THE NATURAL HISTORY OF THE STATE

AN INTRODUCTION TO POLITICAL SCIENCE

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PROFESSOR OF POLITICS IN PRINCETON UNIVERSITY

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PREFACE

There is in general an attitude of reserve on the part of political science with regard to the social and political implications of Darwinian doctrine which is justified by the present state of that doctrine. Although Darwin's theory of the origin of species by transformism is generally accepted, his account of the factors of the process does not meet with general acceptance but is regarded by many critics as being defective on some points. Meanwhile important data have been accumulating in various fields and it is manifest that the doctrine is deeply affecting the ideas of the times. It is impossible to avoid the subject altogether in the study of political science, but it has been a matter of practical difficulty to provide students with a succinct account of the way in

which the doctrine now bears on politics. To meet this difficulty the present work has been produced. Although the treatment is concise, the work makes a detailed survey of connections between biology and politics inferable from the doctrine, with notes and references directing the reader to sources of information on the topics discussed. Hence any class of readers interested in scientific opinion as to social and political origins may find the work useful.

H. J. F.

Princeton University
May, 1915

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CHAPTER I

THE IMPACT OF DARWINISM

§ 1. *Political Implications*

The purpose of this treatise is to examine the foundations of political science from the naturalistic point of view established by the publication of Darwin's *Origin of Species* in 1859. It is a corollary of the Darwinian theory that the State has a natural history. In this regard it does not matter what content of meaning be assigned to the term. Whether it be taken as a general designation covering every form of polity, or whether it has reference only to a particular type of polity, the State, according to this theory, is a phase of development from associations formed among animals of a species included in the subject-matter of natural history. Darwin himself made no attempt to develop this corollary, al-

though he predicted that one result of his theory would be that "much light will be thrown on the origin of man and his history."[1] But Haeckel, who was the first to make a systematic exposition of the theory in all its bearings, expressly included political development. In a survey of the scope of biogeny he noted the following category: *"Cormophyly:* Tribal history of races or of social aggregates composed of persons, families, communities, States, etc."[2]

§ 2. *The Naturalistic Concept*

The concept thus supplied to political science gave promise of fruitfulness. Almost simultaneously with the publication of Darwin's own speculations as to the origin of the mental and moral characteristics of humanity, Bage-

[1] *Origin of Species.* Chapter XV., Sec. 822. The references are to the English edition with numbered sections.

Darwin's doctrine of the origin of species by transformism is generally accepted, but the same can not now be said of his account of the factors involved in the process. For the purpose of the present treatise it is not necessary to go into this branch of the subject. A good account of the state of scientific opinion will be found in Professor Kellogg's *Darwinism To-day.*

[2] *Evolution of Man.* Vol. I., Chap. I., Table 1.

hot made a brilliant application of the doctrine of natural selection in explaining the formation of political structure and the development of polity. The first edition of Darwin's *Descent of Man* was published in 1871. Bagehot's *Physics and Politics* was first published in 1873. Expectations were entertained of steady progress in the scientific elucidation of social and political phenomena. Publication of Spencer's *Principles of Sociology,* accounting for the growth and development of institutions on the principles of evolution, was begun in 1876 and his survey of political institutions was completed in 1882. His *Descriptive Sociology,* begun in 1867, was planned "to supply the student of social science with data standing towards his conclusions in a relation like that in which accounts of the structure and functions of different types of animals stand to the conclusions of the biologist."[3] The work was carried on for fourteen years and eight volumes containing classified data were published, but the laborious achievement has had no noticeable effect in any branch of social science.

[3] Preface to *Descriptive Sociology.* Vol. I.

In 1885 Professor Seeley of Cambridge University proposed a scheme of political science that coordinated it with natural history. The lectures in which he described the scheme were collected after his death by Professor Sidgwick, and published in 1896 under the title *Introduction to Political Science.* Seeley virtually adopted the same methodological concept that Haeckel had indicated. He based political science upon the concept of the State as an organism, the development of institutions being the result of the effort which an organism makes to adapt itself to its environment. Pointing out that in its traditional form political science concerns itself only with the civilized State, excluding the wild and confused associations in which savages and barbarians may seem to live, he condemned such exclusion as unscientific.

> "An inductive method of political science must begin by putting aside as irrelevant the distinction of barbarous and civilized, and by admitting to impartial consideration all societies held together by the principle of government. We must

distinguish and arrange the various kinds of the State in the same purely observant spirit which a Linnaeus brought to plants or a Cuvier to animals. We no longer think of excluding any State because we do not like it, any more than a naturalist would have a right to exclude plants under the contemptuous name of 'weeds,' or animals under the name of 'vermin'."

Referring to the fact that in the animal kingdom the majority of the numerous classifications are assigned to strange organisms in which the vital principle is developed in such a manner that the being has little external resemblance to what is popularly called an animal, Seeley said that if political entities were studied by the same method "It would not be surprising if all the States described by Aristotle, and all the States of Europe into the bargain, should yield but a small proportion of the whole number of varieties, while those States less familiar to us, and which our manuals are apt to pass over in silence as barbarous, yielded a far greater number."[4]

[4] Opus cited, pp. 33, 34.

