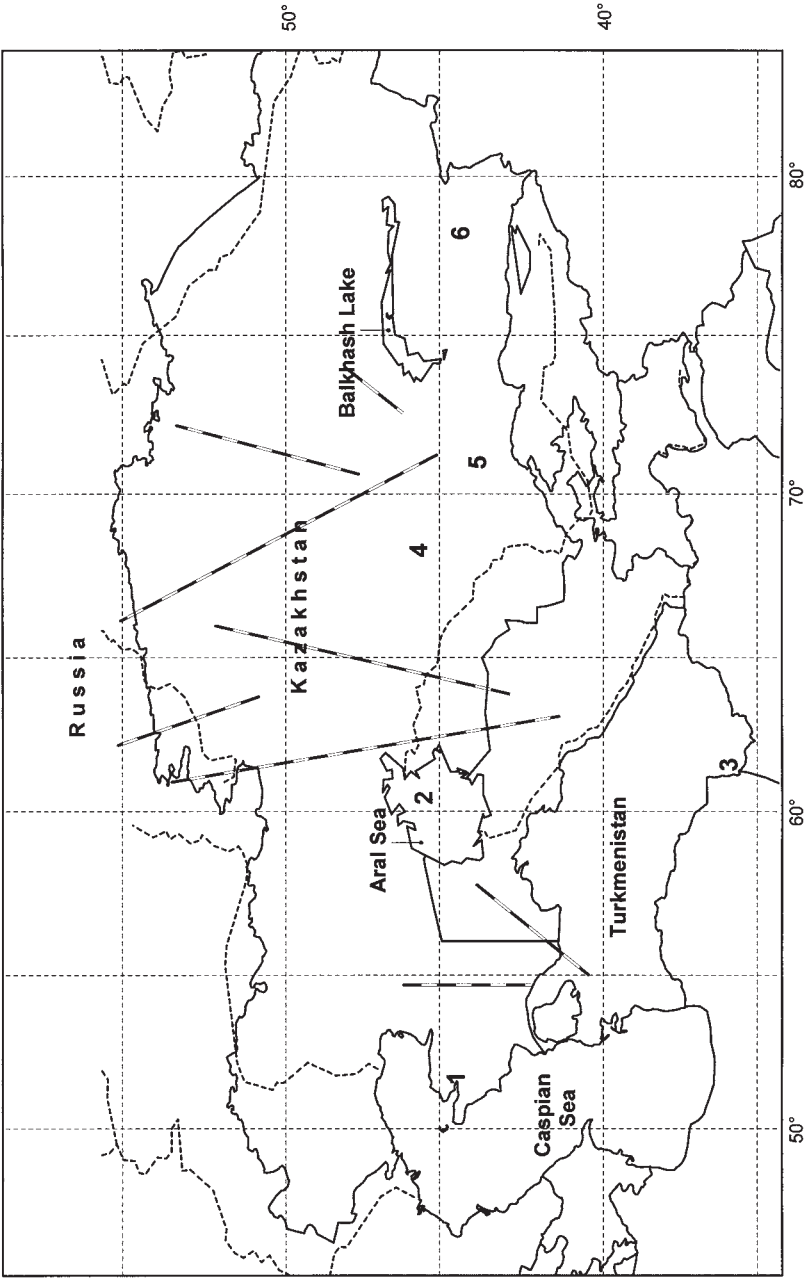


Fig. 1.2. *Equus hemionus*. Distribution map and migration routes (Blank and Dzhanyspaev 1990). 1 Aktau-Bazatchi; 2 Barsakelmes Islands; 3 Badkhyz Nature Reserve; 4 Betpaqdala semi-desert; 5 Andasaysky Game Husbandry; 6 Qapshaghay Game Husbandry. Thick lines represent routes of migration in the past

