

## ANTHROPOLOGY OF MODERN CIVILIZED MAN.

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IN the organization of a university many years ago, one of the questions which arose was whether to class anthropology under psychology, or psychology under anthropology. Inasmuch as the psychological department of the university was the predominating one, anthropology was made a subdivision of psychology.

But anthropology has long been established while psychology has not as yet produced a sufficient body of truths to be called a science in the rigid sense, though it has made great progress in application of scientific methods in its work. Like sociology, psychology is called a science by courtesy, but this does not lessen its value, for some of the most promising branches of inquiry have not yet reached the scientific status, though they are of great service to the community. Yet the older and better established subject should be the basis. The word anthropology itself is also more directly applicable to man. In fact, all branches of science that deal directly with man's body and mind should be under the head of anthropology. As the modern development of psychology has been mostly in its connection with anatomy and physiology, this brings it very close to anthropology in a fundamental way.

The anthropology of modern man, as distinguished from that of ancient, savage and prehistoric man, is very recent. A proof of this is the fact that the first scientific study ever made of a human being was that conducted upon Zola by some twenty French specialists in anthropology, psychology and medicine. This was published in 1897.<sup>1</sup>

Even the word "anthropologist" in the sense of a student of mankind as it is to-day, is scarcely heard. It may seem strange that

<sup>1</sup>The author has made a summary of this study in his work entitled "Juvenile Crime and Reformation," Senate Document No. 532, 60th Congress, 1st Session.

anthropology has been occupied so little with the study of modern man.

Whatever the reasons for this, it is due time that anthropological study be directed much more to man as he is now, for he is directly accessible to investigation, whereas ancient and prehistoric man is much less so. It is almost an axiom of scientific method that the better you can control the material, the more trustworthy the conclusions.

#### STUDY OF THE NORMAL MORE IMPORTANT THAN INVESTIGATION OF THE ABNORMAL.

While the author has given much attention to the abnormal, yet one of his earliest and most extensive investigations was that of the Washington school children.<sup>2</sup> He also has made numerous studies of the normal in colleges and other educational institutions.<sup>3</sup> Also in the study of penal and reformatory institutions the inquiry concerns the normal mainly, since about three fourths of the inmates are normal, it being their environment which was abnormal. Moreover, the methods of study are the same both for the normal and the abnormal; the study of either one assists in the study of the other.

Within past years the author has turned his attention almost wholly to the normal, especially persons of ability, talent or genius.<sup>4</sup> While the investigation of the abnormal, so called, has its great value, the study of the normal, especially the supernormal, is still more important, for it is better to understand those things which lead to success than to learn the causes of life's failures.

#### SYNTHETIC TRAINING REQUIRED.

One difficulty in developing this modern phase of anthropology is the necessity of extensive preliminary training, because not only anthropological knowledge, but medical courses and especially experience in psycho-physical laboratories are required to be adequately equipped for such work; that is, a synthetic training is called for.

<sup>2</sup> "Experimental Study of Children," published in the *Annual Report of the U. S. Commissioner of Education*, 1897-1898, Washington, 1899.

<sup>3</sup> "A Plan for the Study of Man," Senate Document No. 400, 57th Congress, 1st session, Washington, 1902.

<sup>4</sup> "Mentality of Nations," published in *The Open Court*, August, 1912; also in *The Scientific American*, New York, and in *Nature*, London, Nov. 14, 1912. Cf. "Estudio del Senado de los Estados Unidos de America," in *Revista Argentina de Ciencias Políticas*, 8th year, Vol. XV (24 pages), Buenos Aires, 1918. See also: "Scots and Scottish Influence in Congress," to be published in *The Scotch Encyclopedia*, New York.

I appeal to university students to direct their attention especially to the scientific study of humanity. Let the university encourage students more to take up these subjects which have been so long neglected and in which there are great opportunities to aid humanity, directly through knowledge gained by first-hand study of individuals themselves.