Notwithstanding this promising start the methodizing of political science upon an objective basis in connection with natural history has halted, and little work has been done in that direction. The naturalistic concept has apparently been abandoned by political science and has been taken over by sociology, the subject-matter of which is not primarily the State but the associational process of which the State is but one among many manifestations. The present tendency in political science is away from the naturalistic standpoint. The suggestions of Darwinism instead of supplying social and political criteria appear to be a source of distraction and perplexity.[5]

§ 3. *Effect on Political Speculation*

Apart from its transient effect upon political science, the impact of Darwinism has had marked effect upon the general tenor of political speculation. In this field the naturalistic concept has been extremely fertile. The concept of society as an organism and of the

[5] G. Lowes Dickinson's brilliant little volume *A Modern Symposium* portrays the situation with comprehensiveness and appreciation.

development of social structure through struggle and conflict was grasped by Marx before Darwin's theory was propounded. In 1859, the year in which the *Origin of Species* was published, Marx issued his *Contribution to the Critique of Political Economy* in which he stated his theory of economic determinism later developed in his treatise on *Capital.* In the preface to the first volume of that work, published in 1867, he said: "The present society is no solid crystal, but is an organism capable of change and is constantly changing," and he declared that the purpose of his treatise was "to lay bare the economic law of motion in modern society." This school of thought accepted Darwin's theory as a biological confirmation of the philosophical basis of Socialism, and it has been vigorously exploited in that respect ever since. There is now a voluminous literature in all the principal countries of Europe expounding Darwinism in accord with schemes of social and political reconstruction, and its influence extends wherever the touch of civilization is felt. The naturalistic concept of human origins is familiar to the literati of

India and Japan and in those countries too social ferments are at work from this cause.

§ 4. *Contrariety of Opinion*

Thus it appears that while the movement to methodize political science according to the naturalistic concept has apparently miscarried, yet that concept has obtained wide acceptance as the basis of political speculation. When the character of this political speculation is considered it appears that incompatible conclusions are reached by trains of reasoning all starting from naturalistic premises. Socialists reach the conclusion that the State should be the universal capitalist and employer. Anarchists reach the conclusion that the State should be abolished altogether. From the writings of Spencer, Huxley, Taine, Marx, Kropotkin, Galton, Nietzsche, Kidd and Hobhouse one might draw the most widely divergent interpretations of the ethical and political significance of Darwinism. Such marked disagreement in conclusions suggests that divergent notions exist as to premises. If some reasoners make one assumption while others

make another assumption, failure to achieve scientific order and precision in exhibiting the social and political implications of Darwinism would follow as a matter of course, and just such failure is manifest. Therefore an inquiry into the bearing of Darwinism upon political science must first determine exactly what Darwinism affirms as to the origin of human species.

CHAPTER II

EVOLUTIONARY PROCESS

§ 5. *Two Modes of Operation*

In *The Origin of Species* Darwin pointed out that modification of structure or instinct in the individual through natural selection may take place either directly or indirectly. The increment of advantage that preserves, extends and perpetuates some variations, and thus gives rise to the multiplication and the succession of species, may take place on lines of individuality or on lines of community. In the latter case the selective process affects individual character through stresses and reactions in the community to which the individual belongs. Darwin was led to make this distinction by consideration of the case of the social insects, which in members of the same species present differences of structure that cannot be

accounted for on the principle of individual advantage. He remarks that this difficulty at first appeared "insuperable and actually fatal to the whole theory."[1]

The difficulty disappeared and the facts came into agreement with the theory when he noted that in such cases the community forms a compound individual and it is this individual whose advantage is promoted by the process of natural selection, the unit life of the community being indirectly affected. Applying this principle of communal advantage he was able to explain the remarkable diversities among insects of the same species. Differentiation of form and function took place because "it had been profitable to the community." "Selection has been applied to the family, and not to the individual, for the sake of gaining a serviceable end."[2] Darwin gives details of the operation of this principle in the case of ants, different individuals of which have markedly different organs, adapted to their particular functions in the service of the community. He

[1] *Origin of Species*, Chap. VIII., Sec. 434.
[2] Ibid. Chap. VIII., Sec. 437.

remarks: "We can see how useful their production may have been to a social community of ants, on the same principle that division of labor is useful to civilized man."[3]

§ 6. *The Human Species*

Whether or not in the formation of the human species the operation of natural selection has been direct or indirect, individual or social, is a point of fundamental importance in scientific appreciation of human nature, but the point is not considered in *The Origin of Species.* Darwin took up this subject in *The Descent of Man,* published in 1871. Close examination of that work shows that he vacillates between two different theories of the origin of the human species, at times imputing it to that indirect operation of the process of natural selection which in this discussion will be designated as social evolution, and at other times imputing it to individual evolution. His work presents an extensive array of evidence in support of the proposition that "Man is the co-descendent with other species of some ancient

[3] Ibid. Chap. VIII., Sec. 443.

lower and extinct form" but he does not express himself with clearness and consistency as to the particular process by which the human species was formed. Therefore to give a fair presentation of his views it is necessary to quote him at some length. In discussing the "Manner of Development of Man from Some Lower Form" he observes:

> "With strictly social animals, natural selection sometimes acts on the individual through the preservation of variations which are beneficial to the community. A community which includes a large number of well endowed individuals increases in number and is victorious over less favored ones; even although each separate member gains no advantage over the others in the same community. Associated insects have thus acquired many remarkable structures, which are of little or no service to the individual, such as pollen collecting apparatus, or the sting of the worker bee, or the great jaws of the soldier ants."