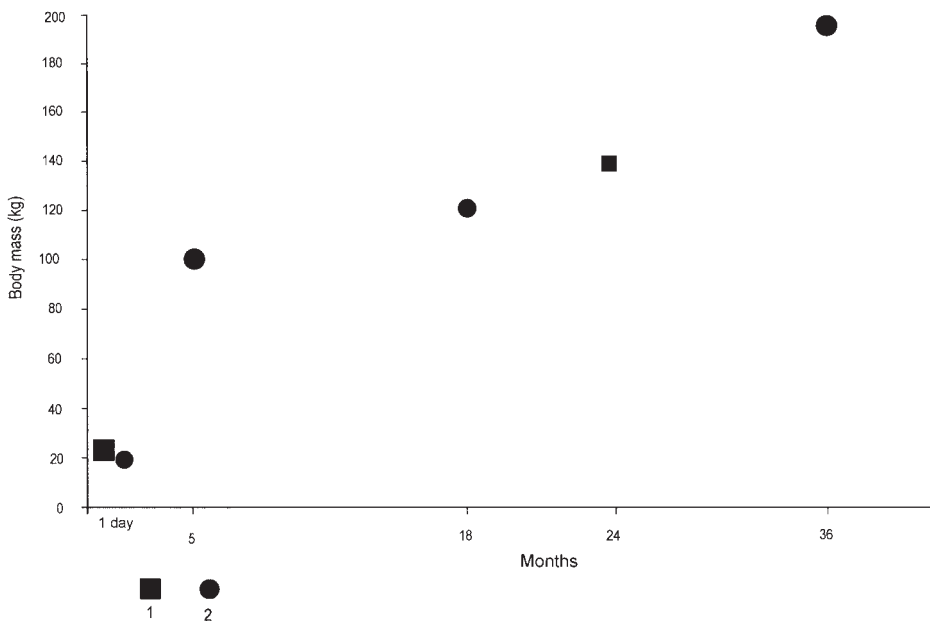


Fig. 1.3. *Equus hemionus*. Body mass versus age (Solomatin 1973). 1 Male; 2 female

Table 1.1. *Equus hemionus*. Habitat (x indicates where a habitat has been used). (Solomatin 1973; Bannikov 1989)

Habitat type	Barsakelmes Island	Badkhyz Nature Reserve
Clay desert with dwarf shrubs of <i>Artemisia</i> + nanophytons + cereals	x	x
Sand desert with <i>Haloxylon</i> and <i>Calligonum</i>	x	
<i>Pistacia</i> savanna with <i>Salsola</i>		x

constitute a minor part. When the snow is deep, tall herbs and shrubs are frequently eaten. In spring, ephemeral plants are important. In summer, cereals and sedges comprise 90% of the diet (Solomatin 1973). Kulans usually eat the excrement of other herbivores. Visit salt licks. For a list of plant genera eaten see Appendix 1, Table 1.

1.4.2
Life Forms/Plant Parts Eaten (Table 1.3)

Consumption of Food/Day. Ca. 5 kg of dry food (calculated by Solomatin 1973).

Table 1.2. *Equus hemionus*. Seasonal changes in utilisation of shrubs and grass in Barsakelmes Island (% of time used for feeding). (Rashek 1967; Bekenov and Fadeev 1984)

Plants	Plant type	Early spring (%)	Late spring (%)	Summer (%)	Autumn (%)	Winter (%)
<i>Anabasis</i>	Shrub	48–70	0–33	0–50	0–43	21–67
<i>Artemisia</i>	Herb	30–34	0	0	10–30	19–78
<i>Alhagi</i>	Herb	10–20	0	0	0	0
Cereals (total)	Grass	0–52	67–100	87–100	51–87	1–26
<i>Agropyron</i>	Grass	0–12	13–50	1–65	0–71	12–26
<i>Eremopyrum</i>	Grass	0–52	13–50	16–28	0	1–25
<i>Stipa</i>	Grass	0	4–66	2–42	0–40	0

Table 1.3. *Equus hemionus*. Life forms/plant parts eaten (x indicates that plant type has been used)

Life forms	Plant parts eaten						
	Leaves	Stems/twigs	Bark	Roots/bulbs	Flowers	Fruits	Seeds
Trees	x	x					x
Shrubs		x					
Dwarf shrubs		x					
Herbs	x	x			x	x	x
Grasses/sedges	x	x					x

Feeding Niche. In field and shrub layers.

1.5 Social Organization and Behavior

1.5.1 Social Life (Table 1.4)

There are permanent groups which consist of a stallion, some mares and some young animals. However, the stallion can leave the group for a few days. Average size of groups is 11–13. In winter the groups can form concentrations of up to 150–200 animals (Solomatin 1973; Bannikov 1981; Table 1.4).

A mature female leads the group during movements and selects the direction and rhythm of pasturing. The stallion is dominant and brings