

Appendix

Appendix Table 1

Length and width of lower premolars of elks of the genus *Cervalces* Scott, 1885 and *Alces* Gray, 1821 from Eurasian localities.

Measurement	Locality; Age	Country	N	Min. – max.	Mean	Source data
Length of P ₃	Present day	Sweden	2	18.0–22.0	20.0	Original data
	Present day	Norway	2	22.5–23.4	22.95	Breda, 2001b
	Present day	Northeastern Siberia	10	24.0–26.0	24.5	Vasiliev, 2005, 2011
	Present day	South of Western Siberia	82	19.5–25.4	22.27	Vasiliev, 2005, 2011
	Novosibirsk Region, Late Holocene	Russia	28	21.8–25.5	23.65	Vasiliev, 2005, 2011
	Ostrówki near Chodzież, Subatlanticum	Poland	1	–	23.44	Original data
	Jasna Strzegowska Cave, Holocene	Poland	1	20.02	–	Original data
	Dudka Middle, Atlanthicum	Poland	2	20.1–21.23	20.66	Original data
	Dudka, Boreal	Poland	3	23.0–23.5	23.27	Original data
	Krosinko, Preboreal	Poland	1	24.8	–	Original data
	Dudka, Preboreal	Poland	4	23.29–24.32	23.83	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	7	21.6–24.6	23.5	Breda, 2001b
	Andernach, Allerød	Germany	1	–	27.5	Turner, 1990
	Niederbieber, Allerød	Germany	1	–	24.2	Turner, 1990
	Šipka II, MIS3	Czech Republic	1	–	23.73	Original data
	Krasnyi Yar Siberia, MIS 5e	Russia	8	21.8–24.0	23.29	Vasiliev, 2005, 2011
	Middle, Pleistocene	Ukraine	1	–	23.0	Aleekseeva, 1977
	Tomsk Region, Middle Pleistocene	Russia	7	21.2–26.3	23.8	Alekseeva, 1980; Vasiliev, 2005, 2011
	Ehringsdorf, MIS 7	Germany	2	24.9–26.2	25.55	Kahlke, 1975
	Vergranne, MIS 11	France	2	24–25.5	24.75	Geraads, 1983
	Sitkówka, Middle Pleistocene	Poland	1	–	20.8	Original data
	Mosbach, MIS 14–13	Germany	6	24.4–27.0	26.1	Kahlke, 1960
	Mosbach (Darmstadt, Wiesbaden), MIS 14–13	Germany	5	23.8–27.0	25.4	Kahlke, 1960
	Süssenborn, MIS 16	Germany	6	27.3–29.7	28.12	Kahlke, 1956, 1969
	Voigstedt, MIS 17	Germany	1	–	27.9	Kahlke, 1958, 1965
	Dorn–Dürkheim 3, MIS 21	Germany	1	–	27.7	Franzen <i>et al.</i> , 2000
	Żabia Cave, MIS 58–40	Poland	1	–	23.90	Original data
Senèze, MIS 85–76	France	1	–	19.5	Heintz 1970	

Measurement	Locality; Age	Country	N	Min. – max.	Mean	Source data
Width of P ₃	Present day	Sweden	2	15.0–20.0	17.5	Original data
	Present day	Norway	2	17.0–17.4	17.2	Breda, 2001b
	Present day	Northeastern Siberia	10	15.2–18.2	17.0	Vasiliev, 2005, 2011
	Present day	South of Western Siberia	82	14.4–19.5	16.64	Vasiliev, 2005, 2011
	Novosibirsk Region, Late Holocene	Russia	28	16.0–18.5	17.24	Vasiliev, 2005, 2011
	Ostrówki near Chodzież, Subatlanticum	Poland	1	–	17.8	Original data
	Jasna Strzegowska Cave, Holocene	Poland	1	–	13.78	Original data
	Dudka, Middle Atlanthicum	Poland	2	14.34–14.46	14.4	Original data
	Dudka, Boreal	Poland	2	15.96–15.98	15.97	Original data
	Krosinko, Preboreal	Poland	1	–	18.3	Original data
	Dudka, Preboreal	Poland	4	16.37–17.7	17.07	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	7	15.8–18.0	16.78	Breda, 2001b
	Andernach, Allerød	Germany	1	–	16.0	Turner, 1990
	Niederbieber, Allerød	Germany	1	–	17.4	Turner, 1990
	Šipka II, MIS3	Czech Republic	1	–	17.54	Original data
	Krasnyi Yar Siberia, MIS 5e	Russia	8	16.5–19.0	17.9	Vasiliev, 2005, 2011
	Ukraine, Middle Pleistocene	Ukraine	1	–	14.2	Alekseeva, 1977
	Tomsk Region, Middle Pleistocene	Russia	6	16.5–18.5	17.6	Alekseeva, 1980; Vasiliev, 2005, 2011
	Ehringsdorf, MIS 7	Germany	2	17.7–19.3	18.5	Kahlke, 1975
	Vergranne, MIS 11	France	2	18	18	Geraads, 1983;
	Sitkówka, Middle Pleistocene	Poland	1	–	13.5	Original data
	Mosbach, MIS 14–13	Germany	6	17.5–19.1	18.01	Kahlke, 1960
	Mosbach (Darmstadt, Wiesbaden), MIS 14–13	Germany	5	16.7–18.7	17.6	Kahlke, 1960
	Süssenborn, MIS 16	Germany	7	16.4–20.1	18.74	Kahlke, 1956, 1969
Voigstedt, MIS 17	Germany	1	–	19.9	Kahlke, 1958, 1965	
Dorn–Dürkheim 3, MIS 21	Germany	1	–	19.2	Franzen <i>et al.</i> , 2000	
Żabia Cave, MIS 58–40	Poland	1	–	15.6	Original data	

Measurement	Locality; Age	Country	N	Min. – max.	Mean	Source data
Length of P₄	Present day	Sweden	2	22.0–26.0	24.0	Original data
	Present day	Norway	2	26.3–26.8	26.55	Breda, 2001b
	Northeastern Siberia, Present day	Russia	10	27.2–31.0	28.7	Vasiliev, 2005, 2011
	South of Western Siberia, Present day	Russia	82	22.0–29.0	25.1	Vasiliev, 2005, 2011
	Novosibirsk Region, Late Holocene	Russia	32	24.0–29.7	27.04	Vasiliev, 2005, 2011
	Ostrówki near Chodzież, Subatlanticum	Poland	1	–	27.93	Original data
	Jasna Strzegowska, Cave Holocene	Poland	1	–	21.74	Original data
	Dudka, Atlanticum/Subboreal	Poland	1	–	28.14	Original data
	Dudka, Middle Atlanthicum	Poland	2	25.17–25.37	25.27	Original data
	Dudka, Boreal	Poland	2	26.68–28.93	27.8	Original data
Length of P₄	Dudka, Preboreal	Poland	4	23.83–28.89	27.77	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	7	23.1–29.1	26.51	Breda, 2001b
	Andernach, Allerød	Germany	1	–	31.0	Turner, 1990
	Niederbieber, Allerød	Germany	2	27.5–27.8	27.65	Turner, 1990
	Prédmosti, MIS 2–3	Czech Republic	3	23.3–29.6	26.32	Original data
	Šipka II, MIS3	Czech Republic	1	–	27.41	Original data
	Krasnyi Yar Siberia, MIS 5e	Russia	8	26.3–29.3	27.86	Vasiliev, 2005, 2011
	Tomsk Region, Middle Pleistocene	Russia	9	25.3–31.0	28.58	Alekseeva, 1980; Vasiliev 2005, 2011
	Ehringsdorf, MIS 7	Germany	2	28.1–28.6	25.55	Kahlke, 1975
	Vergranne, MIS 11	France	1	–	28.5	Geraads, 1983
	Sitkówka, Middle Pleistocene	Poland	1	–	33.6	Original data
	Mosbach, MIS 14–13	Germany	12	27.4–30.8	28.73	Kahlke, 1960
	Mosbach (Darmstadt, Wiesbaden), MIS 14–13	Germany	1	–	30.0	Kahlke, 1960
	Süssenborn, MIS 16	Germany	12	29.9–34.2	32.15	Kahlke, 1956, 1969
	Tiraspol, MIS 16	Moldova	1	–	29.2	Kahlke, 1971a
	Voigstedt, MIS 17	Germany	1	–	31.3	Kahlke, 1958, 1965
	Żabia Cave, MIS 58–40	Poland	1	–	27.5	Original data
	Senèze, MIS 85–76	France	1	–	22.5	Heintz, 1970
	Liventsovka, MIS 104–84	Russia	1	–	>19.5	Titov, 2008