Darwin goes on to say that "with the higher social animals" he is not aware that "any structure has been modified solely for the good of the community, although some are of secondary service to it." But the context indicates that he is here thinking of extensive structure such as he has just mentioned in the case of social insects. He is not referring to intensive structure as in the development of the brain and the nervous system, for he immediately adds: "In regard to certain mental powers the case is wholly different; for these faculties have been chiefly, or even exclusively, gained for the benefit of the community, and the individuals thereof have at the same time gained an advantage indirectly."[4]

§ 7. *Mental and Moral Faculties*

Darwin gives a number of details as to the way in which the incidence of natural selection upon the individual may be modified by communal life. He holds that the germs of the mental and moral faculties of man are traceable in the nature of the lower animals. The

[4] Chap. II., Sec. 94.

difference although immense, as he expressly declares it to be, is of degree and not of kind. Brain, the organ of the mind, has been developed from the corresponding plexus of nerve tissue in the series of animal forms antecedent to the human species. This portion of Darwin's treatise is most important in its political bearings, as he points out that the origins of government are distinctly noticeable among the gregarious animals. "The most common mutual service in the higher animals is to warn one another of danger by means of the united senses of all."[5] He gives various instances of cooperation, government and control. "Bull bisons in North America, when there is danger, drive the cows and calves into the middle of the herd, while they defend the outside." He mentions the case of a troop of baboons attacked by dogs, all escaping safely to the heights save a young one, who stood on a block of rock, loudly calling for aid. One of the largest males, "a true hero," Darwin observes, "ran to the young one's aid and led him out of danger."[6] "All animals living in a body,

[5] Chap. IV., Sec. 160.
[6] Chap. IV., Sec. 161.

which defend themselves or attack their enemies in concert, must indeed be in some degree faithful to one another, and those that follow a leader must be in some degree obedient."[7] Darwin points out that it is impossible to account for the spirit of self-sacrifice on grounds of individual advantage.

> "Man seems often to act impulsively, that is, from instinct or long habit, without any consciousness of pleasure, in the same manner as does probably a bee or ant, when it blindly follows its instincts. Under circumstances of extreme peril, as during a fire, when a man endeavors to save a fellow creature without a moment's hesitation, he can hardly feel pleasure; and still less has he time to reflect on the dissatisfaction which he might subsequently experience if he did not make the attempt. Should he afterward reflect over his own conduct, he would feel that there lies within him an impulsive power widely different from a search after plea-

[7] Chap. IV., Sec. 167.

sure or happiness, and this seems to be the deeply planted social instinct."[8]

In summing up the evidence in the closing portion of the chapter Darwin holds that "the social instincts, which no doubt were acquired by man as by the lower animals for the good of the community,"[9] have operated to develop Man's moral and intellectual faculties. He devotes the fifth chapter to an examination of the steps and means by which the mental and moral faculties of man have been gradually evolved. In this chapter, likewise, his principle of interpretation is social evolution. He observes:

> "It must not be forgotten that although a high standard of morality gives but a slight or no advantage to each individual man and his children over the other men of the same tribe, yet an increase in the number of well endowed men and an advancement in the standard of morality will certainly give an immense advantage

[8] Chap. IV., Sec. 194.
[9] Chap. IV., Sec. 203.

to one tribe over another. A tribe including many members, who, from possessing in a high degree the spirit of patriotism, fidelity, obedience, courage and sympathy, were always ready to aid one another and to sacrifice themselves for the common good, would be victorious over most other tribes, and this would be natural selection."[10]

Man is differentiated from his animal cognates chiefly by interior structure; the mass and complexity of the brain. This implies that the mode of evolutionary process in the case of Man would be such as to develop the brain instead of transforming corporeal structure. Darwin cites with approval Wallace's opinion that "Man, after he had partially acquired those intellectual and moral faculties which distinguish him from the lower animals, would have been but little liable to bodily modifications through natural selection or any other means."[11] Therefore the fundamental biological distinction between Man and other

[10] Chap. V., Sec. 220.
[11] Chap. V., Sec. 208.

Anthropoidea is that in the case of the human species the stress of evolution has been exerted upon internal structure, particularly the brain and nervous system. Darwin recurs to this point in discussing "the great variability of all the external differences between the races of Man." He thinks that this is "owing, it seems, to such variations being of an indifferent nature, and to their having thus escaped the action of natural selection.[12]

Darwin's speculations on the origin of the mental and moral faculties, set forth in the third, fourth and fifth chapters of *The Descent of Man* attribute them to natural selection acting primarily upon the community. In this portion of his work his reasoning comes to this, that the being for whose direct advantage modification took place under the stress of natural selection was the community, so that human nature has been formed by life in community just as the nature of the social bees has been formed by the life of the hive. Man is thus designated as a product of social evolution.

[12] Chap. VII., Sec. 340.

§ 8. *The Individual Hypothesis*

Along with the expressions of opinion that have been cited propounding the doctrine that Man is a product of social evolution, Darwin at times used expressions inconsistent with that doctrine and rather implying that Man is a product of individual evolution. The latter hypothesis makes its appearance chiefly in connection with his consideration of the influence of sexual selection, a factor to which he devotes the greater part of *The Descent of Man.* The operation of that process implies individual competition and struggle, and when his thoughts are running on sexual selection he is apt to adopt the hypothesis of individual evolution in the case of Man. He describes the mating habits of various apes, with the idea of finding in them a picture of the primeval condition of Man. He remarks:

> "Judging from the analogy of the lower animals he would then either live with a single female or be a polygamist. The most powerful and able males would succeed best in obtaining attractive females.