When a student chooses for his lifework a subject in the older branches of knowledge, as physics, philosophy, philology, Greek, Latin and natural history, he finds the field somewhat well developed; but not so in more recent sociological lines of research, as anthropology, and other cognate subjects, in which there is full opportunity for mental acumen and scientific ability of the highest character to carry out most lofty purposes.

The question may arise as to what course of study will prepare one best for such work. I would suggest the following:

1. Courses in psychology laboratory work.
2. Medical studies to the extent of anatomy, physiology, general pathology, nervous diseases and insanity, especially clinical studies.
3. A practical course in craniology in the laboratory.
4. Facility in reading modern languages.

Thus, the anthropology of modern man requires more extensive preliminary training perhaps than any other subject, for it involves the investigation of man both mentally and physically. Such training is synthetic, which in this age of specialism is much needed. Some students should be trained to combine and utilize cognate branches of knowledge. They should know enough of such branches to properly interpret the results obtained by specialists.<sup>5</sup> As such education is relatively new and experience in it as yet limited, it is difficult to designate a preparatory course. I have myself followed the course of study just indicated, but more extensively, especially in medical lines.

#### DIFFERENT KINDS OF ORIGINAL WORK.

It would be too much of a digression to consider the various kinds of original work, yet a very brief statement might be made. What is generally understood in science by "original work" is investigation of the raw material in the field itself (*in situ*). Thus from various physical examinations of children made by physicians, a new and original truth may be found; likewise by different mental

<sup>5</sup> See "Man and Abnormal Man" (by author), Senate Document No. 187, 58th Congress, 3d session, Washington, 1905, p. 227.

tests of the same children new and original psychological results may be brought to light. But to analyze and combine these two kinds of truths into a psycho-physical new truth is equally original work and probably of a higher order and importance, and requires both medical and psychological knowledge with the resultant insight; that is, synthetic training is necessary. Yet in spite of the lack of such training, much good work has been done, but it might have been done much better with proper equipment.

One great danger of specialism in the study of modern man is ignorance of closely related lines, so that the narrow specialist (if we may use that term) does not understand the relation of his work to cognate subjects, that is, its setting. He is somewhat like a person who is familiar with his stateroom, but does not know where the vessel is going.

#### NORMAL MAN CAN BE STUDIED IN PRISON.

Penal and reformatory institutions are specially suited for scientific investigations on account of the uniformity of conditions which surround the inmates, as compared with the heterogeneous and variable environment of individuals living in freedom. Also, the great majority of the inmates are normal, it being their abnormal (sometimes criminal) surroundings that have brought them to such institutions. Therefore, the study of these mostly unfortunate people is mainly an investigation of normal human beings, and the results of such studies will apply in general to most people. The relatively few really abnormal inmates can be distinguished from the others. It is unfortunately true that some have their abnormalities developed by long-continued unscientific treatment in institutions which are supposed to exist for the improvement of mankind.

#### LABORATORIES FOR HUMANITY.

As institutions for the abnormal and unfortunate classes are supported by public funds, there is no reason why they should not be utilized for humanitarian scientific study, the main object of which is not only to improve prison discipline and prepare the inmates to be better citizens, but to prevent others from going wrong by knowledge gained through the direct study of the individuals themselves. Thus, one function of these institutions will be that of humanitarian laboratories for the good of the community.

A large number of laboratories have been established, most of which are in the universities. But the plan of these laboratories is

mainly for pedagogical purposes. The research work is generally done by students desiring to prepare theses for their doctorates. While many of these are very valuable, a university could hardly extend such work to large numbers of individuals, for to gather the facts, compute and tabulate the results, would involve clerical duties and other work not undertaken by universities. Experiments in the university are generally confined to small numbers of persons who are a special class, so that it is doubtful whether conclusions obtained can always be applied to people in general.

The main object of a university is to prepare men for work, not to carry on their work.