Measurement	Locality; Age	Country	N	Min. – max.	Mean	Source data
Width of P ₄	Present day	Sweden	2	18.0–20.0	19.0	Original data
	Present day	Norway	2	19.3–21.7	20.5	Breda, 2001b
	Northeastern Siberia, Present day	Russia	10	18.0–21.0	19.7	Vasiliev, 2005, 2011
	South of Western Siberia, Present day	Russia	82	17.3–21.0	19.23	Vasiliev, 2005, 2011
	Novosibirsk Region, Late Holocene	Russia	33	18.0–21.4	19.79	Vasiliev, 2005, 2011
	Ostrówki near Chodzież, Subatlanticum	Poland	1	–	20.57	Original data
	Jasna Strzegowska Cave, Holocene	Poland	1	–	16.19	Original data
	Dudka, Atlanticum/Subboreal	Poland	1	–	19.3	Original data
	Dudka, Middle Atlanthicum	Poland	1	–	17.41	Original data
	Dudka, Boreal	Poland	2	18.96–20.92	19.94	Original data
	Dudka, Preboreal	Poland	4	20.08–23.83	21.21	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	7	17.6–20.9	19.74	Breda, 2001b
	Andernach, Allerød	Germany	1	–	21.0	Turner, 1990
	Niederbieber, Allerød	Germany	2	19.4–19.9	19.65	Turner, 1990
Width of P ₄	Prědmosti, MIS 2–3	Czech Republic	2	18.63–20.72	19.67	Original data
	Šipka II, MIS3	Czech Republic	1	–	21.0	Original data
	Krasnyi Yar Siberia, MIS 5e	Russia	8	20.0–22.0	21.03	Vasiliev, 2005, 2011
	Tomsk Region, Middle Pleistocene	Russia	8	19.0–22.0	20.4	Alekseeva, 1980; Vasiliev, 2005, 2011
	Ehringsdorf, MIS 7	Germany	2	19.9–22.5	21.2	Kahlke, 1975
	Sitkówka, Middle Pleistocene	Poland	1	–	24.6	Original data
	Mosbach, MIS 14–13	Germany	12	18.0–20.9	19.78	Kahlke, 1960
	Mosbach (Darmstadt, Wiesbaden), MIS 14–13	Germany	1	–	19.6	Kahlke, 1960
	Süssenborn, MIS 16	Germany	12	21.2–24.3	22.75	Kahlke, 1956, 1969
	Tiraspol, MIS 16	Moldova	1	–	20.1	Kahlke, 1971a
	Voigstedt, MIS 17	Germany	1	–	21.1	Kahlke, 1958, 1965
Żabia Cave, MIS 58–40	Poland	1	–	20.4	Original data	

Length and width of lower molars of elks of the genus *Cervalces* Scott, 1885 and *Alces* Gray, 1821 from Eurasian localities.

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Length of M ₁	Present day	Sweden	2	21.0–23.0	22.5	Original data
	Present day	Norway	2	26.4–27.6	27.0	Breda, 2001b
	Northeastern Siberia, Present day	Russia	10	27.0–29.5	28.2	Vasiliev, 2005, 2011
	South of Western Siberia, Present day	Russia	82	22.0–28.3	24.9	Vasiliev, 2005, 2011
	Novosibirsk Region, Late Holocene	Russia	25	24.5–28.3	26.02	Vasiliev, 2005, 2011
	Santok, Middle Ages	Poland	1	–	25.0	Schramm and Kranz, 1978
	Ostrówki, near Chodzież, Subatlanticum	Poland	1	–	26.27	Original data
	Jasna Strzegowska Cave, Holocene	Poland	1	–	24.89	Original data
	Dudka, Early/Middle Atlanthicum	Poland	2	22.95–24.2	23.57	Original data
	Dudka, Boreal	Poland	2	26.38–27.0	26.69	Original data
	Dudka, Preboreal	Poland	4	27.68–28.37	28.03	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	10	24.3–29.4	27.37	Breda, 2001b
	Niederbieber, Allerød	Germany	2	25.0–25.8	25.4	Turner, 1990
	Prědmosti, MIS 2–3	Czech Republic	1	–	24,66	Original data
	Šipka II, MIS3	Czech Republic	1	–	26.61	Original data
	Švédův stůl, MIS 3	Czech Republic	1	–	27.0	Musil, 1961
	Grotte de Enfants, MIS 5–3	Italy	1	–	23.0	Malez, 1963
	Veternica Cave, MIS 5ac–MIS 3	Croatia	1	–	25.2	Malez, 1963
	Krasnyi Yar Siberia, MIS 5e	Russia	9	23.2–27.0	25.39	Vasiliev, 2005, 2011
	Tomsk Region, Middle Pleistocene	Russia	8	26.3–30.0	27.71	Alekseeva, 1980; Vasiliev, 2005, 2011
	Ehringsdorf, MIS 7	Germany	1	–	29.3	Kahlke, 1975
	Vergranne, MIS 11	France	1	–	28.0	Geraads, 1983
	Sitkówka, Middle Pleistocene	Poland	1	–	27.7	Original data
	Mosbach, MIS 14–13	Germany	12	24.7–29.8	26.93	Kahlke, 1960
	Mosbach (Darmstadt, Wiesbaden), MIS 14–13	Germany	1	–	28.6	Kahlke, 1960
	Süssenborn, MIS 16	Germany	8	27.2–35.2	31.35	Kahlke, 1956, 1969
	Voigstedt, MIS 17	Germany	1	–	29.0	Kahlke, 1958, 1965
	Untermassfeld, MIS 31	Germany	2	27.8–27.9	27.85	Kahlke, 1995b
	Żabia Cave, MIS 58–40	Poland	2	25.3–25.9	25.6	Original data
	Senèze, MIS 85–76	France	1	–	24.2	Heintz, 1970
Liventsovka, MIS 104–84	Russia	1	–	>19	Titov, 2008	

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Width of anterior lobe of M ₁	Present day	Sweden	2	19.0–20.0	19.5	Original data
	Present day	Norway	2	20.0–20.5	20.25	Breda, 2001b
	Northeastern Siberia, Present day	Russia	10	18.0–22.0	20.6	Vasiliev, 2005, 2011
	South of Western Siberia, Present day	Russia	82	17.5–22.5	19.7	Vasiliev, 2005, 2011
	Novosibirsk Region, Late Holocene	Russia	23	18.5–21.5	20.32	Vasiliev, 2005, 2011
	Santok, Middle Ages	Poland	1	–	18.0	Schramm and Kranz, 1978
	Ostrówki near Chodzież, Subatlanticum	Poland	1	–	19.9	Original data
	Jasna Strzegowska Cave, Holocene	Poland	1	–	20.39	Original data
	Dudka, Early/Middle Atlanthicum	Poland	1	–	17.55	Original data
	Dudka, Boreal	Poland	2	18.55–19.66	19.25	Original data
	Dudka, Preboreal	Poland	3	19.46–20.34	19.86	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	10	16.6–21.8	20.13	Breda, 2001b
	Niederbieber, Allerød	Germany	2	20.5	20.5	Turner, 1990
	Prědmosti, MIS 2–3	Czech Republic	1	–	19.8	Original data
	Šipka II, MIS3	Czech Republic	1	–	18.91	Original data
	Švédův stůl, MIS 3	Czech Republic	1	–	18.5	Musil, 1961
	Grotte de Enfants, MIS 5–3	Italy	1	–	18.0	Malez, 1963
	Veternica Cave, MIS 5ac–MIS 3	Croatia	1	–	19.4	Malez, 1963
	Krasnyi Yar Siberia, MIS 5e	Russia	9	20.5–24.0	21.92	Vasiliev, 2005, 2011
	Tomsk Region, Middle Pleistocene	Russia	6	21.0–23.5	21.72	Alekseeva, 1980; Vasiliev, 2005, 2011
	Ehringsdorf, MIS 7	Germany	1	–	20.3	Kahlke, 1975
	Vergranne, MIS 11	France	1	–	21.5	Geraads, 1983
	Sitkówka, Middle Pleistocene	Poland	1	–	20.8	Original data
	Mosbach, MIS 14–13	Germany	13	20.1–22.6	21.3	Kahlke, 1960
	Mosbach (Darmstadt, Wiesbaden), MIS 14–13	Germany	1	19.7	–	Kahlke, 1960
	Süssenborn, MIS 16	Germany	9	21.7–28.1	23.95	Kahlke, 1956, 1969
	Voigstedt, MIS 17	Germany	1	–	21.1	Kahlke, 1958, 1965
	Untermassfeld, MIS 31	Germany	2	20.0–20.4	20.2	Kahlke, 1995b
	Żabia Cave, MIS 58–40	Poland	2	18.1–18.3	18.2	Original data
	Senèze, MIS 85–76	France	1	–	16.7	Heintz, 1970
	Liventsovka, MIS 104–84	Russia	1	–	16.2	Titov, 2008