> They would also succeed best in the general struggle for life, and in defending their females, as well as their offspring, from enemies of all kinds."[13]

In considering the effects of civilization, Darwin speaks as if medical science in preserving the lives of the weak and ailing exercised a detrimental influence on the species. He presses the point by analogies drawn from the breeding of domestic animals, thus by implication assuming that individual evolution is the law of human improvement. He refers to the influence of the Church in encouraging a celibate life on the part of "men of gentle nature, those given to meditation or culture of the mind"; and he says that "this could hardly fail to have a deteriorating influence on each successive generation."[14] But elsewhere in the same chapter he remarks that "great lawgivers, the founders of beneficent religions, great philosophers and discoverers in science, aid the progress of mankind in a far higher degree by their works than by leaving a numer-

[13] Chap. XX., Sec. 983.
[14] Chap. V., Sec. 237.

ous progeny."[15] After mentioning various characteristics of civilized life, which would be detrimental to the species on the hypothesis of individual evolution, he remarks:

> "Although civilization thus checks in many ways the action of natural selection, it apparently favors the better development of the body, by means of good food and the freedom from occasional hardship. This may be inferred from civilized men having been found, whenever compared, to be physically stronger than savages."[16]

§ 9. *Darwin's Alternatives*

The divergence of the conclusions reached by Darwin as to the genesis of the human species appears distinctly when opinions expressed in various portions of *The Descent of Man* are brought together as in the following parallel columns:

[15] Chap. V., Sec. 229.
[16] Chap. V., Sec. 227.

Social Hypothesis

Man originated as a social animal, belonging to the Simian stock. "But we must not fall into the error of supposing that the early progenitor of the whole Simian stock, including Man, was identified with or even closely resembled any existing form of ape or monkey."[17]

While it is not known that Man is descended from some small species "we should, however, bear in mind that an animal possessing great size, strength, and ferocity, and which like the gorilla, would defend itself from all enemies would not perhaps have become social, and this would most effectually have checked the acquirement of the higher mental qualities, such as sympathy and love for his fellows."[18]

Individual Hypothesis

Man is descended from some ape-like creature, so that his aboriginal habits were probably like those of existing Quadrumana, "more particularly of those which come nearest to man."[19]

"The most probable view is that he aboriginally lived in small communities, each with a single wife, or if powerful with several, whom he jealously guarded against other men. Or he may not have been a social animal and yet have lived with several wives, like the gorilla."[20]

[17] Chap. VI., Sec. 262.
[18] Chap. II., Sec. 96.
[19] Chap. XX., Sec. 975.
[20] Chap. XX., Sec. 976.

In each hypothesis Darwin incidentally refers to the gorilla, and the varying estimate made of its relationship to the human species is a mark of the incompatibility of the two hypotheses. In one the gorilla is rejected as a possible prototype of the ancestor of the human species; in the other a gorilla-like animal is accepted as a possible prototype.

It may excite surprise that a reasoner so learned and so candid as Darwin should have involved himself in such inconsistency, but this surprise will disappear when the nature of his task is considered. When Darwin wrote *The Origin of Species,* the traditional opinion was that species was created as such. Classification adhered to the system introduced by Linnaeus, who laid down the principle: "We reckon just as many species as there were forms created in the beginning." Darwin proposed the theory of the formation of species by modification of antecedent forms of life through selective process. In dealing with particular cases his concern was to show that in one way or another they could be accounted for in agreement with his theory. In dealing

with the case of the human species this consideration presided over his treatment of the subject and bounded his efforts. In considering different aspects of the problem of human origins he at times resorted to one hypothesis and at other times to a different hypothesis. His mode of treatment did not raise the question whether the one hypothesis did not exclude the other. Thus it appears that Darwin at times shifted his premises and fell into inconsistency. He left unsettled the precise nature of the process of evolution that went on in the case of the human species, and in so doing failed to state just what concept natural history may supply to political science. That matter must be determined before it can be affirmed that natural history can supply any principle to political science to systematize its theory and to guide its practice. Therefore it becomes necessary to inquire what light has been thrown upon the problem by research and speculation since Darwin propounded his theory.

CHAPTER III

BIOLOGICAL DATA

§ 10. *The Genealogy of Man*

Darwin traced the ancestral form of Man back through "some ancient member of the anthropomorphous sub-group" now represented by the gorilla, chimpanzee, orang and gibbon; thence to the Catarrhine or Old World division of the monkey, and thence back to the lemurs, "and these in their turn from forms standing very low in the mammalian series." Darwin admitted the existence of a "great break in the organic chain between Man and his nearest allies, which cannot be bridged over by any extinct or living species," but he pointed out that "in all the vertebrate classes the discovery of fossil remains has been a slow and fortuitous process" and he remarked that "those regions which are the most likely to af-

ford remains connecting Man with some extinct apelike creature have not as yet been searched by geologists."[1]

These observations gave support to the notion of the existence in the past of some form intermediate between Man and the anthropoid apes that became popularly known as "the missing link." Expectation of the discovery of this missing link was generally entertained by the adherents of Darwinism. In Haeckel's *Evolution of Man,* first published in 1874, a graphic representation of the pedigree of Man is given in which the various genera of the animal kingdom are portrayed as ramifications from a biological stem typifying the generalized type. The apex is assigned to Man, represented as one of a group of twigs sprouting from the ape stem, the cluster including the gorilla, chimpanzee, orang and gibbon.[2] This concept long presided over research, with respect not only to Man but also to species in general. But as paleontological evidence accumulated it did not bear out Darwin's antici-

[1] Chap. VI., Secs. 260, 267, 265, 266.
[2] Opus cited, Vol. II., p. 188, Plate XV.

pation of generalized types to which existing species converge in their ancestry.

