

ANTHROPOLOGICAL ACTIVITIES IN CONNECTION WITH THE WAR IN ENGLAND

(Based on information furnished the Secretary of the American Committee on Anthropology by Prof. Arthur Keith, Secretary of the English Committee)

On March 22, 1916, at the instance of the Royal Society of Great Britain, a conference was held with representatives of the leading scientific societies, with the result that there was established a *Conjoint Board of Scientific Societies*, corresponding to the National Research Council of the United States. One of the chief objects of this board was "to take such action as may be necessary to promote the application of science to our industries and to the service of the nation." Ultimately forty-eight scientific societies and corporations came to be represented on the Conjoint Board.

At the first meeting of the Conjoint Board, on July 20, 1916, the urgency and importance of a physical survey of the people was discussed. The board decided to ask the Royal Anthropological Institute "to submit a report to the Executive Committee of the Board of Scientific Societies on the desirability of a physical survey of the British people." The council of the Institute reported that such a survey was urgently needed, its reply being based chiefly on the report of the Inter-Departmental Committee on Physical Deterioration (1904).

Thereupon the Executive Committee of the Conjoint Board of Scientific Societies constituted an "Anthropological Survey Subcommittee" to advise the board (1) as to whether or not such a survey was desirable; (2) if it were desirable, how it could best be carried out; and, (3) how far the facts yielded by such a survey were likely to serve a national purpose. The members of the subcommittee thus appointed were: Maj. Leonard Darwin, Col. James Galloway, Dr. P. Chalmers Mitchell, Prof. G. Elliot Smith, Prof. Karl Pearson, Prof. Arthur Thomson, and Prof. A. Keith.

It soon became apparent, however, that "the labors of the subcommittee would be in vain unless it obtained the advice and coöperation of all those departments of the Government which were directly concerned with the health and physical welfare of the people." A recommendation to this effect was acted upon favorably by the Govern-

ment authorities, and the following were added to the Subcommittee on Anthropology: Sir Arthur Newsholme, representing the Local Government Board; Sir George Newman, representing the Medical Department of the Board of Education; and Dr. T. H. C. Stevenson, representing the Office of the Registrar General.

The first and most important question that came up before the subcommittee was that of the anthropological survey, and "it was clearly the opinion of every member present that such a survey was needed." The subcommittee proceeded to define the undertaking.

The next weighty question was, How was the survey to be made? But little guidance could be obtained from the surveys made in other countries. In the final phase of the Civil War in the United States stature measurements were made of 1,232,256 recruits who joined the northern armies (1863-64). The color of hair and eyes was noted in 668,360. Records of nationality were kept. The men who measured the American recruits had not been trained to make exact observations in a uniform system. Yet the data thus accumulated have proved of great and permanent value. In Great Britain no systematic survey of the physique of the nation has been made.

Studies for the purpose of obtaining exact information regarding the physical characters of their children and men have been made in France, Belgium, Switzerland, Germany, Sweden, and Russia; but in no case was a systematic physical examination of representative parts of the whole population carried out; and in the majority of cases these surveys were local and individual efforts. "The real lesson which may be learned from surveys made in other countries was that a survey which is to yield the data we stand in need of must be made under the aegis of a central authority—with right of surveying the population of certain specified areas of the country."

The only survey which promised to prove helpful to the subcommittee was that carried out in Italy in 1879-1883. In 1879 Dr. Guida proposed that the 1859 class of recruits, called up in 1879 at the age of 20, should have certain measurements taken and physical characters observed during their five years of service.¹ The scheme was adopted by the authorities of the Italian army. For the purpose of recruiting, Italy was divided into 1,719 areas, each of which yielded an average of 174 recruits, the total number surveyed being just under 300,000. The following observations were made:

¹ Dr. Ridolfo Livi: "Antropometria Militare." Rome, 1896, 1905.

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| 1. Hair—color and texture. | 8. Nose—shape. |
| 2. Eyes—color. | 9. Mouth—shape. |
| 3. Skin—color. | 10. Chin—development. |
| 4. Teeth—condition. | 11. Face—shape. |
| 5. Head—greatest length and breadth. | 12. Stature. |
| 6. Eyebrows—color. | 13. Weight. |
| 7. Forehead—shape. | 14. Circumference of thorax. |

The survey was made at recruiting stations. There is no reason to believe that the officials at the recruiting stations had been trained in a uniform system of measuring and observing, nor is it evident that each station was supplied with a uniform set of instruments and standards. Apparently observations were not always made by medical officers; for injunctions are given that the head measurements are to be made only by them. Of the 14 observations made on each recruit, only the three last, relating to the stature, weight, and thoracic circumference, can be regarded as yielding exact data. In all other instances the observer had to formulate and apply his own individual standard. Imperfect as the Italian survey may be in some respects, there can be no doubt that it yielded information of national value. Italy thereby obtained a basis on which, when another survey is carried out, an exact estimate of the physical progress of the Italian people could be made. She obtained, for the first time, an exact picture of the distribution of the various physical types of manhood throughout her territories. She obtained data facilitating an inquiry into the influence of race and of environment in determining the physical state of the people.

The Machinery of a Survey.—The Inter-Departmental Committee of 1904 favored the scheme of survey placed before it by the late Prof. D. J. Cunningham and the late Mr. John Gray. That scheme was based on the constitution and methods of the Geological Survey. A National Bureau was to be created, consisting of (1) a Consultative Committee of three expert anthropologists, one from England, one from Scotland, and one from Ireland, the appointments to be honorary, (2) a Director and Deputy Director; (3) a Staff of Surveyors. Professor Cunningham and Mr. Gray preferred a permanent staff of trained surveyors; the Inter-Departmental Committee preferred the employment of part-time surveyors.