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Width of posterior lobe of M_1	Present day	Sweden	2	19.8–22.5	21.15	Original data
	Ostrówki near Chodzież, Subatlanticum	Poland	1	–	21.32	Original data
	Jasna Strzegowska, Cave Holocene	Poland	1	–	20.11	Original data
	Dudka, Early/Middle Atlanthicum	Poland	1	–	18.07	Original data
	Dudka, Boreal	Poland	2	19.03–19.62	19.32	Original data
	Dudka, Preboreal	Poland	4	20.0–21.09	20.44	Original data
	Šipka II, MIS3	Czech Republic	1	–	20.17	Original data
	Švédův stůl, MIS 3	Czech Republic	1	–	18.5	Musil, 1961
	Veternica, Cave MIS 5ac – MIS 3	Croatia	1	–	20.1	Malez, 1963
	Ehringsdorf, MIS 7	Germany	1	–	21.2	Kahlke, 1975
	Sitkówka, Middle Pleistocene	Poland	1	–	22.3	Original data
	Mosbach, MIS 14–13	Germany	16	27.1–32.8	28.83	Kahlke, 1960
	Mosbach (Darmstadt, Wiesbaden), MIS 14–13	Germany	1	–	21.7	Kahlke, 1960
	Süssenborn, MIS 16	Germany	7	23.9–26.0	24.58	Kahlke, 1956, 1969
	Voigstedt, MIS 17	Germany	1	–	23.2	Kahlke, 1958, 1965
	Untermassfeld, MIS 31	Germany	2	20.8–21.5	21.15	Kahlke, 1995b
	Żabia Cave, MIS 58–40	Poland	2	20.0–20.4	20.2	Original data
Length of M_2	Present day	Sweden	2	25.0–30.0	27,5	Original data
	Present day	Norway	2	27.8–28.7	28.25	Breda, 2001b
	Northeastern Siberia, Present day	Russia	10	28.7–32.0	30.6	Vasiliev, 2005, 2011
	South of Western Siberia, Present day	Russia	82	24.0–29.5	27.35	Vasiliev, 2005, 2011
	Novosibirsk Region, Late Holocene	Russia	23	26.5–31.0	29.05	Vasiliev, 2005, 2011
	Santok. Middle Ages	Poland	1	–	27.0	Schramm and Kranz, 1978
	Ostrówki near Chodzież, Subatlanticum	Poland	1	–	28.54	Original data
	Lithuania, Latvia, Estonia Holocene	Poland	60	25.0–30.0	27.71	Original data
	Jasna Strzegowska, Cave Holocene	Poland	2	26.14–29.31	27.72	Original data
	Dudka, Early/Middle Atlanthicum	Poland	2	25.65–26.01	25.83	Original data
	Dudka, Boreal	Poland	1	–	30.23	Original data
	Dudka, Preboreal	Poland	3	27.86–30.26	29.29	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	6	27.8–30.0	28.78	Breda, 2001b
	Prědmosti, MIS 2–3	Czech Republic	1	–	28.98	Original data
	Šipka II, MIS3	Czech Republic	1	–	26.72	Original data
	Krasnyi Yar Siberia, MIS 5e	Russia	9	27.8–30.0	28.64	Vasiliev, 2005, 2011

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Length of M₂	Middle Pleistocene	Ukraine	1	–	26.8	Aleekseeva, 1977
	Tomsk Region, Middle Pleistocene	Russia	7	27.0–32.0	29.03	Alekseeva, 1980; Vasiliev, 2005, 2011
	Ehringsdorf, MIS 7	Germany	1	–	30.6	Kahlke, 1975
	Vergranne, MIS 11	France	2	28.0–29.5	28.75	Geraads, 1983
	Sitkówka, Middle Pleistocene	Poland	1	–	32.9	Original data
	Mosbach, MIS 14–13	Germany	17	27.1–32.8	28.83	Kahlke, 1960
	Mosbach (Darmstadt, Wiesbaden), MIS 14–13	Germany	1	–	31.8	Kahlke, 1960
	Süssenborn, MIS 16	Germany	12	29.4–35.2	33.16	Kahlke, 1956, 1969
	Żabia Cave, MIS 58–40	Poland	2	27.6–28.8	28.2	Original data
	Senèze, MIS 85–76	France	1	–	23.0	Heintz, 1970
	East Runton, MIS 63–61	Great Britain	1	–	23.0	Azzaroli, 1953
	Liventsovka, MIS 104–84	Russia	1	–	23.5	Titov, 2008
Width of anterior lobe of M₂	Present day	Sweden	2	18.0–24.0	21.0	Original data
	Present day	Norway	2	20.4–22.0	21.2	Breda, 2001b
	Northeastern Siberia, Present day	Russia	10	20.0–26.0	22.5	Vasiliev, 2005, 2011
	South of Western Siberia, Present day	Russia	82	19.0–25.0	21.05	Vasiliev, 2005, 2011
	Novosibirsk Region, Late Holocene	Russia	23	19.0–23.8	21.79	Vasiliev, 2005, 2011
	Santok, Middle Ages	Poland	1	–	21	Schramm and Kranz, 1978
	Ostrówki near Chodzież, Subatlanticum	Poland	1	–	22.52	Original data
	Holocene	Lithuania, Latvia, Estonia	103	18.0–24.0	21.12	Paaver, 1965
	Jasna Strzegowska, Cave Holocene	Poland	2	21.96–22.64	22.3	Original data
	Dudka, Early/Middle Atlanthicum	Poland	1	–	18.56	Original data
	Dudka, Boreal	Poland	1	–	21.46	Original data
	Dudka, Preboreal	Poland	3	23.46–23.76	23.63	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	6	20.3–22.8	21.58	Breda, 2001b
	Prědmosti, MIS 2–3	Czech Republic	1	–	22.9	Original data
	Šipka, II MIS3	Czech Republic	1	–	22.62	Original data
	Krasnyi Yar, Siberia MIS 5e	Russia	9	21.8–24.5	23.01	Vasiliev, 2005, 2011
	Ukraine, Middle Pleistocene	Ukraine	1	–	16.7	Aleekseeva, 1977
	Tomsk Region, Middle Pleistocene	Russia	7	21.2–24.0	22.74	Alekseeva, 1980; Vasiliev, 2005, 2011
	Ehringsdorf, MIS 7	Germany	1	–	21.9	Kahlke, 1975
	Vergranne, MIS 11	France	2	22.5	22.5	Geraads, 1983
Mundesley, MIS 13	Great Britain	1	–	20.0	Azzaroli, 1953	

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Width of anterior lobe of M₂	Sitkówka, Middle Pleistocene	Poland	1	–	24.4	Original data
	Mosbach, MIS 14–13	Germany	16	21.5–25.8	23.46	Kahlke, 1960
	Mosbach (Darmstadt, Wiesbaden), MIS 14–13	Germany	1	–	23.9	Kahlke, 1960
	Cromer, MIS 15–14	Germany	1	–	25.0	Azzaroli, 1953
	Süssenborn, MIS 16	Germany	12	21.3–28.8	25.49	Kahlke, 1956, 1969
	Żabia Cave, MIS 58–40	Poland	2	20.30–20.50	20.4	Original data
	East Runton, MIS 63–61	Great Britain	1	14.0–19.0	16.0	Azzaroli, 1953
	Liventsovka, MIS 104–84	Russia	1	–	18.0	Titov, 2008
Width of posterior lobe of M₂	Present day	Sweden	2	20.5–26.0	23.25	Original data
	Ostrówki near Chodzież, Subatlanticum	Poland	1	–	22.26	Original data
	Jasna Strzegowska Cave, Holocene	Poland	2	21.3–22.62	21.96	Original data
	Dudka, Early/Middle Atlanthicum	Poland	1	–	18.77	Original data
	Dudka, Boreal	Poland	1	–	20.85	Original data
	Dudka, Preboreal	Poland	3	22.09–22.67	22.34	Original data
	Prědmosti, MIS 2–3	Czech Republic	1	–	22.76	Original data
	Šipka II, MIS3	Czech Republic	1	–	21.75	Original data
	Ehringsdorf, MIS 7	Germany	1	–	21.8	Kahlke, 1975
	Sitkówka, Middle Pleistocene	Poland	1	–	24.8	Original data
	Mosbach, MIS 14–13	Germany	17	20.5–26.0	23.25	Kahlke, 1960
	Mosbach (Darmstadt, Wiesbaden), MIS 14–13	Germany	1	–	23.4	Kahlke, 1960
	Süssenborn, MIS 16	Germany	10	22.8–27.9	25.13	Kahlke, 1956, 1969
	Żabia Cave, MIS 58–40	Poland	2	21.2–21.9	21.55	Original data
Length of M₃	Present day	Sweden	2	37.0–45.0	41.0	Original data
	Present day	Norway	2	37.5–38.7	38.1	Breda, 2001b
	Northeastern Siberia, Present day	Russia	10	39.0–42.0	40.5	Vasiliev, 2005, 2011
	South of Western Siberia, Present day	Russia	82	34.0–42.5	37.97	Vasiliev, 2005, 2011
	Novosibirsk Region, Late Holocene	Russia	36	37.3–42.5	39.76	Vasiliev, 2005, 2011
	Santok, Middle Ages	Poland	–	37–39	37.7	Schramm and Kranz, 1978
	Ostrówki near Chodzież, Subatlanticum	Poland	1	–	39.47	Original data
	Holocene	Lithuania, Latvia, Estonia	107	37.0–44.0	40.72	Paaver, 1965
	Jasna Strzegowska Cave, Holocene	Poland	2	35.41–36.37	35.89	Original data
	Dudka, Early/Middle Atlanthicum	Poland	2	35.59–35.65	35.62	Original data
	Dudka, Boreal	Poland	1	–	40.73	Original data