In assigning to the Catarrhine group of monkeys the ancestral form from which Man was derived, Darwin remarked that "every naturalist who believes in the principle of evolution" will grant that "the Catarrhine and Platyrrhine monkeys, with their sub-groups, have all proceeded from some one extremely ancient progenitor." He predicted that "the early descendents of this progenitor, before they had diverged to any considerable extent from each other, would still have formed a single natural group; but some of the species or incipient genera would have already begun to indicate by their diverging characters the future distinctive marks of the Catarrhine and Platyrrhine divisions."[3] No confirmation of this anticipation has been obtained. The volume *Mammalia,* in the Cambridge Natural History series, remarks that "not only are these two groups absolutely distinct at the present day but they have been, so far as we know, for a very long time, since no fossil re-

[3] Opus cited, Sec. 261.

mains of monkeys at all intermediate have been so far discovered. This has led to the suggestion that the monkeys are what is termed diphyletic, i.e., that they have originated from two separate stocks of ancestors."[4] The case of the monkeys is not peculiar in disappointing expectation of generalized types from which existing forms have ramified. Professor H. F. Osborn remarks: "By far the most striking generalization of recent mammalian paleontology is the early separation, absolute distinctness and great age of numerous phyla leading up to modern types."[5] Instead of such a picture as was given by Haeckel, a graphic representation of the present concept of biogenic process would resemble a pollard rather than a branching tree, many parallel stems arising from the primitive mammalian stock.

§ 11. *New Theories Advanced*

Evidence of this character has modified opinions as to the genealogy of the human

[4] Opus cited, p. 555.

[5] *Bulletin,* American Museum of Natural History, Vol. XIII., Art. 19, Dec. 11, 1900.

species, and theories have been advanced to the effect that Man has developed parallel to the monkeys but without connection in descent. A summary of the state of scientific opinion on this subject was prepared by Professor G. Schwalbe of the University of Strassburg for the Cambridge University memorial volume *Darwin and Modern Science,* published in 1909. Prof. Schwalbe says:

> "The hypotheses as to descent current at the present day may be divided into two main groups. The first group seeks for the roots of the human race not among any of the families of the apes . . . but lower down among the fossil Eocene Pseudo-lemuridae or Lemuridae, or even among the primitive pentadactylous Eocene forms, which may either have led directly to the evolution of Man, or have given rise to an ancestral form common to apes and men."[6]

The other main group, to which Professor Schwalbe himself adheres, regards the genetic

[6] Opus cited, p. 133.

order set forth in *The Descent of Man* as still valid today, but there are marked differences of opinion upon points of classification within the bounds of this scheme. The fossil anthropoid discovered in Java and designated Pithecanthropos "is regarded by some authorities as the direct ancestor of Man, by others as a side track failure in the attempt at the evolution of Man."[7]

A comprehensive survey is made in *Man and His Forerunners* by Professor H. v. Buttel-Reepen, originally published in 1911. It was translated from the German in 1913 by Professor A. G. Thacker, in a revised edition which incorporated an account of relics of prehistoric man discovered in December, 1912. This work, which is expository in character and does not advocate a theory, shows that as the paleontological evidence is enlarged the difficulty of arranging the known forms in serial order is increased. Professor Thacker sums up the case by remarking that recent researches have brought out in a striking manner the important fact that in the remote past there ex-

[7] Ibid. p. 135.

isted not one kind of Man but several very distinct kinds, just as there are half a dozen diverse sorts of apes living at the present day. That is to say, no generalized type of ape-man has been discovered, but on the contrary several distinct phyla. It has become a moot point whether the term "Man" is really applicable to the remains designated as proto-human. Thacker says: "It now seems almost certain that the oldest stone implements antedate by long ages the appearance of any being we should have greeted as human if we had met him in the flesh," and he remarks that it may become necessary eventually to revise our terminology and restrict the term "Man" to the living species.[8]

The tendency noted by Schwalbe in 1909, to seek the roots of the human species quite apart from any of the existing apes but lower down in forms from which both Man and the apes were separately evolved, has been enhanced as more evidence becomes available. Upon the basis of this supposition Professor Klaatsch has put forth an elaborate theory of separate

[8] Opus cited, p. vii.

derivation in the case of the divergent types found in fossil remains, the existing anthropoid apes and the races of mankind, from a stock of common progenitors of apes and men; and this stock he designates Propithecanthropi. The animals of this hypothetical genus in "the proportions of the different parts of their bodies and in the character of their teeth resembled human beings; not the anthropoid apes.[9] This genus sent out offshoots in various directions and into different environments, giving rise to the existing species of men and apes, and also the extinct species known to paleontology. According to this theory the anthropoid apes are to be regarded as aberrant or degenerative branches of the prehuman stock. Meanwhile a more favored branch of the primeval stem was quietly evolving upward into mankind, retaining in the process many of the primitive characters."[10] Klaatsch's theory has been severely criticized.[11] That part of his theory which regards the an-

[9] *Man and His Forerunners*, p. 72.

[10] *Man and His Forerunners*, p. 75.

