

disease more common in children. The present study identifies pathological changes in the pneumatized cells of the mastoid process based on macroscopic, light microscopic, radiological and x-ray computed tomography investigations in human skeletal remains from the Late Ottoman Empire Period in Karacaahmet Cemetery, İstanbul, Turkey. During the examinations from Karacaahmet Skeletal Collection, a mastoiditis case was diagnosed, which is so far the first known from Ottoman collections. The skull belongs to an adult female subject. It is suggested that further paleopathological investigations are needed in the incidence of the infectious ear diseases to reflect living and health conditions of ancient Anatolian populations.

Key words: Mastoiditis, infection, skull, paleopathology, Anatolia

Contact information: Sağır Mehmet, e-mail: mhmtsgr@gmail.com.

STATURE ESTIMATION FROM THE RADIOGRAPHS OF METATARSALS IN TURKISH POPULATION

Sağır Seçil¹, Sağır Mehmet²

¹*Abi Evran University, Faculty of Science and Letters, Department of Anthropology, Bağbaşı Campus, Kırşehir, Turkey*

²*Ankara University, Faculty of Languages, History and Geography, Department of Anthropology, Ankara, Turkey*

To determine stature is as important as the determination of sex and age when analyzing and identifying the remains of skeleton. Stature, in an approximate and widespread manner, is being determined on the femur and tibia lengths, which are the long bones that directly affect the stature. However, when long bones are not available or they are found in a very bad state of preservation that does not permit any estimation of stature, then other bones of the body are also being used for this purpose. The aim of this study is to determine stature with the help of metatarsals in Turkish population. In this study, by using the x-ray films for the metatarsals bones of 100 women and 100 men, the Bayesian regression equations have been produced for 5 metatarsal bones. The coefficients of correlation existing between the metatarsal bones and stature, together with the standard errors of these equations, have been examined at length throughout this study. The results of the studies conducted by other researchers (Byers, Akoshima and Curran, 1989) have been compared with the results of our study.

Key words: metatarsal, stature, regression, forensic anthropology

Contact information: Sağır Mehmet, e-mail: mhmtsgr@gmail.com.

SEXUAL DIMORPHISM OF MORPHOLOGICAL FEATURES IN HIGHLY QUALIFIED FREESTYLE WRESTLERS

Semenov Muradin

Department of Biomedical Support MGFSSO, Moscow Sport Committee, Moscow, Russia

For the analysis of sex differences in the morphology of freestyle wrestlers data of 133 women and 88 men were used. The program included 69 absolute and relative indicators of total body size, body proportions, girths, body mass components. The degree (%) and direction of sexual differentiation of each characteristic in women athletes compared to male athletes and their variability (σ , ν) were analyzed. The direction of the gender difference was determined by the dominance of the average values (X) of the traits and their variability (σ , ν) in one sex group over the other. The coefficient of sexual dimorphism (CSD) by E.G. Martirosov (1976) and S. Bailey (1981) was determined for each individual trait. While the prevalence in men was designated by the sign "+", the predominance of values characteristic for women had the sign "-".

The results are as follows: 1. According to the calculated CSDs, men in 53 measurements substantially exceed women athletes, mostly in lengths dimensions and diameters. At the same time they are inferior in indicators of subcutaneous fat and the circumferences of the hips and buttocks. 2. The analysis of the CSDs for body mass components shows the large values of indicators of fat mass in women's bodies and, vice versa, active cell, bone and skeletal muscle mass in men, which is confirmed by the results of bioimpedance examination.

Key words: freestyle wrestlers, body dimensions, body mass components, coefficient of sexual dimorphism

Contact information: Semenov Muradin, e-mail: muradin-81@mail.ru.

BIOLOGICAL BASIS OF MODERN HIGH PERFORMANCE SPORT

Shestakov Mikhail

Federal State Training Center of the Russian National Teams, Moscow, Russia

Till now development of physical and psychological abilities in athletes was mainly provided by intensification of training process aimed at reaching maximal capacity in various body systems, in particular by maintaining high work capacity by means of doping accompanied by the out-of-limit expenditures of vitally important reserves of the organism. The difficult situation that we currently observe in sport science is formed by more and more evident contradictions between the already existing and the required knowledge about human organism on the one hand, and ways of achieving sport goals in young and adult athletes by means of physical work capacity stimulation pushing the limits of human capacities, on the other hand. This situation can be solved on the base of setting a new task in sport scientific researches. This task should be focused on "creating conditions for realization of near-maximal natural capacities of a human organism", rather than on "achieving a top result". The problem is to determine interdependency of joint development of the cellular, organismic, and social levels organized in a hierarchy. We think simulation modeling based on the informational approach to be a key method permitting to reveal time aspects of the evolution of joint work at those levels, provided mathematical means are adequate to biological laws. In this context special attention should be paid to the use of molecular computers, development of special complexes fitted with an interface for on-line control of processes, which take place in the athlete's organism at the cellular level. Hybrid systems of artificial intelligence permit to create models of voluntary movements control in athletes. The priorities of forming sport culture of an athlete can shift in three directions even today: firstly, enhancing nature-consistent character of pedagogical influence, that means bringing to conformity the content of physical and sport activity with natural laws of age development of motor functions of athletes; secondly, mastering high technologies of sport training from first steps to harmonious sport perfection of humans; thirdly, maximal approximation of the content and form of realization of sport training to those being individually acceptable for each athlete.

Key words: sport, top athlete, models, sport training

Contact information: Shestakov Mikhail, e-mail: mshtv@mail.ru.