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Length of M₃	Dudka, Preboreal	Poland	3	38.58–40.67	39.76	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	7	37.0–39.0	38.38	Breda, 2001b
	Prědmosti, MIS 2–3	Czech Republic	1	–	39.91	Original data
	Šipka II, MIS3	Czech Republic	1	–	37.64	Original data
	Łokietka Cave, MIS 5a–d	Poland	1	–	34.95	Original data
	Dziadowa Skala Cave, MIS 5e	Poland	2	39.68–40.88	40.28	Original data
	Krasnyi Yar Siberia, MIS 5e	Russia	10	39.8–43.8	41.97	Vasiliev, 2005, 2011
	Tomsk Region Middle Pleistocene	Russia	7	38.4–46.0	41.36	Alekseeva, 1980; Vasiliev, 2005, 2011
	Ehringsdorf, MIS 7	Germany	2	41.2–43.3	42.25	Kahlke, 1975
	Vergranne, MIS 11	France	2	39.5–41.0	40.25	Geraads, 1983
	Sitkówka, Middle Pleistocene	Poland	1	–	46.8	Original data
	Mosbach, MIS 14–13	Germany	11	40.5–47.4	44.03	Kahlke, 1960
	Mosbach (Darmstadt, Wiesbaden), MIS 14–13	Germany	3	41.4–44.4	42.6	Kahlke, 1960
	Süssenborn, MIS 16	Germany	14	44.1–48.9	46.64	Kahlke, 1956, 1969
	Voigstedt, MIS 17	Germany	1	–	45.6	Kahlke, 1958, 1965
	Tiraspol, MIS 17	Moldova	1	–	44.7	Kahlke, 1971a
	Żabia Cave, MIS 58–40	Poland	2	37.7–40.2	38.95	Original data
	Senèze, MIS 85–76	France	1	–	34.0	Heintz, 1970
Liventsovka, MIS 104–84	Russia	1	–	33.0	Titov, 2008	
Width of anterior lobe of M₃	Present day	Sweden	2	19.0–24.0	21.5	Original data
	Present day	Norway	2	22.4–22.8	22.6	Breda, 2001b
	Northeastern Siberia, Present day	Russia	10	19.0–24.0	21.5	Vasiliev, 2005, 2011
	South of Western Siberia, Present day	Russia	82	18.6–23.8	21.2	Vasiliev, 2005, 2011
	Novosibirsk Region, Late Holocene	Russia	39	19.5–23.5	22.27	Vasiliev, 2005, 2011
	Santok, Middle Ages	Poland	–	20.0–22.0	20.7	Schramm and Kranz, 1978
	Ostrówki near Chodzież, Subatlanticum	Poland	1	–	23.04	Original data
	Holocene	Lithuania, Latvia, Estonia	102	19.0–24.0	22.29	Paaver, 1965
	Jasna Strzegowska, Cave Holocene	Poland	2	23.55–23.57	23.56	Original data
	Dudka, Early/Middle Atlanticum	Poland	2	19.54–19.78	19.66	Original data
	Dudka, Boreal	Poland	1	–	21.69	Original data
	Dudka, Preboreal	Poland	3	22.26–23.4	22.81	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	7	21.4–29.8	23.08	Breda, 2001b
Prědmosti, MIS 2–3	Czech Republic	1	–	22.86	Original data	

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Width of anterior lobe of M₃	Šipka II, MIS3	Czech Republic	1	–	23.25	Original data
	Dziadowa Skala Cave, MIS 5e	Poland	1	–	23.35	Original data
	Krasnyi Yar Siberia, MIS 5e	Russia	11	19.5–24.7	22.88	Vasiliev, 2005, 2011
	Tomsk Region, Middle Pleistocene	Russia	7	21.8–25.0	23.34	Alekseeva, 1980; Vasiliev, 2005, 2011
	Ehringsdorf, MIS 7	Germany	2	21.8–23.4	22.6	Kahlke, 1975
	Vergranne, MIS 11	France	2	21.5	21.5	Geraads, 1983
	Sitkówka, Middle Pleistocene	Poland	1	–	24.1	Original data
	Mosbach, MIS 14–13	Germany	15	22.0–26.2	23.64	Kahlke, 1960
	Mosbach (Darmstadt, Wiesbaden), MIS 14–13	Germany	3	21.6–24.5	23.1	Kahlke, 1960
	Süssenborn, MIS 16	Germany	14	23.8–28.0	26.04	Kahlke, 1956, 1969
	Voigstedt, MIS 17	Germany	1	–	24.6	Kahlke, 1958, 1965
	Tiraspol, MIS 17	Moldova	1	–	26.5	Kahlke, 1971a
	Żabia Cave, MIS 58–40	Poland	2	28.8–28.9	20.85	Original data
	Senèze, MIS 85–76	France	–	17.3	–	Heintz, 1970
Liventsovka, MIS 104–84	Russia	1	–	17.0	Titov, 2008	
Width of second lobe of M₃	Present day	Sweden	15	21.0–24.9	22.58	Original data
	Ostrówki near Chodzież, Subatlanticum	Poland	1	–	17.46	Original data
	Jasna Strzegowska Cave, Holocene	Poland	2	21.15–21.48	21.31	Original data
	Dudka, Early/Middle Atlanticum	Poland	2	19.74–19.82	19.78	Original data
	Dudka, Boreal	Poland	1	–	21.46	Original data
	Dudka, Preboreal	Poland	3	15.56–16.46	15.86	Original data
	Prědmosti, MIS 2–3	Czech Republic	1	–	23.07	Original data
	Šipka II, MIS3	Czech Republic	1	–	22.5	Original data
	Łokietka Cave, MIS 5a–d	Poland	1	–	20.23	Original data
	Dziadowa Skala Cave, MIS 5e	Poland	1	–	23.17	Original data
	Ehringsdorf, MIS 7	Germany	2	21.6–22.3	21.95	Kahlke, 1975
	Sitkówka, Middle Pleistocene	Poland	1	–	22.6	Original data
	Mosbach, MIS 14–13	Germany	15	21.0–24.9	22.58	Kahlke, 1960
	Mosbach (Darmstadt, Wiesbaden), MIS 14–13	Germany	3	21.3–23.8	22.6	Kahlke, 1960
	Süssenborn, MIS 16	Germany	18	21.4–25.4	23.29	Kahlke, 1956, 1969
	Voigstedt, MIS 17	Germany	–	24.8	–	Kahlke, 1958, 1965
	Żabia Cave, MIS 58–40	Poland	2	27.4–27.5	21.45	Original data

Appendix Table 3

Length of lower molar row of elks of the genus *Cervalces* Scott, 1885 and *Alces* Gray, 1821 from Eurasian localities.