[11] A survey of the discussion aroused by it is contained in W. L. H. Duckworth's *Prehistoric Man*, pp. 135-139.

thropoid apes as belonging to parallel phyla and not to the same genetic series as Man is admitted to have some weighty evidence in its favor. Although Duckworth characterizes the theory in its present form as "crude" he admits the possibility that "the diphyletic scheme of Professor Klaatsch may yet be modified to such an extent as to receive support denied to it in its present form."[12]

§ 12. *The Evidence of Embryology*

Data of marked evidential value in this regard are supplied by comparative embryology. Buttel-Reepen remarks: "If it be true that the apes are descended in the manner explained from creatures which were nearly human, we shall expect to find that the young apes are more manlike than the adult individuals, since it is well known to geologists that the individual in its development always tends to recapitulate the evolution of the race to which it belongs thus passing through ancestral phases."[13] It is a demonstrated fact that the

[12] *Prehistoric Man*, 1912, p. 138-9.
[13] *Man and His Forerunners*, pp. 76-7.

young gorilla's skull is far more humanlike in its contour than the adult type. At the time Darwin wrote little was known of the embryological history of the anthropoid apes. Since then embryos belonging to different simian groups have been obtained and studied. A convenient summary of the results is given in the third chapter of Metchnikoff's *Nature of Man.* At an early stage of development there is a general resemblance between the embryo of the anthropoid ape and the human embryo. "Later on the characters that distinguish Man from even the highest of the apes become more and more pronounced. In the anthropoids the facial portion becomes more and more prominent and betrays a bestiality absent from the human form." Metchnikoff holds that while the evidence is in favor of a common origin, "the data derived from embryology do not point to any one of the existing genera of monkeys as the ancestor of Man. They lead us to infer, rather, that Man and the anthropoid apes had a common origin."[14]

The notion was once extant that it was nec-

[14] *The Nature of Man,* p. 48.

essary to account for the disappearance in man of the protruding muzzle, the elongated fore limbs and other characteristics of the anthropoid ape. But the evidence just considered suggests that men never possessed such characteristics. Hartmann, in his *Anthropoid Apes,* although adhering to the theory of close genetic affinity, remarks that "the points of resemblance to the human type are fewer" in the case of an old than of a young animal. He says that "this is an important fact, since in the case of Man we almost without exception regard the fully developed male adult as the typical form."[15]

§ 13. *Effect of Brain Development*

The conclusion to which those observations point is that the resemblance between Man and the apes is mainly due to the fact that both have preserved the primitive type of mammalian organization, an animal with five digits on each limb. That pattern was retained by the entire order of Primates and in the case of the anthropoid apes has been carried to stages of

[15] Opus cited, pp. 11, 293.

physical development which from the standpoint of animal competency are beyond those attained by Man. In the case of Man the development of bodily structure was subordinated to mental development, the effect of which, according to both Darwin and Wallace, is to make Man but little liable to bodily modifications through natural selection or other means. It follows that the parallelism that remains does not indicate corresponding resemblance between Man and the apes in character. They have really widely diverged, chiefly by an extensive divergence from the ancestral type on the part of the apes, chiefly by an intensive divergence on the part of Man.[16]

Wallace, co-propounder with Darwin of the theory of natural selection, goes over the whole ground in his essay on *Monkeys: Their Affinities and Distribution.* He points out that "monkeys as a whole form a very isolated

[16] Although the resemblance between Man and the apes extends throughout the entire structural plan it is constantly attended by difference in detail. A minute comparison of all bodily organs is made in *The Human Species* by Ludwig Hopf. He remarks (p. 95) that "the experienced anatomist can immediately distinguish any anthropoid muscle from its corresponding human muscle."

group, having no near relations to any other mammalia. This is undoubtedly an evidence of great antiquity." They must have "branched off the great mammalian stock at a very remote epoch, certainly as far back as the Secondary period." At this period they were perhaps not separable from the ancestral marsupials. "It is only among marsupials that we again find handlike feet with opposable thumbs, which are such a curious and constant feature of the monkey tribe."

Wallace remarks that "this relationship to the lowest of the mammalian tribes seems inconsistent with the place usually accorded to these animals at the head of the entire mammalian series," and he suggests that it is due merely to the fact that this lowly mammalian pattern was that which was utilized in the formation of the human species. A scientific observer not predisposed in favor of the human form as a standard would hardly place the monkeys so high as we do.

> "Neither in size, strength nor beauty would they compare with many other

forms, while in intelligence they would not surpass even if they equalled the horse, the elephant or the beaver. . . . Man is undoubtedly the most perfect of all animals, but he is solely in respect of characters in which he *differs* from all the monkey tribe—the easily erect posture, the perfect freedom of the hands from all part in locomotion, the large size and complete opposability of the thumb, and the well developed brain, which enables him fully to utilize these combined physical advantages."[17]

§ 14. *Antiquity of Man*

There now seems to be substantial agreement between specialists as to the extreme antiquity of the human race. Haeckel, in his *Wonders of Life,* published in 1905, held that the development of the brain which chiefly differentiates Man from the apes took place during the Tertiary period, the duration of which is estimated by many recent geologists

[17] *Studies Scientific and Social,* Vol. I., p. 146.

at from twelve to fifteen (at least three to five) million years.[18] Wallace points out:

> "Man is related not to any one, but almost equally to many of the existing apes—to the orang, the chimpanzee, the gorilla and even to the gibbon, in a variety of ways; and these relations and differences are so numerous and diverse that, on the theory of evolution, the ancestral form which ultimately developed into Man must have diverged from the common stock whence all these various forms and their extinct allies originated. But so far back as the Miocene deposits of Europe, we find the remains of apes allied to these various forms, and especially to the gibbons; so that in all probability the special line of variation that led up to man branched off at a still earlier period."[19]

Wallace holds that on this theory of his origin Man must have existed in something approaching his present form during the Tertiary period. We must then go back many millions

[18] Opus cited, p. 22.

