

CRANIOMETRY OF THE BRONZE AGE STEPPE POPULATIONS OF SOUTHERN RUSSIA AND UKRAINE (WITH REFERENCE TO THE INDO-EUROPEAN PROBLEM)

Kozintsev Alexander

Museum of Anthropology and Ethnography, Russian Academy of Sciences, Saint-Petersburg, Russia

Archaeological and linguistic data suggest that Chalcolithic and Bronze Age inhabitants of the Russian and Ukrainian steppes were mostly Indo-Europeans. Which of the theories concerning the Indo-European (IE) homeland – “Kurgan”, Central/Western European (CWE) or Anatolian – shows a better agreement with the cranial evidence? What can cranial data tell us about the dispersal of filial IE groups such as Indo-Aryans and Iranians? My database includes more than 250 male cranial series. Measurements were processed using canonical variate analysis and Mahalanobis distance.

Most Early and Middle Bronze Age series (all Pit-Grave and 20 of 22 Catacomb as well as Poltavka and Potapovka) are closer to the pooled local Chalcolithic (Sredni Stog and Khvalynsk) group than to the pooled Chalcolithic and Bronze Age groups either from CWE or the Near East, indicating population continuity in the steppes but, in contrast to what most EU homeland theories predict, few migrations either to or from the steppes. Exceptions are Maikop, Kemi-Oba, Tamar-Utkul, two early Catacomb, Babino, and one Sintashta group. They are closer to the pooled Near Eastern series than to the steppe Chalcolithic. Three early Catacomb groups and Babino deviate also toward the pooled CWE series.

A more detailed analysis reveals CWE parallels to certain Pit-Grave and Catacomb series. An especially close analogy is the Ostorf group, northern Germany, representing the Tiefstichkeramik variant of the Funnel Beaker Culture, which may be proto-EU. Apart from steppe parallels, this group has a geographically remote parallel in Central Asia – the Bronze Age Okunev group from Aimyrlyg, Tuva, which also resembles certain Pit-Grave and Catacomb people. This might evidence a long-distance eastward migration of Indo-Iranians along the steppes. The Aimyrlyg skeletons, like the Xinjiang mummies, possibly mark the easternmost reaches of that migration. Among the later (Early Iron Age) people, the Aimyrlyg population is very similar to European steppe Scythians, supporting the archaeological theory of their Central Asian origin. If this theory is correct, then Scythians may have acquired their Iranian language not from their predecessors in the steppes – the Timber-Grave people – but from an early group of Iranian migrants from Europe to Central Asia.

Key words: *Indo-Europeans, indo-european homeland, indo-european migrations, Indo-Iranians, Aryans, Iranians, Scythians, physical anthropology, craniometry*

Contact information: Kozintsev Alexander, e-mail: agkozintsev@gmail.com.

GENETICS, GENOMICS AND METABOLOMICS OF HUMAN BODY COMPOSITION

Livshits Gregory

Human Population Biology Research Unit, Department of Anatomy and Anthropology, Sackler Faculty of Medicine, Tel Aviv University, Israel

Department of Twin Research and Genetic Epidemiology, Division of Genetics and Molecular Medicine, KCL, UK

A chronic degenerative disease is a disease in which irreversible degenerative changes occur in the affected anatomical structure(s) and/or physiological function(s) and which progressively deteriorate over time. This disease may affect virtually any organs' system and function, including body composition, which will be in the focus of the present talk. Basically, body composition components include lean, fat and bone body mass. All three components are highly important for normal physiology and metabolism, and deviations from normal values are often associated with various pathological conditions. They include age related loss of muscle and bone mass (sarcopenia and osteoporosis respectively). However, despite extremely high incidence of both these conditions in the developed countries, often considered as new epidemics, and well established major contribution of the genetic factors, identification of the specific genetic polymorphisms is far from the comple-

tion. Huge effort is now invested in study of various candidate genes and potential specific polymorphisms selected from functional genomic data-bases and implementing bioinformatics tools. Numerous whole genome linkage and currently association studies identifying hundreds of new suggestive polymorphisms and dozens of new genes are also waiting for approval from the same sources of functional genomics. These results if confirmed could be of considerable basic scientific and clinical significance, in particular for the personalized medicine. The present talk will illustrate this status of affairs in our research, focused on bone strength/fragility and sarcopenia related phenotypes. In particular, this presentation will show the main results of our research implementing modern “omics” methods including whole genome and metabolome studies to identify specific genetic factors and endogenous molecules associated with muscle mass and sarcopenia related phenotypes in general population. I will present some selected results of the GWAS and functional genomics analysis of the muscle mass variation obtained in largest up-to-date international consortium.

Key words: *muscle mass, BMD, GWAS, candidate genes, association analysis*

Contact information: Livshits Gregory, e-mail: gregl@post.tau.ac.il.

EPIDEMIOLOGICAL AND NUTRITION TRANSITION: THE DOUBLE BURDEN OF MALNUTRITION

Mascie-Taylor Christopher Guy Nicholas

Department of Archaeology and Anthropology, University of Cambridge, UK

The theory of the epidemiological transition focuses on the complex changes in patterns of nutrition, health and disease and on the interactions between these patterns and their demographical, economical and sociological determinants and consequences. The theory was first put forward by Abdel R. Omran based on his analyses and comparisons of mortality patterns.

The Epidemiological Transition is obviously linked to demographic and nutrition transitions. As far as nutrition is concerned changes in dietary and physical activity patterns are partly responsible for the secular trend in average stature and alterations in body composition. However many modern societies have a diet high in saturated fat, sugar, and refined foods and low in fibre (this diet is often referred to as the “Western diet”) and this diet is associated with high levels of pre-obesity and obesity as well as increased risk of chronic and degenerative diseases e.g. diabetes.

Many countries are suffering from both undernutrition as well as overnutrition (i.e. the double burden of malnutrition).

This paper reviews these concepts and considers how aid programmes can impact on these transitions.

Key words: *Epidemiological Transition, demography, malnutrition, undernutrition, overnutrition*

Contact information: Mascie-Taylor Christopher Guy Nicholas, e-mail: nmt1@cam.ac.uk.