

Morphological diversity in the population of sable *Martes zibellina* L. from Russian Far East

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The Far East is the region in Russia where a few remnant sable populations were preserved during the strong depression of the species' abundance in the beginning of the 20th century (Heptner *et al.* 1967). Translocations of sables from other locations in the species' geographic range (Pavlov *et al.* 1973) resulted in a mixed population of sables with a high morphologic diversity.

We studied the morphological variability of sables from 12 localities in the Russian Far East using 22 non-metric traits in 751 skulls (Fig. 1).

We used the "Mean Measure of Divergence" (MMD) method to evaluate phenotypic divergence between the samples (Smith 1972, Sjøvold 1977, Hartman 1980). We compared all samples with each other with MMD calculations. Clustering of the MMD matrix was performed by the "Ward's method."

The pair-wise comparison analyses of the sable samples based on MMD calculation showed varied phenotypic distances from 0.0004 to 0.162. The resulting cluster tree (Fig. 2) showed 2 main clusters. Three geographic samples – Kamchatka (2 chronographic samples from the 19th and 20th centuries), Tuguro-Chumikan district, and P. Osipenko district – combined into 1 cluster. The Tuguro-Chumikan and P. Osipenko districts are geographically close to each other, so these could represent one sable population. The similarity with sables from Kamchatka can be explained by the autochthonous origin of the populations from the saved reservations.

The insular population of sable from Sahalin Island showed low divergence with continental samples. This can be the result of migrations of animals in winter, when ice bridges can connect the island to the continent.

In general, geographical samples of the sable from Far East showed relatively low phenotypic divergence among each other. In the future we plan to compare samples from the Far East with sable populations from other parts of the species' range for evaluating morphological features of the Far East population.

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Literature Cited

Hartman, S.E. 1980. Geographic variation analysis of *Dipodomys ordii* using nonmetric cranial traits. J. Mammalogy 61(3): 436-448.

Heptner, V.G., and N.P. Naumov. 1967. Mammals of the Soviet Union. Moscow, Vysshaya Shkola. (In Russian).

Pavlov M.P., I.B. Korsakova, V.V. Timofeev, and V.G. Safonov. 1973. Acclimatization of game mammals in the Soviet Union 1. Volgo-Vyatskoe Publishing House. Kirov, Soviet Union (In Russian).

Smith C.A.B. 1972. Review of T.S. Constandse-Westermann: Coefficients of Biological Distance. *Ann. Hum. Genet.* 36: 241-245.

Sjovold T. 1977. Non-metrical divergence between skeletal populations. *Ossa* 4(1): 1-133.