[19] *Natural Selection and Tropical Nature*, p. 422.

of years for the hypothetical ancestral form from which Man and apes were derived. This extremely remote relationship is all that is left to warrant the suggestion made by Darwin in the Individual Hypothesis that the habits of the anthropoid apes represents the aboriginal habits of the human species.

§ 15. *Variety of Animal Behavior*

Behavior varies greatly even among animals of closely applied species, such as the chimpanzee and the gorilla. "In mental characteristics there is the widest difference. The chimpanzee is described as lively, teachable and tamable; the gorilla is gloomy, ferocious and quite untamable."[20] According to Hartmann the chimpanzee either lives in separate families or in small groups of families. The gorilla goes about in families with but one adult male, who fights for his position as leader of the band. If a young male reaches maturity "a conflict for the mastery takes place, and after his rival is killed or driven away the stronger animal becomes head of the com-

[20] *Mammalia,* pp. 573, 575.

munity."[21] The gibbons, which have some physical characteristics in which they approximate human structure more closely than the other anthropoids, include species which are markedly gregarious. The siamang go in troops led by a powerful old male. The hulock has been seen in troops of from 100 to 150 together, and their combined onset makes them formidable. The family Cercopithecidae, which include the Gibraltar apes and the baboons, is gregarious. In 1893 the governor of Gibraltar counted as many as thirty apes in one herd. There are eleven species of baboons, all of which go in large herds. Among the lemurs some species are very sociable, "traveling in large companies," while others "lead a solitary life or go about in pairs."[22]

Sociability is highly developed in many branches of the mammalia. Kropotkin, in his *Mutual Aid—A Factor of Evolution,* presents an impressive array of evidence on this point. He holds that sociability is the dominant factor of mammalian life. The extent to which sys-

[21] *Anthropoid Apes,* pp. 237, 232.
[22] *Mammalia,* pp. 564, 539.

tematic cooperation among mammals may be carried is illustrated by the beaver colonies. This species forms communal dwellings of large size, the construction of which is accompanied by notable engineering feats. The Smithsonian Institution report for 1900 mentions the case of a beaver colony which built a dam containing probably more than thirty tons of material. The social habits of the prairie dog are well known, from the abundance of its burrows in our Western prairies. The vizacha, a South American rodent, has an intensely sociable nature. This animal is described as living in societies of twenty to thirty members in a village of a dozen or so of burrows which intercommunicate. It has a most varied voice, and it is doubtful whether there is "any other four footed beast so loquacious or with a dialect so extensive." These animals "are very friendly and pay visits from village to village; they will attempt to rescue their friends if attacked by a weasel or peccary, and to disinter those covered up in their burrows by man."[23]

[23] Ibid. p. 497.

It therefore appears that unless the ancestral form of the human species was gregarious in habit it lacked what in general is a mammalian characteristic. From the fact that the gorilla is unsocial Kropotkin regards it as a decadent type. He remarks that "sociability, action in common, mutual protection, and a high development of these feelings which are the necessary outcome of social life are characteristic of most monkeys and apes." "And if we find among the highest apes two species, the orang-outang and the gorilla, which are not sociable, we must remember that both, limited as they are to very small areas, the one in the heat of Africa, and the other in the islands of Borneo and Sumatra, have all the appearance of being the last remnants of formerly much more numerous species."[24]

§ 16. *Man A Social Animal*

Thompson and Geddess remark that "the anthropoid apes are not social, but many monkeys are, and there can be little doubt that Man was from the first distinctively social.

[24] *Mutual Aid*, pp. 50-52.

'Man did not make society; society made Man'."[25]

It is an undisputed fact that although marked physiological variation has taken place in human species, everywhere and always Man is found to be a social animal. At a remote period in geologic time Man had spread to every part of the earth, and was settled in all the continents when land areas were very different from what they are now. The accepted theory is that America was peopled from Asia at a time when the northern extremities of those continents were connected by what American geologists have designated as the "Miocene Bridge." Behring's Strait has been formed since the Tertiary period. Man was settled in the New World before the Glacial Epoch, carrying with him organic proclivities implanted before that epoch. He spread throughout the American continents, undergoing physiological variation during the process in adaptation to extremely diverse conditions, but in all places and in all circumstances life in community appears as a charac-

[25] *Evolution,* in Home University series, p. 100.

teristic. A like order of evidence is afforded by Australia, the aborigines of which are regarded as an archaic species sequestered by geologic changes that detached the land from connection with the continental areas of the Eastern Hemisphere. To this circumstance is attributed the preservation in Australia of archaic fauna and flora superseded elsewhere by more advanced forms. The Australian aborigines are regarded by the specialists as survivals of the type once represented in Europe by races designated by anthropologists as paleolithic.[26] In this region, which from the biological point of view may be regarded as a section of geologic antiquity accidentally preserved to modern times, life in community is a universal characteristic.

