cine than in the U.S.A., he prompts to better utilization of anthropological collections for the study and improvement of the state in the given directions, which he considers not

only useful, but also necessary.

So much Hrdlička in 1928. Much has changed since that time, something still holds good, is prompting and worth following. Development goes on, gaps in the knowledge of human groups are being bridged. At the same time, however, a proper branch of anthropology has developed and enters the system of sciences both from the viewpoint of individual countries and on a world scale. New anthropological methods as well as an organisation of international cooperation are developing. An example of such cooperation is the "Interna-tional Biological Programme" (I.B.P.) founded two years ago under the sponsorship of the World Council of Science Unions.

In accordance with the all-over-the world-scale, the section of the I.B.P. dedicated to man is supposed to gain fundamental data on man's physical ability, heredity, growth, and body structure, as well as on man's adaptation to extreme conditions. National committees of the countries listed for cooperation will choose some of the given topics, which they will be dealing with within the following five years. Research comprising unified methods is to start next year. World experts of I.B.P. have been entrusted with working out methodical handbooks that would ensure uniformity in gathering research material, and in its treatment. The scientifists of the participating countries charged with conducting research must be in close contact with these world experts. Czechoslovak Government has applied for full-scale cooperation. The Czechoslovak Academy of Sciences has set up a commission for I.B.P. whose chairman is the Academician Ivan Málek, and a sub-commission for problems of man headed by Prof. Dr. O. Poupa. The latter performs research in the field of growth and evolution, physical efficiency, nutrition, and human genetics. It also takes care that the particular working places taking part in fulfilling the tasks would adequately be equipped with apparatus and the like.

Czechoslovakia has good conditions for realizing the research project of I.B.P., and, for the most part, can continue in its own traditions. Some problems have already been worked on, others are part of the national research project and departmental plan. Anthropologists will take immediate part in fulfilling the tasks concerning the growth and physical structure, and will cooperate in the research of nutrition conditions, and physical ability largely by performing anthropometric measurements. Research is also being carried on in aged persons and citizens of Gipsy nationality in Czechoslovak territory, both being parts of a research project of international importance. I.B.P. stands only at its beginnings, but it affects even now largely the organized and centralized systematic work. If the International Biological Programme succeeds on an international scale in uniting the research methods and concentrating its attention upon the suitably chosen tasks, this event will mark an important turning-point in the development of anthropology and biology in general.

Dr. M. Prokopec, DrSc. Institute of Hygiene, Prague 10, Srobárova 48.

ANTHROPOLOGY AND SPORTS MEDICINE

J. A. KRAL and V. V. NOVOTNÝ

Anthropology is very closely connected with sports medicine and physical culture in general. Different anthropological methods have been used in medicine already from the very beginning of this branch of science. One of the first doctors to use anthropometric methods in Czechoslovakia within the scope of studying the influences of physical culture upon man, were Krupička (1872) and Maydl (1881).

Extraordinary for its time was Silberer's report (1882) dealing with the importance of physical training from

the standpoint of Darwin' theory, and Panýrek's study (1899, 1900) supporting "rational physical training" which harmonically develops all parts of the human body which harmonicany develops an partial body and leads to the acquisition of a number of suitable qualities. one of the first writers to make mention of the physical characters of sportsmen, in the world literature, was Stegcharacters of sportsmen, in the land Seaver (1896), gerda (1887), further Arnold and Seaver (1896), gerda (1887), Turner the viewpoint of anthropo-who described acrobats from the viewpoint of anthropowho described acrobats from studied typical characters of metry, Bemies (1900) who studied typical characters of metry, Bemies (1996) and in Czechoslovakia Chodounrunners and jumpers, and not only the age, but also the bodily s k ý (1903) who noticed not only the age, but also the bodily qualities of sportsmen, specific for a certain kind of sports, Later, Krümmel (1921) described the differences in bodily proportions among sprinters and runners, among gymnasts and swimmers, while Herxheimer (1921) appreciated and swillings, while the effect of athletic exercises upon the body of young people. A true pioneer of sports anthropology was Kohlrausch A true pioneer of sports (1923) who was the first to determine the types of sportsmen's bodies on the basis of detailed anthropometric examinations.