There is need, then, for a laboratory different from those in our universities—that is, one not pedagogical, but sociological and practical, and of more utility to society directly.

#### HISTORY A LABORATORY.

From the anthropological point of view, history can be looked upon as a laboratory for the purpose of the study of humanity with a view of understanding it better and assisting in its progress.

In the past, anthropology has concerned itself mainly with savage and prehistoric man, but it is due time that it take up the more important and much more difficult subject of civilized man, not only as an individual, but as an organization,<sup>6</sup> or nation, or group of nations. It is true that other departments of knowledge, like history and politics, have pursued these fields, but unfortunately not always in the scientific sense. To use an ancient pun, it is *his-*story, rather than all the facts. Anthropology in this new field should seek to establish only those truths which can be based upon facts. There are doubtless many very important truths which cannot be established by scientific methods, but they perhaps can be better treated in psychology, politics, ethics, philosophy and theology.

#### WAR A SOCIOLOGICAL MONSTROSITY.

War is like the shaking of the tree in the hurricane; everything falls down—fruit, good, bad and rotten—dead limbs and worms—all is stripped off—the social organism is shaken to its very foundation and rent asunder—all things are laid bare—human nature yields itself up.

From the anthropological standpoint, war is not only abnormal but a sociological monstrosity, belonging under the head of tera-

<sup>6</sup> See the author's "Estudio del Senado de los Estados Unidos de America" cited above.

tology, a science which treats of monsters. The monstrosity consists in militarism and navalism, driving out humanity. War is probably an anthropological necessity, and if the late war had not come when it did, it would have probably started later, and have been still more terrible.

One of the objects of anthropology is to lessen war by knowledge gained through study of causes, and just as the spread of education and knowledge gradually liberated the intellect, so as to undermine the ideas upon which religious wars were based and thwart them forever, so a similar process of enlightenment may be necessary to cause political wars to cease.<sup>7</sup>

#### ANTHROPOLOGY USEFUL TO EVERY ONE.

As a further illustration of the benefit from anthropological study the extensive use of the Bertillon measurements and fingerprint systems might be mentioned. As soon as false and morbid sentimentality can be dispelled, and the *absolutely impersonal nature* of anthropological inquiry understood, these and other systems of identification can be made of practical value to all people. For instance, banks, life insurance and other institutions could establish personal identity easier and better. There would also be fewer soldiers and citizens with nameless graves.

No one should fear a law-compelling and adequate record of all persons. If one be conscious of some weakness which might cause him to go wrong, the feeling that his identity is fully recorded will have a salutary effect. In short, the more thoroughly anthropological methods are utilized for the study of mankind, the better.

To make the investigation of man more accurate, the time may come when many and eventually all persons will be willing to be examined by responsible and official experts, and after death dedicate their bodies to the study of humanity. If one had before him the anthropological history of his ancestors one, two or three generations back, giving in each case the height, weight, lung capacity, color of hair and eyes, cephalic index, measurement of pain and other sensibilities, mental ability and moral status, trade or profession, different diseases from childhood up and age at death; if these and other data concerning our ancestors were accessible, we might then be able to really know and understand ourselves, and as a result live more rational, successful and happy lives.

<sup>7</sup>See article (by author) entitled "Suggestions of the Peace Treaty of Westphalia (1648) for the Peace Conference in France," published in *Journal of Education*, Boston, March 27, 1919; also in *The Open Court*, April, 1919, and in *Central Law Journal*, St. Louis, April, 1919.

If necessary, stringent laws could be made against any misuse of the records. The eventual benefit to mankind of such facts would be inestimable. It would remove the stigma of our ignorance of human beings as contrasted with our more accurate knowledge of animals.

#### DIFFERENCE BETWEEN NORMAL AND ABNORMAL MAN.

The fundamental conception of the abnormal is *excess* of the normal. When the normal acts in an unfit way, or at the wrong time or place, it may become abnormal. The abnormal is potentially in the normal and is further distinguished from the normal by unequal or less consistency. All that is pathological is abnormal, but not all that is abnormal is pathological. Thus, a hand with six fingers is abnormal but not necessarily pathological.