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Length of $M_1 - M_3$	Present day	Sweden	2	90.1–94.9	92.5	Original data
	Present day	Norway	2	88.9–97.1	93.0	Breda, 2001b
	Northeastern Siberia, Present day	Russia	12	81.0–96.0	88.3	Vasiliev, 2005, 2011
	South of Western Siberia, Present day	Russia	82	83.0–99.5	91.99	Vasiliev, 2005, 2011
	Novosibirsk Region, Late Holocene	Russia	17	90.0–103.0	96.67	Vasiliev, 2005, 2011
	Present day	Lithuania, Latvia, Estonia	1	–	95.22	Paaver, 1965
	Middle Holocene	Lithuania, Latvia, Estonia	1	–	94.4	Paaver, 1965
	Dudka, Early/Middle Atlanticum	Poland	1	89.03	–	Original data
	Dudka, Praeboreal	Poland	3	93.76–94.7	94.32	Original data
	Jasna Strzegowska Cave, Holocene	Poland	1	–	94.35	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	5	80.0–96.0	92.16	Breda, 2001b
	Šipka II, MIS 3	Czech Republic	1	–	94.21	Original data
	Krasnyi Yar Siberia, MIS 5e	Russia	9	92.0–101.5	98.11	Vasiliev, 2005, 2011
	Tomsk Region, Middle Pleistocene	Russia	4	92.0–109.0	99.5	Alekseeva, 1980; Vasiliev, 2005, 2011
	Ehringsdorf, MIS 7	Germany	1	–	99.4	Kahlke, 1975
	Mundesley, MIS 13	Great Britain	1	–	88.0	Azzaroli, 1953
	Mauer, MIS 13	Germany	1	–	102.0	Kahlke, 1995b
	Sitkówka, Middle Pleistocene	Poland	1	–	103.5	Original data
	Mosbach, MIS 14–13	Germany	18	99.3–114.3	103.4	Kahlke, 1960
	Cromer, MIS 15–14	Great Britain	1	–	112.0	Azzaroli, 1953
	Süssenborn, MIS 16	Germany	4	110.7–112.8	111.6	Kahlke, 1956, 1969
	Tiraspol, MIS 17	Moldova	1	–	112.8	Kahlke, 1971a
	Würzburg–Schalksberg, MIS 20	Germany	1	–	102.2	Mäuser, 1987, 1990
	Untermassfeld, MIS 31	Germany	1	–	98.0	Kahlke, 2001
	Żabia Cave, MIS 58–40	Poland	1	–	92.0	Original data
	East Runton, MIS 63–61	Great Britain	3	71.0–80.0	75.0	Azzaroli, 1953
Senèze, MIS 85–76	France	1	–	80.5	Heintz, 1970	

Appendix Table 4

Length and width of upper premolars of elks of the genus *Cervalces* Scott, 1885 and *Alces* Gray, 1821 from Eurasian localities.

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Length of P ²	Present day	Sweden	2	23.0–24.1	23.55	Original data
	Present day	Norway	2	22.4–24.4	23.4	Breda, 2001b
	Middle Ages	Poland	1	–	25.0	Sobociński and Godynicki, 1975; Sobociński, 1977, 1985; Sosnowski, 1981
	Wielkopolska, Holocene	Poland	1	–	29.0	Niezabitowski-Lubicz, 1929
	Jasna Strzegowska, Cave Holocene	Poland	1	–	23.97	Original data
	Krosinko, Preboreal	Poland	1	–	23.7	Original data
	Dudka, Preboreal	Poland	3	21.95–23.05	22.34	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	6	21.6–25.0	23.55	Breda, 2001b
	Ehringsdorf, MIS 7	Germany	3	20.2–26.1	23.77	Kahlke, 1975
	Vergranne, MIS 11	France	2	21.0–22.0	21.5	Geraads, 1983
	Mosbach, MIS 14–13	Germany	2	23.5–26.4	24.95	Kahlke, 1960
	Süssenborn, MIS 16	Germany	1	–	29.5	Kahlke, 1956, 1969
	Stránská Skála, MIS 17–16	Czech Republic	1	–	28.2	Kahlke, 1971b, 1995a
	Voigstedt, MIS 17	Germany	1	–	26.5	Kahlke, 1958, 1965
	Kozi Grzbiet, MIS 18–17	Poland	1	–	25.5	Original data
	Żabia Cave, MIS 58–40	Poland	1	–	20.6	Original data
	Senèze, MIS 85–76	France	1	–	19.0	Heintz, 1970
Width of P ²	Present day	Sweden	2	22.7–24.5	23.15	Original data
	Present day	Norway	2	21.7–22.6	22.15	Breda 2001b
	Middle Ages	Poland	1	–	21.0	Sobocinski and Godynicki, 1975; Sobociński, 1977, 1985; Sosnowski, 1981
	Wielkopolska, Holocene	Poland	1	–	26.0	Niezabitowski-Lubicz, 1929
	Jasna Strzegowska Cave, Holocene	Poland	1	–	23.36	Original data
	Krosinko, Preboreal	Poland	1	–	22.5	Original data
	Dudka, Preboreal	Poland	2	21.35–22.25	21.92	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	6	22.2–24.5	23.36	Breda, 2001b
	Ehringsdorf, MIS 7	Germany	3	23.8–30.5	25.57	Kahlke, 1975
	Vergranne, MIS 11	France	2	22.5–23.5	23.0	Geraads, 1983
	Mosbach, MIS 14–13	Germany	2	24.5–26.1	25.3	Kahlke, 1960
	Süssenborn, MIS 16	Germany	2	26.3–29.5	27.9	Kahlke, 1956, 1969
	Stránská Skála, MIS 17–16	Czech Republic	1	–	30.3	Kahlke, 1971b, 1995a

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Width of P ²	Voigstedt, MIS 17	Germany	1	–	27.3	Kahlke, 1958, 1965
	Kozi Grzbiet, MIS 18–17	Poland	1	–	25.7	Original data
	Żabia Cave, MIS 58–40	Poland	1	–	21.90	Original data
Length of P ³	Present day	Sweden	2	22.1–23.1	22.6	Original data
	Present day	Norway	2	22.5–23.5	23.0	Breda, 2001b
	Middle Ages	Poland	1	–	22.0	Sobociński and Godynicki, 1975; Sobociński, 1977, 1985; Sosnowski, 1981
	Wielkopolska, Holocene	Poland	2	22.0–22.5	22.25	Niezabitowski-Lubicz, 1929
	Krosinko, Preboreal	Poland	2	23.6–24.1	23.85	Original data
	Dudka, Preboreal	Poland	4	22.99–23.96	23.46	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	5	21.7–24.5	22.82	Breda, 2001b
	Western Siberia, Upper Pleistocene/Holocene	Russia		21.0–22.0		Alekseeva, 1980; Foronova, 2001
	Ehringsdorf, MIS 7	Germany	4	21.4–25.3	23.67	Kahlke, 1975
	Vergranne, MIS 11	France	2	22.0–23.0	22.5	Geraads, 1983
	Biśnik Cave, MIS 8/7 or MIS 6	Poland	1	–	24.46	Original data
	Biśnik Cave, MIS 8 or MIS 7	Poland	1	–	24.26	Original data
	Western Siberia, Middle Pleistocene	Russia	2	21.0–22.0	21.5	Alekseeva, 1980; Vasiliev, 2005, 2011
	Mosbach, MIS 14–13	Germany	2	23.5–26.0	24.75	Kahlke, 1960
	Süssenborn, MIS 16	Germany	3	26.6–28.1	27.17	Kahlke, 1956, 1969
	Stránská Skála, MIS 17–16	Czech Republic	2	25.0–28.0	26.5	Kahlke, 1971b, 1995a
	Żabia Cave, MIS 58–40	Poland	1	–	22.0	Original data
Senèze, MIS 85–76	France	1	–	19.0	Heintz, 1970	
Width of P ³	Present day	Sweden	2	28.0–29.5	28.75	Original data
	Present day	Norway	2	27.1–27.8	27.45	Breda, 2001b
	Middle Ages	Poland	1	–	24.0	Sobociński and Godynicki, 1975; Sobociński, 1977, 1985; Sosnowski, 1981
	Wielkopolska, Holocene	Poland	2	28.0–29.0	28.5	Niezabitowski-Lubicz, 1929
	Krosinko, Preboreal	Poland	2	28.4–28.6	28.5	Original data
	Dudka, Preboreal	Poland	4	27.6–29.15	27.93	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	5	26.1–28.3	27.38	Breda, 2001b
	Western Siberia, Upper Pleistocene/Holocene	Russia		28.0–29.0		Alekseeva, 1980; Foronova, 2001
	Ehringsdorf, MIS 7	Germany	2	29.5–31.3	30.4	Kahlke, 1975
	Vergranne, MIS 11	France	2	26.0–26.5	26.25	Geraads, 1983
	Biśnik Cave, MIS 8/7 or MIS 6	Poland	1	–	26.32	Original data

