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NEW FRONTIERS IN ANTHROPOLOGY

By DR. W. MONTAGUE COBB

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A LEXANDER MEIKLEJOHN in his presidential address at the Amherst Centennial said, "There are two ways of facing life, two



Dr. Cobb

kinds of wisdom for man-One is the way of kind. dread, the other the way of confidence. One rests on fear and cunning; the other on hope and faith. One is for man, the beast; the other for man, the spirit." In that spirit of confidence which must imbue efforts to make the world better for living without crushing the other fellow, brief note is made here of certain considerations pertaining to numbers

and quality in human beings and of new approaches in science which, if properly attended by ourselves, may improve the lot of generations rising and unborn.

All living creatures tend to multiply without limit. It has been estimated that if all the progeny of a fertile female housefly in April continued normal reproduction without interference, they would cover the earth over forty feet deep by August. Fortunately, environmental resistance, which is the sum of the external factors which restrict the potential increase in numbers and the habitat of a given species, prevents such an insectean deluge.

Man has been more successful than any other animal in overcoming his environmental resistance. As a result he is the dominant and most widely distributed form of life on this planet, although his reproductive capacity is comparatively small. Today the earth is facing the problem of human overcrowding for the first time in its history. With tools now in hand it is likely that man will make even further progress

in subduing his environment so that population pressure may in time become universally acute. Several investigators have concluded that in two or three hundred years all the usable lands of the world will be fully saturated. Such an eventuality would render the oppressive placebos with which certain crowded nations today seek to allay their ills more obviously futile than at present.

Logic would dictate that human effort should be directed to the end that all localities would be peopled with only as many individuals as could be comfortably supported and that, in the interest of peace and progress, these individuals would be of superior quality. Consequently, birth control in all its aspects, and the more difficult and complex problem of growing better human beings are receiving widespread and intensive study today, though the immediate stimuli to such study are generally less altruistic than the logical ideal.

Physical anthropology might properly be asked for valid specifications as to how the most superior types of human beings might be identified and how they should be bred and nurtured. This would seem an ambitious but not unreasonable demand of a science which concerns itself with the study of human constitution in all its variations, against the background of its developmental and comparative zoological history. Prescriptions for the attainment and maintenance of human superiority have not been wanting as the multiple racial ideologies of the past and present compellingly attest, but their bias diverts our interest from these.

If we should take the anthropometric data which more than a century of careful assemblage have given us, and attempt to set down builders' specifications for superior human beings we should end with products acceptable today in any quarter of the globe.

We should first require that our superior beings be born of long-lived ancestors because the

best index of potential longevity now available is the longevity of one's forebears.

Our group could have a wide range of statures to suit all tastes, because in modern civilization stature has negligible survival value, although in primitive conditions it is of undoubted importance in combat, labor and escape. Today desirable stature is essentially a matter of esthetic preference, the ladies generally favoring tallness. Our correlation tables would prescribe body weights suited to the respective statures.

Because differences in stature are due more to variations in leg length than in trunk length, our tables showing the relationship between stature and sitting-height would give us an appropriate trunk length for each stature.

We might then invest each torso with vital organs of adequate size. It would be difficult to err in this respect because of the tremendous reserve capacity which the vital viscera possess. It has been demonstrated that a man may live with only a third of one lung, or a third of one kidney, or with but a few feet of the approximately twenty-six feet of the gastrointestinal tract, and it has been estimated that most of us routinely use only about one-eighth of the gray matter of our brains. Nevertheless, we should endow our group with large brains because the brain weight of distinguished people tends to be above the population average, although some brilliant men, such as Anatole France, have had unusually small brains.

Ideal body proportions might be permitted to remain matters of local fashion as they are to-day. In the United States, for example, the typical Negroid physique with broad shoulders, narrow hips and long legs is generally regarded as a masculine ideal, while the feminine model is a white type of body build with moderate shoulders, full hips and well developed breasts.

It would not be necessary to give specifications for any of the traits by which race is determined because none of these traits have direct survival value in our civilization or bear a significant relationship to human caliber or fitness. We could thus let our superior subjects choose what head form, skin color, eye color, hair form, nose form, lip thickness, tooth arrangement, facial index and the like, they preferred, because in respect to human capacity these items are of no moment. Doubtless our superior group would engage in experimental breeding which would produce

more interesting combinations of these traits than are at present known.

In short, our anthropological data have shown us that practically everywhere on the earth's surface human beings of superior potentialities may be found and that the mixture of blood of such people is without demonstrable dysgenic effects. Consequently, the interest of the anthropologist may become concentrated on better breeding and better nurture. While the lack of knowledge and facilities prevents the practical establishment of eugenic practices free of non-biological influences today, opportunities for study of the growth and proper care of the young abound. It is here that we view new horizons.

The possibilities of a human being are greatest when he is a freshly fertilized egg, and man can do nothing to enhance the potentialities of the zygote. We direct our efforts to conserving as many of them as possible so that latent capacities may be developed into useful abilities.

This requires an exhaustive knowledge of every phase of the human life span from fertilization to senescence. In extending old, providing new and coordinating objective measures of developmental progress over the entire span, the physical anthropologist can and is performing a great service.

We have long had dimensional norms as checks for our growth in size. Height-weight charts are the most familiar of these. Gradually the anthropologist is giving us more valuable measures of maturity, as distinguished from increase in size, in standards of the age changes in our bones as shown by the X-ray. Not only does the skeleton show accurately the progress of maturity but it reveals interruptions of development produced by disease or nutritional disturbance. A severe illness will halt growth and the growing bone ends will become denser. After recovery when growth is resumed new bone will be added to the growing end but the dense area will remain and form even in adult life a telltale shadow on the roentgenogram, marking the time and approximate duration of the illness.

In addition the X-ray is being used to follow skeletal development before birth, and in adult life and age, after growth, but not developmental change, has been completed.

Along with this, the physical anthropologist, with the aid of the psychologist, is following the

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patterns of mental development of the growing child so that the well organized laboratory can furnish a composite picture of the physical growth, maturity, and the mental development of a given child in a very short time. Further, it is becoming possible through studying series of the same children from before birth to adulthood to detect very small developmental aberrations and indicate their significance, probable causes and means of correction.

Anthropological studies of this type require the aid of experts in many interpenetrating fields of knowledge and so promote the essential unity of science. The human salvage value of such studies to parent, teacher, individual and state is at once obvious and inestimable. In the sense of Edwin Markham's poem,

"He drew a circle to shut me out—
Heretic, rebel, a thing to flout.

But love and I had the wit to win:
We drew a circle that took him in,"
all who believe in the great circle will be deeply interested in the progress and applications of

investigations of this kind.