From normality to abnormality there are many stages, and the difference between these stages is one of degree, and this difference in degree can become so great as to result in a difference in kind. Just as in mixing two chemical fluids, when the quantities reach a certain amount a precipitate is formed which is very different from the ingredients from which it was deposited. These stages constitute what may be called an intermediate zone.<sup>5</sup> In this zone are those who are slightly abnormal mentally, morally, or criminally. Their status may vary with the environment. Thus, unfortunate surroundings are liable to develop their abnormalities, while under favorable circumstances the abnormal may become normal again. Also a man's environment may be abnormal rather than the man himself.

#### NORMAL MAN SHOULD BE STUDIED MOST.

To study abnormal man we must investigate normal man, for we should know the normal in order to comprehend the abnormal. Also the methods of investigation should be similar, for we must have some general criterion or measuring-rod to distinguish between them. It is more important to study genius, talent and statesmanship than it is to investigate crime, pauperism and defectiveness. For to learn how to become useful, talented and brilliant citizens is much more advantageous than to discover what causes life's failures. But as society must protect itself, the abnormal, especially those who are dangerous, need attention. For, however in-

<sup>5</sup> Cf. "Mattoids" (by author), in *Medical Fortnightly*, St. Louis, April 25 1911.

significant such abnormals may be in themselves, they are at least important on account of the injury they can do.

The greatest of all studies is that of man himself as he is to-day. A scientific investigation of man must be based primarily upon the average individual, who is the unit of the social organism.

#### SUMMARY OF RESULTS OF WORK.

If we are ever to have sufficient definite knowledge of living human beings that may become a science, it can only be done by the careful study of large numbers of persons.

It would take one far beyond the purpose of this article to consider the many original and varied studies of modern civilized man which have already appeared. The author, therefore, will summarize the results of his own investigations, but will state only those conclusions which, so far as he knows, were new at the time published, and were based upon a sufficient number of cases to be worth while mentioning.

The total number of cases studied by the author is 42,375, being either investigated by him personally or under his direct supervision. The author has also made intensive detailed studies of about twenty-five criminals,<sup>9</sup> but they vary so much in age and environment that no general conclusion can be drawn. Should the reader desire to know the methods employed, the detailed conditions of experiments and nature of instruments used by the author in arriving at his conclusions, he should consult the works of the author referred to in the footnotes.

The following conclusions are divided into six sections, the first five of which concern mental ability in relation to physical, neurological and abnormal condition of children mainly, and in connection with sociological and racial factors. Section VI refers to a relation between anthropology and disease.

#### I. *Conclusion as to Mental Ability and Circumference and Shape of Head.*<sup>10</sup>

Head measurements are the most important of any, not only because the head encases the brain, but it is also preserved the longest

<sup>9</sup> Many of these cases appear in *Criminology*, New York, 1894, and in *Le Criminel-Type*, Lyons and Paris, 1895.

<sup>10</sup> Conclusions 1, 2, 4 and 5 are based upon studies in "Man and Abnormal Man," Senate Document No. 187, 58th Congress, 3d session, 780 pages, 1905. Conclusion 3 is found in Senate Document No. 400, "A Plan for the Study of Man," 57th Congress 1st session, 166 pages, 1902. See also article (by author) in *Medical Record*, New York, Dec. 14, 1918, entitled "Anthropometry of Soldiers."

after death and is a strong connecting link between modern, ancient and prehistoric man. The most important measurements of the head are its maximum length and width, which are the bases of the cephalic index. Too many psycho-physical investigations omit the cephalic index and thereby lessen greatly their scientific value.

1. The larger circumference of head in children, the greater the mental ability (21,930).<sup>11</sup> Physiologists have long believed this, but it had not been shown by actual measurements upon large numbers. This also accords with the opinion of zoologists, that the larger the head in animals, the greater the intelligence.