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Width of P ³	Biśnik Cave, MIS 8 or MIS 7	Poland	1	–	25.84	Original data
	Ehringsdorf, MIS 7	Poland	2	29.5–31.3	30.4	Original data
	Western Siberia, Middle Pleistocene	Russia	2	28.0–29.0	28.5	Alekseeva, 1980; Vasiliev, 2005, 2011
	Mosbach, MIS 14–13	Germany	2	30.1–30.6	30.35	Kahlke, 1960
	Süssenborn, MIS 16	Germany	4	31.0–35.1	33.4	Kahlke, 1956, 1969
	Stránská Skála, MIS 17–16	Czech Republic	2	32.5–34.5	33.5	Kahlke, 1971b, 1995a
	Żabia Cave, MIS 58–40	Poland	1	–	25.9	Original data
	Sweden Present day	Sweden	2	20.9–23.1	22.0	Original data
	Length of P ⁴	Present day	Norway	2	22.6–23.0	22.8
Middle Ages		Poland	1	–	20.0	Sobociński and Godynicki, 1975; Sobociński, 1977, 1985; Sosnowski, 1981
Wielkopolska, Holocene		Poland	2	20.0	20.0	Niezabitowski-Lubicz, 1929
Borowa near Chodzież, Subatlanticum		Poland	1	–	21.9	Original data
Jasna Strzegowska, Cave Holocene		Poland	1	–	25.4	Original data
Mrocza Cave, Holocene		Poland	1	–	21.8	Original data
Krosinko, Preboreal		Poland	2	23.3–23.8	23.55	Original data
Dudka, Preboreal		Poland	3	23.03–23.83	23.29	Original data
Various localities, Upper Pleistocene–Holocene		Italy	4	22.4–24.0	23.15	Breda, 2001b
Western Siberia, Upper Pleistocene/Holocene		Russia		19.0–22.0		Alekseeva, 1980; Foronova, 2001
Western Siberia, Upper Pleistocene		Russia	1	–	24.0	Vasiliev, 2005
Prědmostí, MIS 2–3		Czech Republic	1	–	23.4	Original data
Šipka?, MIS3		Czech Republic	1	–	21.43	Original data
Šipka II, MIS3		Czech Republic	1	–	21.9	Original data
Biśnik Cave, MIS 6 or MIS 5e		Poland	1	–	24.06	Original data
Ehringsdorf, MIS 7		Germany	3	23.1–25.7	24.46	Kahlke, 1975
Vergranne, MIS 11		France	2	22.0–24.0	23.0	Geraads, 1983
Western Siberia, Middle Pleistocene		Russia		19.0–24.0		Alekseeva, 1980; Foronova, 2001
Mosbach, MIS 14–13		Germany	4	23.0–24.8	24.12	Kahlke, 1960
Süssenborn, MIS 16		Germany	2	29.7–30.1	29.9	Kahlke, 1956, 1969
Stránská Skála, MIS 17–16		Czech Republic	2	27.5–30.0	28.75	Kahlke, 1971b, 1995a
Żabia Cave, MIS 58–40		Poland	1	–	22.3	Original data
Senèze, MIS 85–76		France	1	–	17.5	Heintz, 1970

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Width of P ⁴	Present day	Sweden	2	27.5–28.0	27.75	Original data
	Present day	Norway	2	29.9–30.0	29.95	Breda, 2001b
	Poland, Middle Ages	Poland	1	–	27.0	Sobociński and Godynicki, 1975; Sobociński, 1977, 1985; Sosnowski, 1981
	Wielkopolska, Holocene	Poland	2	32.0	32.0	Niezabitowski-Lubicz, 1929
	Borowa near Chodzież, Subatlanticum	Poland	1	–	28.36	Original data
	Jasna Strzegowska Cave, Holocene	Poland	1	–	28.08	Original data
	Mrocza Cave, Holocene	Poland	1	–	21.8	Original data
	Krosinko, Preboreal	Poland	2	23.3–23.8	23.55	Original data
	Dudka, Preboreal	Poland	3	27.86–29.54	28.67	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	4	29.4–31.0	29.97	Breda, 2001b
	Western Siberia, Upper Pleistocene/Holocene	Russia		30.0–31.0		Alekseeva, 1980; Foronova, 2001
	Western Siberia, Upper Pleistocene	Russia	1	–	33.0	Vasiliev, 2005
	Prědmosti, MIS 2–3	Czech Republic	1	–	28.54	Original data
	Šipka?, MIS3	Czech Republic	1	–	25.79	Original data
	Šipka II, MIS3	Czech Republic	1	–	27.67	Original data
	Biśnik Cave, MIS 6 or MIS 5e	Poland	1	–	31.15	Original data
	Ehringsdorf, MIS 7	Germany	3	27.4–31.3	29.36	Kahlke, 1975
	Vergranne, MIS 11	France	2	28.0	28.0	Geraads, 1983
	Western Siberia, Middle Pleistocene	Russia		29.0–30.0		Alekseeva, 1980; Foronova, 2001
	Mosbach, MIS 14–13	Germany	5	28.6–31.1	29.82	Kahlke, 1960
Süssenborn, MIS 16	Germany	2	29.9–38.2	34.05	Kahlke, 1956, 1969	
Stránská Skála, MIS 17–16	Czech Republic	2	34.0–36.0	35.0	Kahlke, 1971b, 1995a	
Żabia Cave, MIS 58–40	Poland	1	–	27.6	Original data	

Length and width of M³ of elks of the genus *Cervalces* Scott, 1885 and *Alces* Gray, 1821 from Eurasian localities.

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Length of M ³	Present day	Sweden	2	27.0–28.0	27.5	Original data
	Present day	Norway	2	27.4–29.4	28.4	Breda, 2001b
	Middle Ages	Poland	3	29.0–31.0	29.6	Sobociński and Godynicki, 1975; Sobociński, 1977, 1985
	Wielkopolska, Holocene	Poland	2	29.0–31.0	30.0	Niezabitowski-Lubicz, 1929
	Borowa near Chodzież, Subatlanticum	Poland	2	29.3–29.63	29.46	Original data
	Jasna Strzegowska, Cave Holocene	Poland	1	–	32.69	Original data
	Krosinko, Preboreal	Poland	2	30.3–30.6	30.45	Original data
	Dudka, Preboreal	Poland	4	30.14–31.11	30.85	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	4	29.6–31.3	30.27	Breda, 2001b
	Prědmosti, MIS 2–3	Czech Republic	1	–	30.14	Original data
	Biśnik Cave, MIS 6 or MIS 5e	Poland	1	–	34.02	Original data
	Ehringsdorf, MIS 7	Germany	1	–	26.8	Kahlke, 1975
	Vergranne, MIS 11	France	2	30.5–33.0	31.75	Geraads, 1983
	Mosbach, MIS 14–13	Germany	4	33.0–36.3	34.42	Kahlke, 1960
	Süssenborn, MIS 16	Germany	8	32.4–39.6	35.65	Kahlke, 1956, 1969
	Stránská Skála, MIS 17–16	Czech Republic	2	33.8–34.0	33.9	Kahlke, 1971b, 1995a
	Saint Prest, MIS 30–25	France	1	–	30.0	Heintz and Poplin, 1981; Guérin <i>et al.</i> , 2003
Żabia Cave, MIS 58–40	Poland	1	29.1–29.56	29.34	Original data	
Senèze, MIS 85–76	France	1	–	26.5	Heintz, 1970	
Width of anterior lobe of M ³	Present day	Sweden	2	28.7–29.6	29.15	Original data
	Present day	Norway	2	26.0–26.6	26.3	Breda, 2001b
	Middle Ages	Poland	3	29.0–30.0	29.6	Sobociński and Godynicki, 1975; Sobociński, 1977, 1985; Sosnowski, 1981
	Wielkopolska, Holocene	Poland	2	31.0–32.0	31.5	Niezabitowski-Lubicz, 1929
	Borowa near Chodzież, Subatlanticum	Poland	2	28.71–29.41	29.06	Original data
	Krosinko, Preboreal	Poland	2	30.3–32.1	30.45	Original data
	Dudka, Preboreal	Poland	4	31.11–32.54	32.02	Original data
	Various localities, Upper Pleistocene–Holocene	Italy	4	29.3–30.9	30.17	Breda, 2001b
	Oblazowa Cave, MIS 3	Poland	1	–	34.22	Original data
	Biśnik Cave, MIS 6 or MIS 5e	Poland	1	–	34.0	Original data
	Ehringsdorf, MIS 7	Germany	1	–	28.8	Kahlke, 1975

