Hrdlička's data on arctic mongolid : a preliminary synthesis

Menk, Roland

IInd ANTHROPOLOGICAL CONGRESS OF ALEŠ HRDLIČKA – UNIVERSITAS CAROLINA PRAGENSIS 1982 PAG. 23–26

HRDLIČKA'S DATA ON ARCTIC MONGOLID — A PRELIMINARY SYNTHESIS

R. MENK

Institute of Anthropology, Genève

Aleš Hrdlička has devoted the most important part of his restless scientific activities to the problem of the peopling of the New World by Man. He definitely was the most vigorous promotor of the theory of Mongolid migration from Northeast Asia through the Bering Strait, and that at a time when geological and climatological conditions of prehistoric Beringia were still uninvestigated. On this topic he not only was the most engaged scientist, but also — — and by far — — the most active field worker and collectioner: he has conducted an impressive number of exploration and excavation campaigns in the american Arctic, the results of which gave rise to one of the most outstanding osteological collections in the world, the one at Smithsonian Institution.

But his merits don't stop here: he undertook the arduous and fastidious task to measure all the cranial material he had himself collected or he had examinated in various collections throughout the world. All these data — — and this is another proof of Dr. Hrdlička's resolute determination and uncompromising thoroughness — — were published in the famous series of "Catalogs of Human Crania in the United States National Museum Collections." Unfortunately, Hrdlička has not had the opportunity to conclude his tremendous work by a major numerical elaboration of his *thesaurus* (literally!) of data; he died soon after the achievement of the last issue of the "Catalogs", the one containing the reference data of the Non-Eskimo Arctic Mongolid.

The present preliminary synthesis is based on the data published in the two catalogs "Eskimo in General" and "Non-Eskimo Arctic Mongolid" (Hrdlička, 1942 and 1944), and in a major publication on prehistoric crania of Siberia (Hrdlička, 1942). All the individual data were transcribed on punched cards and elaborated by multivariate analysis (principal components, generalized distances, cluster analysis). Out of the some six thousand individuals presented by Hrdlička, all adults of determinable sex and belonging to sufficiently well represented geographical and chronological groups were retained for further analysis: 3706 subjects distributed in 54 local groups. A threefold approach was conducted: males alone,

females alone, and both sexes combined. The results of the three analyses being widely concordant, only the ones pertaining to the latter shall be exposed here.

The layout of the centroids of the 54 groups in a principal component plane (axes 1 and 2, expressing 55 % of the total information contained in 20 craniometric variables gives a quite satisfactory illustration (figure not shown) of the general pattern of differential cranial morphology of the Northern Mongolid: it shows a clearcut separation between Eskimo and Asian Mongolid. The most distinctive traits are: 1) length of the neurocranial and facial base (n-ba; pr-ba); 2) greatest cranial width and cranial index; 3) height of the cranial vault; 4) nasal width and nasal index. Both groups show a similar extent of intravariation.

As to this (over-) summarized representation of gross morphology, the following assertions can be made concerning the "intermediate" groups: 1) the *Chukchi* are clearly associated to the Eskimo; 2) the *Aleut* and the *Koniag* are clearly *not* Eskimid; 3) the *Pre-Koniag* are clearly Eskimid; 4) Northern *Amerindian* are very heterogeneous, but closer to the Asiatic than to Eskimo; 5) central *asiatic Neolithic* appear in an intermediate position. Within the asiatic Mongolid, the Northwest group (Samoyed, Ostiak, Vogul) diverge to some extent from the Mongolian core, essentially by lesser developed facial dimensions. More specific details will be given hereafter.

Figure 1 shows a *dendrogram* —— graphic representation of phenotypical group affinities —— of the 54 groups. It is based on euclidean intergroup distances, computed on the first ten factor scores (totalling 98 % of global variance) obtained by principal component analysis. It gives a slightly more complex, but also more differentiated picture, containing —— with remarkable consistency —— elements of taxonomic, geographical, chronological and migrational structuration.

The dendrogram divides into two very evident main branches: A) the classic Eskimo, and B) the remnant Mongolid. The dendrogram can be further subdivided into five clusters, which all have a realistic signification:

1) *Northern and Northeastern Eskimo* (ranging from the Alaskan North coast up to Greenland). These local groups, scattered over an enormous geographical area, show an astounding degree of morphological homogeneity. (The samples "Norton Sound" and "Nunivak Island", both located in the Southern part of Alaskan Eskimo territory, happen to be affiliated to this Northern cluster. No explanation is presented as to yet)

2) *Bering Sea cluster*. It contains, besides the recent and sub-recent St. Lawrence groups, notably the *Chukchi*, the *Siberian Eskimo* and the *Pre-Koniag*. Extraneous groups (with no evident reason to belong to this cluster): Yukon Eskimo and Shageluk Indian (small sample).

3) *Core of Asiatic Mongolid* of Central and Northeastern Asia, to which Northwestern groups (Samoyed, Vogul) are affiliated on a relatively low level of morphological similarity; the remaining Asiatic groups (Giliak, Ostiak, Ulchi, Angara/Lena Neolithic) being loosely associated to other clusters.

4) *Aleut cluster*, assembles, again on a relatively low level of similarity, recent Koniag, Aleut (pooled) and Aleut (Kagamil burial caves). It must be emphasized that neither Pre-Koniag, nor Pre-Aleut, belong to this cluster.

5) The *residual cluster* contains essentially Southern Alaska Eskimo, together with neighbouring Amerindian tribes. These groups could be qualified as being *transitional by admixture*. Furthermore, this cluster contains two early groups (St. Lawrence and Point Hope), which also might be interpreted as being *transitional* (in terms of *ethnogenetical differentiation*).

CONCLUSIONS

In spite of the fact that this preliminary study constitutes only a rough and very general approach of the phenotype variation of arctic and subarctic Mongolid, several facts appear clearly:

1) distinctive (specialized) morphology of the Eskimo;
2) remarkably clearcut geographical structuration of their morphological variability: North Coast (from Alaska to Greenland!), Beringia, Southern Alaska;
3) close relationship between the groups on either side of the Bering Strait: Chukchi, Siberian, and local Alaskan Eskimo;
4) Eskimoan origin of the Pre-Koniag (the modalities of differentiation having led to the actual Aleut and Koniag, remain to be investigated);
5) migration route, taken by the early migrants, led exclusively across the Bering Strait, with subsequent split into currents heading north-, south- and southwestward.

Further studies, with additional material —— and profiting from more detailed chronological information —— will certainly yield new, and more profound, insight in this fascinating anthropological and historical problem.

REFERENCES

1. Hrdlička, A. 1942 *Crania of Siberia. AJPA (29,4): 435—481.*
2. Hrdlička, A. 1942 *Catolog of Human Crania in the United States National Museum Collections. Eskimo in General. Proceedings of the United States National Museum (91): 191—429.*
3. Hrdlička, A. 1944 *Catalog of Human Crania in the United States National Museum Collections. Non-Eskimo People of the Northwest Coast, Alaska, and Siberia. Proceedings of the United States National Museum (94): 1—174.*