Since the above proposals, conditions have materially changed and new plans for the survey have become a necessity. There is one matter, however, "about which there can be no difference of opinion: Those who make the measurements or observations must all be trained

in a common system, and that system, once adopted, must be most rigidly adhered to by every one taking part in the survey. No matter whether the observer is a medical man or not he must undergo a training and pass a test in the method adopted by the subcommittee."

Under the new Medical Boards of England every recruit will be examined and have certain anthropological records made concerning him—his height, weight, chest measurement, color of hair, and color of eyes—but examinations for the purposes of the survey must be more detailed and carried on especially on representative samples of the population of all the districts into which Great Britain is divided.

The size of these samples is a matter to be settled by statisticians. The late Mr. Gray was of the opinion that no survey would be satisfactory which included less than 2 per cent of the whole population. That is probably too low an estimate; a 5 per cent basis would prove more satisfactory. Of the 16,000 men between the ages of 23 and 41 in the city of Aberdeen we should probably have to take a sample of 800 to obtain a true picture of the physical condition of the whole group. They would have to be drawn in equal proportions from certain defined areas of the city.

As regards the country area of Aberdeen a somewhat different method would have to be adopted. The city sample is representative of its adult military manhood, but were samples to be gathered from all over the country area and embodied into a single group, there would be danger of missing one of the chief objects of a survey—the discovery of the distribution of racial or physical types. In the country part of the Aberdeen area the natural groupings lie along the river valleys and adjacent uplands of the Deveron, Ythan, Don, and Dee. Three districts could be chosen and defined for survey—the Deveron, the Don-Ythan, and the Dee districts—which would be sufficiently large to yield representative groups. Six hundred men from each of these three districts should suffice to give reliable information concerning the anthropological characters of the manhood of each area. Along the coast is distributed a fishing population which certainly should receive separate treatment. Under the scheme here submitted it is presumed that a careful anthropological examination of 800 city men, 1,800 country men, and 400 fishermen would suffice (1) to provide accurate information concerning the physical condition of the men of the area; (2) to show the distribution of physical or racial types; and (3) to give a basal standard for comparison with the results obtained by surveys in the future. This, perhaps, is the most important object of the survey.

Survey of Growth.—So much for the manhood of the area taken as an example. Perhaps as important, or even more important for the objects the subcommittee has in view, is an investigation of the stages of growth which culminate in the finished element—mature manhood. It should not be necessary to examine children and youths in every stage of growth. In schools under the jurisdiction of the Board of Education, children undergo a systematic medical examination at two stages: in their ninth year and again in their thirteenth year. As the law now stands every youth has to present himself for examination by the Medical Boards of the Ministry of National Service at the commencement of his nineteenth year. It would therefore be most convenient to select these three stages of growth for survey—in the ninth, thirteenth, and nineteenth years. Samples should be taken from the same areas and the same population as yielded the adult samples. In the city of Aberdeen there are about 1,800 boys in their ninth year, approximately the same number in their thirteenth year, and 1,650 in their nineteenth year. It may be necessary to measure as many as 800 boys in each of these three classes, the samples being selected from the same districts of the city and in the same proportions as the adults. In the Aberdeen country area, groups of 800 from each of the three districts selected for a manhood survey could not be obtained. But each district could provide groups of 400 to represent the three selected stages of growth—the ninth, thirteenth, and nineteenth years. A “growth” survey of the Aberdeen area would thus involve measurements of 6,000 individuals; 2,400 in the city and 3,600 in the country.

An ideal survey should also be extended to girls and women. At present there would be no difficulty in obtaining measurements of schools girls and a way may be found of bringing young and adult women under the scope of the survey. As matters stand at present, there are no means of extending a survey to women.

The Aberdeen area, which has been chosen as an example, is one of the 90 areas into which Great Britain has been divided by the Ministry of National Service for the purpose of grading the manhood of the nation. The difficulties and problems it presents are representative of other areas. Its population is approximately 400,000; in that respect it is an average area. For an anthropological survey of its male population it is proposed that 8,000 individuals should be examined. A survey of all 90 areas will therefore entail the examination of 720,000 or, say, 800,000 individuals. Every area, both city and country,

would require to be divided into defined districts and certain of these districts should be selected for survey. In certain areas opportunities would be found for the survey of men engaged in special occupations.

Measurements and Observations.—In selecting a list of the characters to be surveyed the subcommittee was guided by the following necessities: (1) They must be few in number; (2) they must be suitable for exact and easy measurement; (3) they must be such as will yield definite evidence of the physical condition of the body.

The following list was recommended for favorable consideration:

Measurements

Body:	Face:
Weight.....	Submental point-nasion.....
Stature.....	Diam. bizygom. max.....
Height sitting.....	
Length of span.....	
Head	
Length.....	Girth of chest.....
Breadth.....	Antero-posterior diam. of chest.....
Height.....	Lateral diam. of chest.....

Observations

Color of eyes.....
Color of hair.....
Color of skin.....

In restricted areas a dental survey should be added, entailing six series of observations in each individual case.

The above instructive and valuable report of the British subcommittee ends with the following recommendation, the importance of which will be evident to all men interested in these matters:

“It is desirable that the records made in Great Britain and America should be conducted so as to give results which are directly comparable. The Secretary (Dr. Keith) has therefore communicated with those who have made themselves responsible for the survey in the United States.”