2. Broad-headed (brachycephalic) children are mentally superior to long-headed children (dolichocephalics), which is confirmed by the further facts that colored children are more dolichocephalic than white children, and also have less mental ability (1165).

These statements accord with the result of research in prehistoric anthropology, that brachycephaly increases as civilization increases.

3. Dolichocephalic university students are less sensitive to pain than the brachycephalic (377).

4. Children of foreign parentage (2074) have slightly larger circumference of head than children of American parentage (12,487), but children of mixed (foreign and American) nationality (1912) have smaller head circumference than those of American parentage (12,487).

This appears to indicate an unfavorable result of mixing nationalities.

5. Circumference of head is less in children with abnormalities (2244) than in children in general (16,473).

## II. *Mental Ability, Physical and Social Condition and Nationality.*<sup>12</sup>

Conclusions as to mental ability in connection with physical and social conditions and nationality are summarized as follows:

1. American-born children (12,487) are superior in height, but inferior in weight to foreign-born children (2074).

2. White children (16,473) are superior to colored children (5,457) in height and sitting height, but inferior in weight.

3. Children of American parentage (12,487) are brighter than

<sup>11</sup> Figures in parentheses indicate number of cases studied by author or under his direct supervision.

<sup>12</sup> Conclusions 1, 2, 3, 4, 5, 7 and 8 are discussed in Senate Document No. 187, conclusion 6 in Senate Document No. 400, both already cited.

children of foreign or mixed parentage (1912), suggesting that mixture of nationalities may not be an advantage.

4. The lowest percentage of nervousness are found in children of foreign parentage (2074) and in colored children (5457).

5. Children of laboring classes (5890) are more nervous than children of the professional and mercantile classes (6096).

6. Chattanooga boys (239) are superior in height and weight to Washington boys (7953).

This agrees with the belief that men of the Southern States are taller than men of the Northern States.

7. Girls (8520) are brighter than boys (7953) in their studies. but girls show more (15 per cent.) average ability than boys, suggesting less variability, which, from an evolutionary point of view, is not advantageous.

8. As age increases in children, brightness decreases in all studies, except drawing, manual labor and penmanship, that is, in the more mechanical studies (16,473).

### III. *Sensibility to Pain.*<sup>13</sup>

One of the main objects of the study of humanity is to lessen pain by knowledge gained through the study of pain itself. The following are some results of such study, gained through the use of instruments of precision. This may help toward finding the best method of lessening pain.

1. Children are more sensitive to pain before puberty than after puberty (247). Another independent investigation by the author confirming this, shows that

2. Sensibility to pain decreases as age increases (899).

3. The left hand is more sensitive to pain than the right hand (188). This may be due to the greater use of the right hand, increasing its obtuseness or hardihood to pain, and also

4. The left temple is more sensitive to pain than the right temple (2559).

5. Girls (1083) are more sensitive to pain than boys (887), and in accord with this

6. Women (188) are more sensitive to pain than men (142). But this does not refer necessarily to endurance of pain.

7. University women (184) and men (227) are much more sensitive to pain than working women (14). These last two state-

<sup>13</sup> Conclusions 1, 2, 4, 5, 6, 7, 8 and 9 are discussed in Senate Document No. 400, cited above. Conclusion 3 is explained in Senate Document No. 187, also cited above.

ments suggest the probability that sensibility to pain increases as sociological condition improves.

8. Blondes, born in summer (247), are more sensitive to pain than children born in winter (259).

If all the pleasurable and all the disagreeable and painful thoughts, feelings and sensations of all the inhabitants of the world were added in separate columns, and the two results compared, this might give an approximate answer to the question as to whether there is more pleasure than pain in the world.<sup>14</sup>

For the purpose only of illustration and suggestion, the author took a record of a government clerk for one day in Washington by placing the number of his positively pleasant thoughts, feelings and sensations in one column and the number of his positively unpleasant and painful thoughts, feelings and sensations in another column. Adding up these two columns of pleasant and unpleasant states of consciousness, it was found that the government clerk experienced 521 pleasant and 158 unpleasant states of consciousness; that is to say, if the experience of this clerk be considered as a general average, there is three times as much pleasure in the world as pain.

