

Brief Communication: Cranial Nonmetric Trait Database on the Internet

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ABSTRACT This brief note announces the publication of a nonmetric cranial trait database as a freely available resource on the Internet at: <http://library.queensu.ca/webdoc/ssdc/cntd>. The files were constructed in the program Excel, and are available also in comma-delimited format. These one-observer data on 38 traits were recorded in

1963–2003 in skeletal collections curated at many museums. The 8,016 crania represent individuals from a broad geographic and temporal range of recent human populations, with regions best represented being the Arctic and northwestern North America. *Am J Phys Anthropol* 152:551–553, 2013. © 2013 Wiley Periodicals, Inc.

Following the example of the late W.W. Howells of Harvard University who published his life-time's worldwide collection of cranial measurements on the internet (Howells, 1969), this note announces publication of my files of cranial nonmetric trait data as a freely available resource at: <http://library.queensu.ca/webdoc/ssdc/cntd>. The tables were constructed in the program Excel. They are available as well in comma-delimited format (comma-separated values, csv) from which the user can import them into any program of choice. The tables can be used to study the morphological features themselves, i.e. patterns of variation according to age, sex, side, and population, as well as intertrait correlation and the effects of artificial cranial deformation. I have tried to provide sufficient provenience to facilitate exploration of various ethnogenetic problems. Investigators can pull the tables apart and re-assemble the component samples in any way appropriate to their particular purpose. Additionally, researchers are encouraged to explore methods of biodistance analysis alternative to the Smith's Mean Measure of Divergence (MMD) used in my own ethnogenetic studies.

The regions best represented in the tables are the Arctic and northwestern North America. Since 1991 many of these museum collections have been repatriated under the terms of NAGPRA (Native American Graves Protection and Repatriation Act) and are no longer available for original research. Therefore, I hope that this website may be particularly useful in supplementing existing osteobiological records for the Native peoples of these regions.

TRAITS

The 38 traits are listed in Table 1. Descriptions and criteria for scoring these as well as an analysis of intra-observer replicability are given in the User Guide on the website. Certain well-known traits have been excluded from the files. These are the *tori* (maxillary, mandibular, palatal, and auditory) likely to be strongly influenced by behavior or environmental factors. Others traits generally familiar to researchers I have found too ambiguous in expression, too difficult to score, or simply too invariant to be useful in ethnogenetic studies.

The general rule for scoring traits was as follows: present = 1, absent = 0, indeterminate = 9. The exception to this rule is where a trait is scored 2 or 3 indicating degree of expression or sub-type of the feature as defined in the User Guide.

SAMPLES

The database is based on 27 files organized by geographic region. These are listed in Table 2 along with the overall sample size which includes juveniles as well as adults. The User Guide provides details concerning sample composition and provenience, including the curating museum where they were studied and the catalog number of each individual.

CITATION

Investigators are welcome to use these survey data in their own research and publications.

In their publications they must acknowledge the source of the data, and indicate that the results and conclusions they report are their own. The survey data should be cited as follows:

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TABLE 1. Traits

Category	Name	Abbreviation
Sutural variants	Metopism	METO
	Os inca	INCA
	Os apicis (apical bone)	APIC
	Occipito-mastoid bone	OMB
	Asterionic bone	AST
	Parietal notch bone	PNB
	Squamo-parietal synostosis	SPS
	Orbital suture variant	ORB
	Infraorbital suture variant	CON
	Os japonicum	OSJ
Traits related to variations in neurovascular structures	Postcondylar canal	POS
	Squamous style	SQS
	Marginal foramen of the tympanic plate	MAR
	Lateral pterygoid plate foramen	LPF
	Supraorbital foramen	SOF
	Frontal grooves	FRG
	Accessory optic canal	OPT
	Mental foramen double	MEN
	Retromolar foramen	BUC
	Precondylar tubercles	PCTB
Variations at the craniovertebral border	Odonto-occipital articulation	ODON
	Transverse fissure of basi-occiput	TRFS
	Pharyngeal fossa	PHAR
	Hypoglossal canal bridged or double	HYP
	Paracondylar process	PCP
	Atlas bridging: condylar process to posterior arch	ATA
	Atlas bridging: condylar process to transverse process	ATB
	Tympanic dehiscence	TYM
	Foramen spinosum and/or ovale wall deficient	FSP
	Intermediate condylar canal	ICC
Hypostotic traits	Pterygospinous bridge (foramen of Civinini)	CIV
	Pterygobasal bridge	PTB
	Clinoid bridging	CLN
	Trochlear spur	TRS
	Mylohyoid bridge	MHB
Hyperostotic traits	Upper third molar suppressed	M3U
	Lower third molar suppressed	M3L
	Three-rooted first mandibular molar	TRM

TABLE 2. Samples

Name ^a	Region/Culture	N
Arctic 1	Southwestern Alaska: Peninsula to Golovin Bay	670
Arctic 2	St. Lawrence Island and Chukotka	423
Arctic 3	North Alaska: Seward Peninsula to Point Barrow	461
Arctic 4	Central Arctic: Mackenzie Delta to Baffin Island	417
Arctic 5	Eastern Arctic: Labrador, Newfoundland, Greenland	397
Athapaskans	Alaska, Canada, Oregon, Southwest	212
Aleutians	East, Central, West	541
North Pacific Coast	Kodiak, Tlingit, Prince Rupert Harbour, Namu, Haida	534
Plateau	Chinook, Salish, Nez Perce, Penutian tribes	240
Plains	Arikara, Assiniboine, Cheyenne, Dakota Sioux	296
Northern Mississippi Valley	Late Woodland Period burial mound sites	546
Northeastern North America	Illinois Hopewell, Iroquois, Newfoundland Maritime Archaic	216
Southwest	Pecos Pueblo	168
South America	Chile, Patagonia, Terra del Fuego	60
Jomon	Sites in Hokkaido, North, Central and West Japan	267
Ainu	Northeast, southeast and west Hokkaido	148
Japan	Wajin Japanese from North, Central and West Japan	710
Northeast Asia	Manchuria, Mongolia, Chukchi, Okhotsk Tungus, Yukaghir	335
India	Anatomy Department skulls for student use	129
Armenia	Bronze, Iron and Antique Ages	136
Europe	Various countries	46
Hungary	Roman and Medieval Periods	68
Italy	Siena	88
Iceland	Medieval	51
Britain	19th C. British Canadians from Belleville, Ontario	280
Africa	East, West, South, Kerma Sudan, African Americans	374
South Pacific	Native peoples of Australia, Marquesas, New Zealand	203

^a Names of the original 27 tables. These were “stacked” one on top the other in alphabetical order to create a single Excel spreadsheet for the website.

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indispensable. Debra Komar, Queen's Anatomy graduate student 1994–1996, working from the original paper records, transcribed all the data up to that point to electronic files in the program PARADOX: I am grateful for her care and accuracy in completion of this huge task. My retirement goal of publishing the data on a website has been realized through endorsement by Queen's University Library, with the approval and encouragement of Sharon Murphy, Head, Academic Services. For their meticulous oversight and enthusiastic collaboration in designing and finalizing the website I am indebted to Jeff Moon, Data and Government Information Librarian; and his associate Alexandra Cooper. Filing cases containing the original paper scoring sheets and notes ultimately will be stored in Queen's University Archives where they also may be consulted by researchers.

LITERATURE CITED

- Howells WW. 1996. Howell's craniometric data on the internet. *Am J Phys Anthropol* 101:441–442.