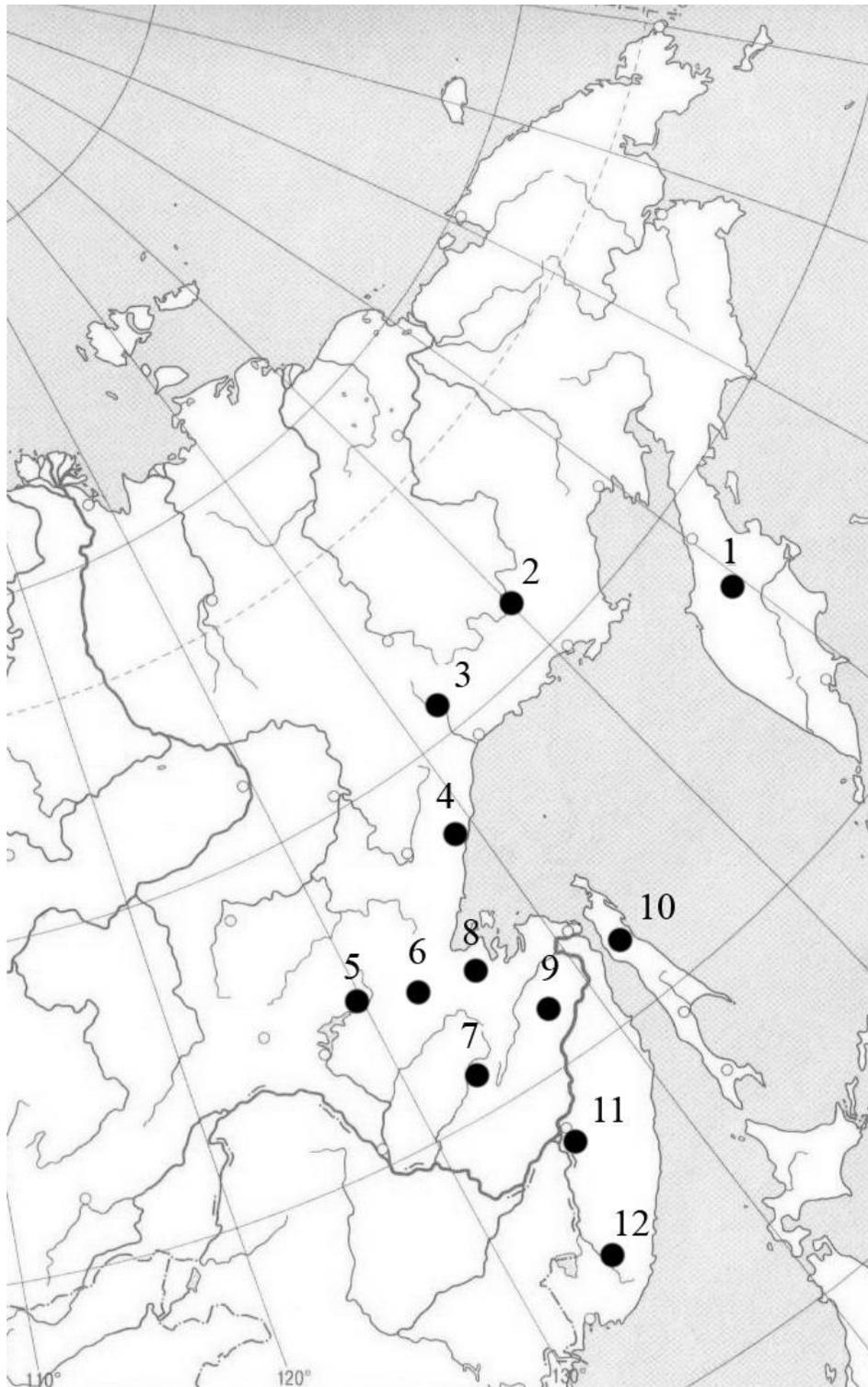


Figure 1. Localities of sable samples. 1 – Kamchatka Peninsula (N=147, 85 males); 2 – Magadan region (N=50, 26 males); 3 – Ohotsk district (N=64, 33 males); 4 – Ayan-May district (N=60, 29 males); 5 – watershed of Zeya River (N=83, 43 males); 6 – Tuguro-Chumikan district (N=31, 16 males); 7 – watershed of Bureya River (N=67, 33 males); 8 – P. Osipenko district (N=30, 15 males); 9 – Ulch district (N=58, 35 males); 10 – Sakhalin Island (N=58, 25 males); 11 – Lazo district (N=58, 29 males); 12 – Chuguevsk district (N=45, 27 males).