#### IV. *Sensibility to Heat and Locality on the Wrists.*<sup>15</sup>

1. Colored children (91) are much more sensitive to heat than white children (1014). This probably means that their power of discrimination is better, and not that they suffer more from heat.

2. Bright children (506) are more sensitive to heat and locality on the wrist than dull children (286), but this difference is greater in the case of heat.

3. Children, including colored children, are more sensitive to heat and locality on the left wrist than the right (1165). This may be due to greater use of right hand, causing obtuseness of feeling.

4. Girls (548) are less sensitive to heat and more sensitive to locality on the wrist than boys (526).

5. Children are more sensitive to heat and locality on the wrist before puberty than after puberty (1074). In colored children (917) there is little difference.

6. Children of the professional and mercantile classes (583) are more sensitive to heat and locality on the skin than children of the laboring classes (252).

<sup>14</sup> See "Juvenile Crime and Reformation." Senate Document No. 532, cited above.

<sup>15</sup> See Senate Document No. 187, cited above.

*V. Children with Abnormalities.*<sup>15</sup>

1. Boys (1582) and girls (662) with abnormalities are inferior in height, sitting height, weight and circumference of head to children in general (16,473).

2. Dull children (2131) are much more defective in hearing than bright children (195).

3. About 10 per cent. of dull (1214), 3 per cent. of average (3375) and 1½ per cent. of bright boys (2899) are unruly; that is, unruliness increases with dullness.

4. Abnormalities in children (2244) are most frequent at dentition and puberty.

5. Defects of speech are three times more frequent in boys than in girls (8520).

*VI. Anthropological Study of Diseases.*<sup>16</sup>

The conclusions given below are based upon a study of 1486 college women. The professor of physical culture and the physician in charge assisted the author.

Those (445) having had no diseases are equal in strength, less in weight, but greater in height and lung capacity than those (707) who had one or more diseases, indicative that strength and weight are not necessarily signs of health.

Those (85) having had constitutional diseases are shorter in stature than those (956) who have had other diseases.

Those (54) having had typhoid fever are superior in lung capacity and strength, but inferior in weight to those (1041) having diseases in general.

The cases of infectious diseases (270) are distinctly superior in weight, lung capacity, height and strength to those (1041) with diseases in general.

Those (89) having had hereditary diseases are inferior in weight to those with diseases in general (1041).

Hereditary cases (89) are distinctly inferior in weight, lung capacity, height and strength to infectious cases (270).

Digestive cases show less weight and lung capacity, but greater height than cases in general (1041).

Cases of heart murmurs (185) have greater weight, lung capacity, height and strength than cases of diseases in general (1041).

<sup>16</sup> See note 10 above.

## SPECIAL POINTS TO BE NOTED IN THE STUDY OF MAN.

In the scientific investigation of man as he is to-day, the rigidity required by the older sciences, as physics and mathematics, cannot be followed, for modern inquiry must depend much upon psychology and sociology, which, as we have seen, are not sciences in the strict sense of the word.

While, as a general rule, the probable truth of a conclusion increases with the number of cases investigated, in certain subjects where there is great regularity and uniformity, the results based upon smaller numbers may be equally probable.

The public must be cautious against applying general conclusions to individual cases, as is sometimes attempted. Thus, children with a larger average circumference of head are as a rule brighter than those with a smaller, but it by no means follows that James with a larger head circumference is brighter than John because John has a smaller circumference of head. For every general truth has many exceptions, and we do not know which are the exceptions. If general conclusions are three fourths true and one fourth false, they are valuable, for they indicate the direction toward which truth is traveling.