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
	Vergranne, MIS 11	France	2	29.5–31.5	30.5	Geraads, 1983
	Mosbach, MIS 14–13	Germany	5	31.8–35.3	32.8	Kahlke, 1960
	Süssenborn, MIS 16	Germany	4	32.1–37.5	34.9	Kahlke, 1956, 1969
	Stránská Skála, MIS 17–16	Czech Republic	2	36.5–38.0	37.25	Kahlke, 1971b, 1995a
	Saint Prest, MIS 30–25	France	1	–	29.3	Heintz and Poplin, 1981; Guérin <i>et al.</i> , 2003
	Żabia Cave, MIS 58–40	Poland	2	28.80–29.15	28.97	Original data
Width of posterior lobe of M³	Present day	Sweden	2	25.1–26.1	25.6	Original data
	Borowa near Chodzież, Subatlanticum	Poland	2	25.43–25.44	25.43	Original data
	Krosinko, Preboreal	Poland	2	27.7–28.4	28.05	Original data
	Dudka, Preboreal	Poland	4	27.77–27.9	28.05	Original data
	Prědmosti, MIS 2–3	Czech Republic	1	–	28.03	Original data
	Oblazowa Cave, MIS 3	Poland	1	–	27.17	Original data
	Biśnik Cave, MIS 6 or MIS 5e	Poland	1	–	30.88	Original data
	Ehringsdorf, MIS 7	Germany	1	–	29.6	Kahlke, 1975
	Mosbach, MIS 14–13	Germany	4	28.2–31.4	29.52	Kahlke, 1960
	Süssenborn, MIS 16	Germany	7	30.4–33.8	32.44	Kahlke, 1956, 1969
	Saint Prest, MIS 30–25	France	1	–	28.0	Heintz and Poplin, 1981; Guérin <i>et al.</i> , 2003
	Żabia Cave, MIS 58–40	Poland	2	26.65–27.5	27.07	Original data

Appendix Table 6

Measurements of metacarpal bones of elks of the genera *Cervalces* Scott, 1885 and *Alces* Gray, 1821 from Eurasian localities.

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Greatest length GL	Present day	Europe	3	318.0–354.0	332.0	Original data
	Present day	Norway	1	–	314.0	Breda and Gallini, 2001
	Present day	North America	1	–	355.0	Van der Made <i>et al.</i> , 2014
	South of Western Siberia, Present day	Russia	9	321.0–350.5	337.13	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Wielkopolska, Holocene	Poland	1	–	330.0	Niezabitowski-Lubicz, 1929
	Upper Pleistocene–Holocene	Italy	2	300.0–323.0	311.5	Breda and Gallini, 2001
	Krasnyi Yar Siberia, MIS 2	Russia	1	–	315.5	Vasiliev, 2005
	Taradanovo, MIS 3	Russia	3	310.0–338.0	325.57	Vasiliev, 2005
	Biśnik Cave, MIS 4/3	Poland	1	–	343.7	Original data
	Kuznetsk Basin, Upper Pleistocene	Russia	–	322.5–325.5	–	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Eich, Upper Pleistocene (?MIS 5e)	Germany	2	356–390	373.0	Pfeiffer, 1999b
	Krasnyi Yar, Siberia MIS 5e	Russia	2	329.0–336.0	332.5	Vasiliev, 2005
	Tomsk Region, Middle Pleistocene	Russia	13	310.0–334.0	329.2	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Kuznetsk Basin, Middle Pleistocene	Russia	1	–	325.4	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Ördöglyuk Cave, MIS 11 or MIS 9	Hungary	1	–	315.0	Vöros, 1985
	Vergranne, MIS 11	France	1	–	361.0	Geraads, 1983
	Middle Pleistocene	Moldova	1	–	348.0	David, 1980
	Mosbach, MIS 14–13	Germany	2	382.0–398.0	390.0	Kahlke, 1960; Pfeiffer, 1999a, b
	Tiraspol, MIS 16	Moldova	1	–	466.0	Kahlke, 1971a
Untermassfeld, MIS 31	Germany	1	–	372.0	Kahlke, 1997, 2001	
Lagernaya, MIS 76–75	Tadjikistan	1	–	363.5	Vislobokova, 1986, 1988	
Senèze, MIS 85–76	France	2	338.0–339.0	338.5	Heintz, 1970	
Depth of the proximal end Dp	Present day	Norway	1	–	39.6	Breda and Gallini, 2001
	Middle Ages	Poland	–	38.0–40.5	39.2	Sobociński and Godynicki, 1975; Sobociński, 1977, 1985; Sosnowski, 1981
	South of Western Siberia, Present day	Russia	9	38.1–44.0	41.18	Vasiliev, 2005
	Wielkopolska, Holocene	Poland	1	–	42.0	Niezabitowski-Lubicz, 1929
	Dudka, Atlanticum/Subboreal	Poland	1	–	38.59	Original data
	Dudka, Middle Atlanticum	Poland	1	–	36.28	Original data
	Dudka, Boreal	Poland	1	–	36.07	Original data
	Novosibirsk Region, Late Holocene	Russia	18	38.0–47.0	41.96	Vasiliev, 2005
	Upper Pleistocene–Holocene	Italy	3	35.7–37.1	36.53	Breda and Gallini, 2001

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Depth of the proximal end Dp	Krasnyi Yar Siberia, MIS 2	Russia	1	–	41.3	Vasiliev, 2005
	Taradanovo, MIS 3	Russia	4	41.0–45.0	43.55	Vasiliev, 2005
	Biśnik Cave, MIS 4/3	Poland	1	–	51.57	Original data
	Kuznetsk Basin, Upper Pleistocene	Russia	2	41.1–45.0	43.05	Vasiliev, 2005
	Krasnyi Yar Siberia, MIS 5e	Russia	5	37.7–44.5	40.48	Vasiliev, 2005
	Ördöglyuk Cave, MIS 11 or MIS 9	Hungary	1	–	39.0	Vörös, 1984
	Tomsk Region, Middle Pleistocene	Russia	13	39.0–46.0		Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Kuznetsk Basin, Middle Pleistocene	Russia	1	–	41.1	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Middle Pleistocene	Moldova	1	–	53.0	David, 1980
	Süssenborn, MIS 16	Germany	2	52.5–56.3	54.4	Kahlke, 1956, 1969
	Tiraspol, MIS 16	Moldova	1	–	74.2	Kahlke, 1971a
	Stránská Skála, MIS 17–16	Czech Republic	2	55.7–58.4	57.05	Kahlke, 1971b, 1995a
	Würzburg–Schalksberg, MIS 20	Germany	5	48.0–54.0	50.8	Mäuser, 1987, 1990
	Untermassfeld, MIS 31	Germany	1	–	48.0	Kahlke, 1997, 2001
	Senèze, MIS 85–76	France	2	39.0–41.0	40.0	Heintz, 1970
Breadth of the proximal end Bp	Present day	Europe	–	51.0–64.0	–	Original data
	Present day	Norway	1	–	57.2	Breda and Gallini, 2001
	Middle Ages	Poland		55.5–60.0	58.1	Sobociński and Godynicki, 1975; Sobociński, 1977, 1985; Sosnowski, 1981
	Wielkopolska, Holocene	Poland	1	–	65.0	Niezabitowski–Lubicz, 1929
	Dudka, Middle Atlanticum	Poland	1	–	52.65	Original data
	Various localities, Late Holocene	Lithuania, Latvia, Estonia	24	53.0–64.0	59.67	Paaver, 1965
	Various localities, Subboreal	Lithuania, Latvia, Estonia	17	51.0–63.0	57.0	Paaver, 1965
	Various localities, Atlanticum	Lithuania, Latvia, Estonia	5	56.0–59.0	57.9	Paaver, 1965
	South of Western Siberia, Present day	Russia	9	54.6–63.0	59.39	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Dudka, Middle Atlanticum	Russia	1	–	52.65	Original data
	Dudka, Boreal	Poland	1	–	52.16	Original data
	Novosibirsk Region, Late Holocene	Russia	15	57.0–69.0	62.22	Vasiliev, 2005
	Upper Pleistocene–Holocene	Italy	3	52.2–53.9	53.03	Breda and Gallini, 2001
	Krasnyi Yar Siberia, MIS 2	Russia	1	–	56.7	Vasiliev, 2005
	Taradanovo, MIS 3	Russia	3	55.6–62.2	59.47	Vasiliev, 2005
	Biśnik Cave, MIS 4/3	Poland	1	–	75.15	Original data
Kuznetsk Basin, Upper Pleistocene	Russia	1	–	59.0	Vasiliev, 2005	