We could very well name this period of sports medicine the morphological phase. At the earliest beginning of sports medicine morphological research aspects prevailed in anthropological works, and measurements of body proportions and the establishment of "sports" types were major objects of

some investigators.

This phase was replaced later by the functional tendency. It was found, that, just as any functional evaluation without a morphological substrate is of little value to physical culture practice, also morphology lacking a satisfactory knowledge of functional aspects offers merely a very onesided views.

At present this latter phase goes over to the preventive tendency. This is an indivisible combination of morphological and functional indicators with the aim not only to describe, but to affect, on the base of the obtained results of examinations, the bodily building and ability of present populations. The results of these anthropological activities point not only to the favourable effect of sports, but also to certain undesirable concequences of one-sided training. At present, where the specialization of sportsmen often begins in early age, these results are of particular value in the medical control of sportsmen.

Of both theoretical and practical importance in sports medicine are the studies of the somatotype of persons going in for sports, and of its relationship to efficiency. The methods in use are numerous, but none is completely satisfactory at present. It is indisputable that the creation of a link will be necessary to combine even in this place morphological, functional, and psychological studies.

Problems of typology have, however, been already spoken

about in this Symposium.

The question what brings anthropology into direct relationship with sport and sports medicine may be answered in the following way: first of all, new and accurate somatometric methods. However, we must add that it is necessary to take care that accuracy is really respected. There are few branches where anthropological methods would be used so much as just in physical culture. Very many measurements carried out recently are being performed by willing amateurs, and accordingly these results have got to be evaluated.

The introduction of calipers into medical practice in physical culture is a contribution of great importance. Medical control of sportsmen requires, more than any other branch of science, an exact knowledge of the mutual ratio of the active body mass and the body fat.

An objective appraisal of the posture, recording of the rachigram and its goniometric evaluation is of extraordinary value for practical sports medicine, as particularly sports-men require, from the viewpoint of prevention, much attention in this respect.

The methodology of plantograms and their mathematical treatment have become an indispensable component of examination of every sportsman that comes to our Institute to

be physically examined.

Of much use is the cooperation in the sections of growth study and physical maturity of young sportsmen, also by means of determining the bone age. This has yielded interesting results.

It is impossible to omit the specific, broad, scientific hinterland which anthropology provides. It allows for a special complex view of man as part of a certain population. In this content it is also necessary to mention the big task with the solution of which the sports anthropologist is still faced. It is the treatment of the question relating to the complex conditions pertaining to members of various human races as to the individual sports performances.

In order to give a concrete example of how anthropology and sports medicine cooperate, we shall have a look on this cooperation at the Institute of Sports Medicine at the Medical Faculty in Prague, which at the same time is a training place for this branch, attached to the Institute for

Postgraduate Education of Physicians.

The beginnings of anthropological work at this Institute date as much back as to the time of its foundation in 1947.

Anthropological problems form the introductory part of instruction in sports medicine for students at the Medical Faculty of General Medicine in the therapeutic and stomatologic branches, at the Faculty of Hygiene, and in postgra-duate study courses for future physicists. With this pedago-gical aspect is also associated the authors' share in textbooks on sports medicine. Thus students of medicine get to know, in special chapters, the fundamentals of physical anthropology, first of all the problems of sports anthropology and functional ability tests.

The significance of anthropological program in scientific and research works is well obvious from its participation in almost all themes that are being dealt with by the Institute. be it research registered in a faculty, departmental, or state

plan of research.

In the routine examination of every day, the results of anthropological laboratory tests to which more than a thousand sportsmen are subjected every year, contribute to a complex appreciation of the sportsman from the viewpoint of sports medicine.

Anthropological problems in sports medicine enjoy great interest also abroad. Proof of this is furnished by some exquisite works of Polish, Italian, German, American, Japa-

nese, and other writers.

As is evident from our brief report, anthropology has always had an important place in physical culture and sports medicine. As today anthropology as well as sports medicine are interested in keeping a man healthy, and in raising the bodily ability of present and future populations, it is most probable that there will be more and more linking points between the two branches of science, and that anthropology will not only keep, but also increase its importance for sports medicine.

Prof. Dr. J. A. Král, Doc. Dr. V. Novotný, institut of Sports Medicine, Medical Faculty, Charles University, Prague 2, Salmovská 5.