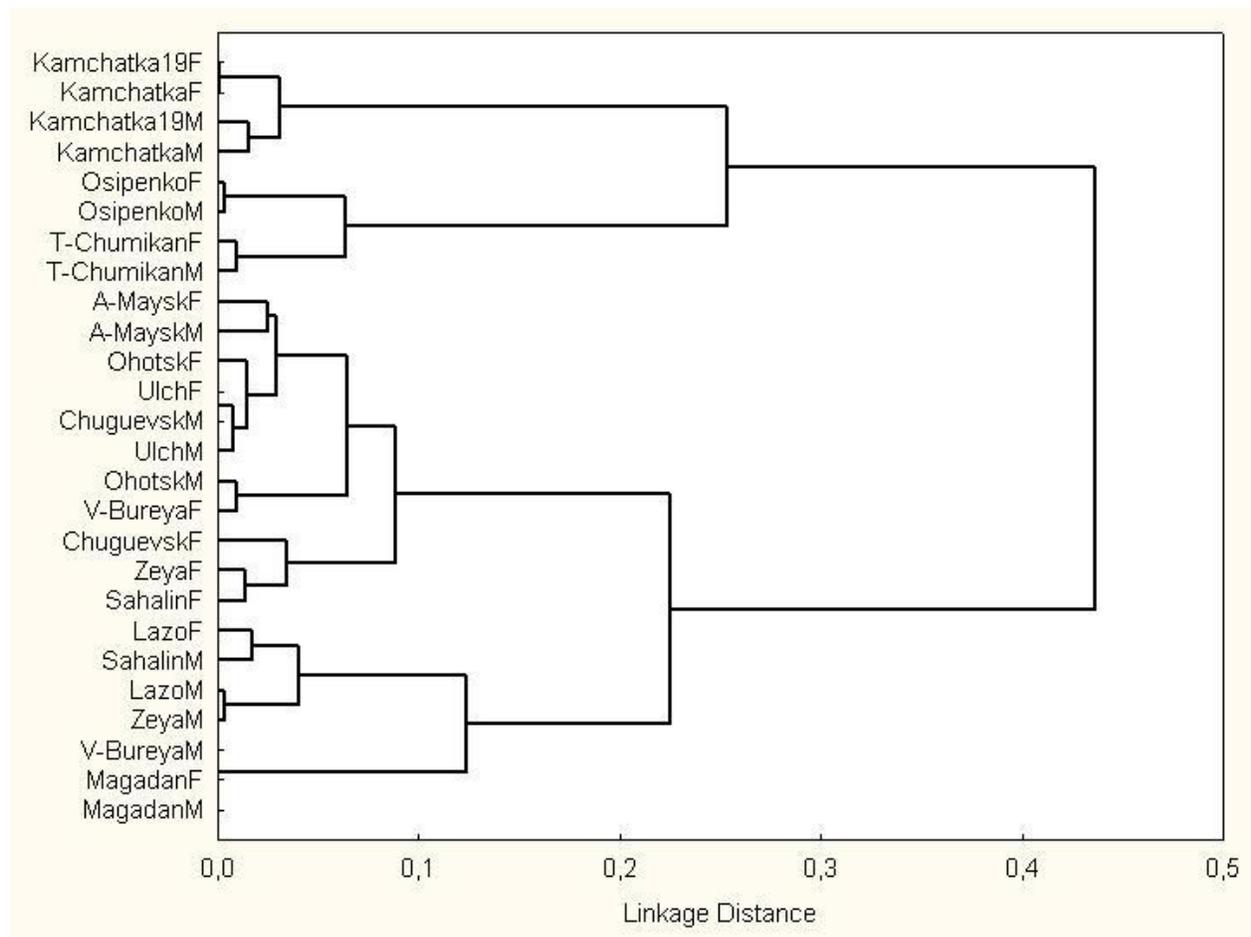


Figure 2. Ward's method dendrogram of phenotypic distances based on the mean measure of divergence (MMD) derived from 22 non-metric skull characters of sable samples (N=751).

HELP WANTED & CLASSIFIEDS

Need Help!

Dear colleagues from the USA and Canada!

For our morphologic research of genus *Martes* we need the serial craniological samples of *Martes (Pekania) pennanti*, *Martes americana*, and *Martes caurina*. If you have any information about large craniological collections of North American martens please let us know.

If you have access to these collections you will be our best friend ever, and a dear co-author of course.

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Wolverine Artwork by Jeff Cain

Hello! My name is Jeff Cain and I am a wildlife artist specializing in painting and drawing wolverines (*Gulo gulo*). I grew up in London, UK and always dreamed of seeing wolverine living in the wild. Over a 2-year period I worked as a volunteer on a wolverine field Study in the Talkeetna mountain Range of South Central Alaska where I had the opportunity to observe many wolverine behaviors through direct observations and by snow tracking. In 2005 I attended the first International Wolverine Symposium held in Jokkmokk, northern Sweden. I have visited the boreal forests of eastern Finland where I encountered a family group of wolverines and observed at close range some fascinating social and vocal interactions. I have published wolverine articles in various journals, such as *Small Carnivore Conservation*. I have sold my wolverine artwork worldwide and recently opened my new wolverine art website (<http://www.wolverineartwork.com>), where I will be continually updating each new piece of wolverine artwork. I can paint all types of wolverine behaviors, including scenes set in the Pleistocene epoch.

Please contact me with any wolverine art enquiries. Original commissions very welcome and high quality Giclee prints available. If really pressed I can succumb to pressure and paint other mustelid species too!

I am really pleased to be a member of the Martes Working Group. Gulo gulo regards,

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