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Breadth of the proximal end Bp	Eich, Upper Pleistocene (?MIS 5e)	Germany	2	75.3–75.8	75.55	Pfeiffer, 1999
	Krasnyi Yar, Siberia MIS 5e	Russia	5	56.0–60.7	58.22	Vasiliev, 2005
	Tomsk, Region Middle Pleistocene	Russia	13	52.0–66.0	60.9	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Kuznetsk Basin, Middle Pleistocene	Russia	1	–	60.6	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Ördöglyuk Cave, MIS 11 or MIS 9	Hungary	1	–	57.0	Vörös, 1984
	Middle Pleistocene	Moldova	1	–	74.0	David, 1980
	Mosbach, MIS 14–13	Germany	9	71.2–74.9	–	Kahlke, 1960; Pfeiffer, 1999a, b
	Süssenborn, MIS 16	Germany	2	78.1–80.2	79.15	Kahlke, 1956, 1969
	Stránská Skála, MIS 17–16	Czech Republic	2	73.2–75.8	74.5	Kahlke, 1971b, 1995a
	Würzburg–Schalksberg, MIS 20	Germany	5	64.0–73.0	67.8	Mäuser, 1987, 1990
	Untermassfeld, MIS 31	Germany	1	–	59.9	Kahlke, 1997, 2001
	Lagernaya, MIS 76–75	Tadjikistan	1	–	47.0	Vislobokova, 1988
	Senèze, MIS 85–76	France	2	55.0–55.5	55.25	Heintz, 1970
Smallest breadth of the diaphysis SD	Present day	Europe	–	33.3–35.0	–	Original data
	Present day	Norway	1	–	25.6	Breda and Gallini, 2001
	Middle Ages	Poland	1	–	30.0	Sobociński and Godynicki 1975; Sobociński, 1977, 1985; Sosnowski, 1981
	Wielkopolska, Holocene	Poland	1	–	37.5	Niezabitowski-Lubicz, 1929
	Dudka, Atlanticum/Subboreal	Poland	1	–	35.58	Original data
	South of Western Siberia, Present day	Russia	8	33.4–38.2	35.68	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Novosibirsk Region, Late Holocene	Russia	1	–	40.0	Vasiliev, 2005
	Upper Pleistocene–Holocene	Italy		24.7–29.7	26.66	Breda and Gallini, 2001
	Krasnyi Yar, Siberia MIS 2	Russia	2	33.7–37.5	35.6	Vasiliev, 2005
	Taradanovo, MIS 3	Russia	6	34.8–40.8	38.02	Vasiliev, 2005
	Biśnik Cave, MIS 4/3	Poland	1	49.0	–	Original data
	Eich, Upper Pleistocene (?MIS 5e)	Germany	2	45.4–49.5	47.45	Pfeiffer, 1999a, b
	Krasnyi Yar, Siberia MIS 5e	Russia	3	33.5–36.7	35.57	Vasiliev, 2005
	Tomsk, Region Middle Pleistocene	Russia	13	39.0–46.0	42.8	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Vergranne, MIS 11	France	1	–	43.0	Geraads, 1983
	Mosbach, MIS 14–13	Germany	9	41.7–50.0	–	Kahlke, 1960; Pfeiffer, 1999
	Tiraspol, MIS 16	Moldova	1	–	45.7	Kahlke, 1971a
	Stránská Skála, MIS 17–16	Czech Republic	1	–	48.0	Kahlke, 1971b, 1995a
Lagernaya, MIS 76–75	Tadjikistan	1	–	34.2	Vislobokova, 1988	

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Depth of the distal end Dd	Present day	Europe	–	43.0–45.0	–	Original data
	Present day	Norway	1	–	41.6	Breda and Gallini, 2001
	Wielkopolska, Holocene	Poland	1	–	40.0	Niezabitowski-Lubicz, 1929
	Dudka, Atlanticum/Subboreal	Poland	1	–	30.01	Original data
	South of Western Siberia, Present day	Russia	9	39.0–43.5	40.99	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Novosibirsk Region, Late Holocene	Russia	19	37.0–44.8	41.39	Vasiliev, 2005
	Upper Pleistocene–Holocene	Italy	2	38.3–40.9	39.6	Breda and Gallini, 2001
	Krasnyi Yar Siberia, MIS 2	Russia	2	37.0–37.5	37.25	Vasiliev, 2005
	Taradanovo, MIS 3	Russia	5	38.0–42.5	40.72	Vasiliev, 2005
	Biśnik Cave, MIS 4/3	Poland	1	–	45.3	Original data
	Kuznetsk Basin, Upper Pleistocene	Russia	2	40.2–40.5	40.35	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Krasnyi Yar Siberia, MIS 5e	Russia	3	36.5–41.2	39.14	Vasiliev, 2005
	Tomsk Region, Middle Pleistocene	Russia	14	37.0–47.0	41.1	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Kuznetsk Basin, Middle Pleistocene	Russia	1	–	39.2	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Ördöglyuk Cave, MIS 11 or MIS 9	Hungary	1	–	37.0	Vörös, 1984
	Vergranne, MIS 11	France	1	–	44.0	Geraads, 1983
	Süssenborn, MIS 16	Germany	2	52.0–60.2	56.1	Kahlke, 1956, 1969
	Tiraspol, MIS 16	Moldova	1	–	61.2	Kahlke, 1971a
	Voigstedt, MIS 17	Germany	1	–	55.7	Kahlke, 1958, 1965
	Würzburg–Schalksberg, MIS 20	Germany	1	44.0–51.0	47.2	Mäuser, 1987, 1990
Untermassfeld, MIS 31	Germany	1	–	42.0	Kahlke, 1997, 2001	
Lagernaya, MIS 76–75	Tadjikistan	1	–	41.5	Vislobokova, 1988	
Senèze, MIS 85–76	France	2	37.0–38.0	37.5	Heintz, 1970	
	Present day	Europe	–	56.0–72.0	63.54	Original data
	Present day	Norway	1	–	64.5	Breda and Gallini, 2001
	Middle Ages	Poland	1	–	66.0	Sobociński and Godynicki, 1975; Sobociński, 1977, 1985; Sosnowski, 1981
	Wielkopolska, Holocene	Poland	1	–	68.0	Niezabitowski-Lubicz, 1929
	Various localities, Late Holocene	Lithuania, Latvia, Estonia	12	62.0–68.0	65.17	Paaver, 1965
	Various localities, Late Holocene Subboreal	Lithuania, Latvia, Estonia	52	56.0–71.0	62.38	Paaver, 1965

Measurement	Locality	Country	N	Min. – max.	Mean	Source data
Breadth of the distal end Bd	Various localities, Late Holocene Athlanticum	Lithuania, Latvia, Estonia	52	57.0–72.0	63.54	Paaver, 1965
	South of Western Siberia, Present day	Russia	9	61.5–71.0	66.03	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Novosibirsk Region, Late Holocene	Russia	25	59.0–74.5	66.13	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Upper Pleistocene–Holocene	Italy	2	55.5–57.6	56.55	Breda and Gallini, 2001
	Krasnyi Yar Siberia, MIS 2	Russia	2	60.5–64.2	62.35	Vasiliev, 2005
	Taradanovo, MIS 3	Russia	8	61.7–73.5	67.49	Vasiliev, 2005
	Biśnik Cave, MIS 4/3	Poland	1	–	78.2	Original data
	Kuznetsk Basin, Upper Pleistocene	Russia	2	62.9–66.2	64.55	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Eich, Upper Pleistocene (?MIS 5e)	Germany	2	77.0–84.0	80.5	Pfeiffer, 1999
	Krasnyi Yar Siberia, MIS 5e	Russia	3	61.7–66.8	64.06	Vasiliev, 2005
	Tomsk Region, Middle Pleistocene	Russia	14	60.0–73.0	68.6	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Kuznetsk Basin, Middle Pleistocene	Russia	1	–	65.5	Alekseeva, 1980; Foronova, 2001; Vasiliev, 2005
	Ördöglyuk Cave, MIS 11 or MIS 9	Hungary	1	–	67.0	Vörös, 1984
	Vergranne, MIS 11	France	1	–	67.0	Geraads, 1983
	Bilshausen, MIS 13 or MIS 11	Germany	1	–	84.1	Pfeiffer, 1999
	Middle Pleistocene	Moldova	1	–	78.0	David, 1980
	Mosbach, MIS 14–13	Germany	2	73.5–84	78.75	Kahlke, 1960; Pfeiffer, 1999a, b
	Süssenborn, MIS 16	Germany	1	–	83.5	Kahlke, 1956, 1969
	Tiraspol, MIS 16	Moldova	1	–	92.7	Kahlke, 1971a
	Voigstedt, MIS 17	Germany	1	–	87.8	Kahlke, 1958, 1965
Würzburg–Schalksberg, MIS 20	Germany	5	69.0–77.0	72.3	Mäuser, 1987, 1990	
Untermassfeld, MIS 31	Germany	1	–	62.1	Kahlke, 1997, 2001	
Lagernaya, MIS 76–75	Tadjikistan	1	–	63.6	Vislobokova, 1988	
Senèze, MIS 85–76	France	2	56.0–58.0	57.0	Heintz, 1970	