SYMPOSIUM OF THE SECTION OF HUMAN ADAPTIBILITY OF THE INTERNATIONAL BIOLOGICAL PROGRAMME "MAN IN AFRICA"

After previous successful regional meetings of members of the Section of Human Adapatibility of the International Biological Programme (Warszawa, April 1965; New Delhi, September 1965; German Democratic Republic, November 1966) a Symposium of students of African population groups was held in Warszawa from June 24-27, 1968. The initiator of the meeting was Prof. Dr. J. S. Weiner, the organisational aspect was seen to by the Polish Anthropologizal Society guided by its President, Prof. Dr. T. Dzierzykray-Rogalski.

The programme of the Symposium comprised six parts, the contest of the line of the Symposium comprised six parts,

the content of which is to be gathered best from the quota-

tions of the titles of the individual lectures:

1. Introductory session:

J. S. Weiner: African Studies within the HA Section of IBP.

K. Michałowski: Archaeology and Anthropology: Research and Cooperation in the Nile Valley.

R. Stopa: Africa as a Cradle of Human Culture. 2. Hunting-gathering peoples:

N. Barnicot: Studies on the Hadza of Tanzania. L. L. Cavalli-Sforza: Research on African Pygmies.

R. Singer and J. S. Weiner: Investigations on the Biology of Hottentot and Bushman Populations in Southern 3. Savanna and West African peoples:

J. Huizinga: Human Biological observations on Some

African Populations of the Thorn Savanna Belt. J. Gomila: Studies in Senegal.

H. E. Boyo: Some Human Polymorphisms in Nigeria. R. O. Ojikutu: The Longitudinal Study of Skin Colour

Changes in Nigerian Children from Birth to 1 Year. 4. Egypt and neighbouring countries:

J. A. Valšík and others: Biology of Man in Egyptian Nubia.

E. Strouhal: Age Changes in Some Metrical Features in Nubian Men.

A. Wierciński: Time-spatial Regularities in the Distribution of Anthropological Structures in Egypt.

M. Olekiewicz: Some Statistical Aspects of Human Adaptability.

5. Biodemographic aspects of African Populations:

A. Rosset: Average Duration of Life in Africa.

T. Dzierzykray-Rogalski: The Influence of Biological Rhythms on the Mortality of Contemporary Inhabitants of Alexandria.

E. Promińska: Mortality of the Old People in Alexandria

in Relation to Social Environment.

Physiological and developmental adaptations: J. L. A. Chesquierre: Standards for Working Capacity

of Population Groups in Congo.

Z. Sprynar and others: La constitution, la composition du corps et la capacité fonctionelle des étudients d'éducation physique en Algérie.

E. J. Clegg and Pawson: Some Aspects of Child Growth in High-and-low Altitudes Populations in Ethiopia. M. Prokopec: A Developmental Study of African Youth.

M. Gregorczuk: Bioclimates of Africa.

The majority of lectures had the character of a "progress report" on proceeding, not yet completed or unelaborated research themes. Yet it can be seen from them that Africa is given for good reasons an outstanding place in the research of human adaptability, because due to its geographical, climatic, cultural and socio-economic heterogeneity it promises a multitude of new findings. Neither can the fact be overlooked that it is populated by different races (Negroes, Whites, Hottentots and Bushmen, Pygmies) so that the question of adaptability can be studied also in relation to the race

Some of the presented papers are the result of great, often complex expeditions, using up-to-date instruments and a rich expedition outfit, others came into being rather through the enthusiasm of smaller teams that could not afford higher financial costs or get hold of some important apparatus, and/or came across technical difficulties. In this case the coordinators of HA/IBP research should lend a helping hand to prevent unnecessary loss of information so important for

science.

The papers read by the Czechoslovak participants of the Symposium met with a good response, especially the results of the United Czechoslovak-Arab Anthropological Expedition to New Nubia. Great attention was roused by the finding that in almost 60 per cent of all Nubian Men marriages between first cousins take place and that almost 90 per cent of all marriages are between relatives. This circumstance follows from the conservative traditions of life in Old Nubia. The growth and development of Nubian youth was found to be retarded and prolonged, so that young men between 19 and 22 years of age have not yet finished the growth of all body dimensions. Most Nubian girls menstruate for the first time around 15 years. This is undoubtedly connected with quantitatively and qualitatively poorer food and with the