Without attaching to this circumstance any more significance than would be attached to any other anatomical or physiological characteristic, the evidence points to deeply implanted sociality as a primeval characteristic of Man. However anciently separated and

[26] Cf. E. B. Tylor, *The Paleolithic Period in Australia and Tasmania*, Journal of the Anthropological Institute, Vol. 28, 1899; p. 275.

widely distributed are different races and varieties of the human species, yet they possess life in community as a common characteristic; so by parity of reasoning with that accepted as valid by Darwinists in generalizing from morphological data, the parent stock possessed that characteristic.

§ 17. *Instances of Social Evolution*

The hypothesis that the line of variation upon which the human species was formed was through the introduction of life in community as a characteristic of an early mammalian species does not involve the assumption of a mode of evolution peculiar to Man. Community ranging from loose association to closely articulated polity is displayed by numerous species. Darwin gave an impressive array of evidence on this subject in the fourth chapter of *The Descent of Man.* There is no antecedent improbability in the supposition that community may become so regular, constant and habitual as to form the associate life into an aggregate on which the evolutionary process acts primarily, and only indirectly on the indi-

vidual units as parts of the composite entity. The classifications of zoology supply numerous cases of this mode of evolution, familiar instances of which are the corals and the sponges. Attention has already been called to the social insects instanced by Darwin. It is known that in their case the very thing happened which the data now under consideration suggest in the case of the human species, namely, the early differentiation of social and non-social species. The physiological differentiation of the Anthropomorpha, taken into consideration with their present geographical distribution, suggests that a similar divergence in evolutionary process took place in this order also. The Tertiary period was one of abounding energy in the development of forms of mammalian life.[27] A point of marked agreement among the specialists is that Man, gorillas, chimpanzees, orangs and gibbons are relics of a Tertiary order of wide distribution and numerous species. The few species that survived through individual adaptation to the environment are now restricted to narrow habitats in the

[27] *Mammalia*, p. 4.

tropics. The sole species that has meanwhile increased and multiplied and has spread to every part of the world, surmounting difficulties before which all cognate forms declined or retreated, has life in community as a universal characteristic, indicating that the species has been formed by development along that line; that is to say, by social evolution.

§ 18. *Biological Summary*

Summing up the results of this examination of biological data, it must be said that they do not cast much light upon the problem under consideration. In general the Individual Hypothesis seems to occupy the background of thought in the minds of biologists, suggesting research and influencing conclusions. The views of the late Dr. Ameghino, a paleontologist of Argentina, form a striking exception. In 1891 he reported the discovery in Patagonia of fossil remains of monkeys exhibiting protohuman characteristics. From his investigations he inferred the existence in the Eocene period of a species that he named Homunculidae, which he held to have closer genetic affin-

ity to Man than to the apes. The animals were small creatures, not more than twenty inches high. Ameghino's theory seems to have been regarded as rather a freak of opinion not entitled to much consideration. But upon the Social Hypothesis, Darwin himself held that Man is probably descended from some small species.[28] The mere fact that Ameghino's Homunculus was such a small animal does not rule it out of consideration. As Professor Kellogg points out in explaining Ameghino's views, "the horse began likewise in lower Tertiary as a little four-and-three-toed animal no larger than a cat."[29] Indeed, small size is a characteristic of mammalian beginnings. "The earliest undoubted mammals were small creatures, comparable to a rat or a mouse in size.[30] There is satisfactory evidence of the existence of Man toward the close of the Glacial Epoch. Relics of his arts and crafts abound in

[28] *Descent of Man*, Sec. 96.

[29] *Beyond War*, by Vernon L. Kellogg, 1912, p. 38. This handy little book gives an account in clear, untechnical language of the present state of scientific knowledge as to the genesis of the human species.

[30] *Mammalia*, p. 91.

our museums. But beyond that the data are scanty, the interpretation of them is dubious, and the specialists disagree sharply among themselves. The evidence is not broad and solid enough to warrant any decision in favor of either the Social or the Individual Hypothesis.

CHAPTER IV

PSYCHOLOGICAL DATA

§ 19. *Darwin On Mental Powers*

Darwin makes a comparison of the mental powers of Man and the lower animals leading to the conclusion that the difference, great as it is, is only a matter of degree. He says that we must admit that "there is a much wider interval in mental power between one of the lowest fishes, as a lamprey or lancelet, and one of the higher apes, than between an ape and Man."[1] He contends that "there is no fundamental difference between Man and the higher mammals in their mental faculties."[2] He attributes to animals curiosity, imitation, attention, memory and even reason. "Only a few persons now dispute that animals possess such power of

[1] Chap. III., Sec. 98.
[2] Chap. III., Sec. 100.

reasoning."[3] He remarks that "the wonderfully diversified instincts, mental powers and affections of ants are notorious," and that "under this point of view the brain of an ant is one of the most marvelous atoms of matter in the world, perhaps more so than the brain of Man."[4]

Darwin gives a collection of instances to show that the higher animals are able to reason in some degree, but he adds that "the mental powers in some early progenitor of Man must have been more highly developed than in any existing ape, before even the most imperfect form of speech could have come into use."[5] He frankly admits that he cannot tell how this higher development was effected that was necessary to bring the proto-human stock up to the possibility of speech, save that it must have been due to conditions under which "the power of communication had to be improved."[6]

[3] Chap. III., Sec. 119.
[4] Chap. II., Sec. 83.
[5] Chap. III., Sec. 141.
[6] Chap. III., Sec. 143.

§ 20. *Romanes on Mental Evolution*

Darwin's views of psychological origins were developed by his friend Romanes in two works entitled *Mental Evolution in Animals* and *Mental Evolution in Man,* published respectively in 1885 and 1888. In 1909, they were mentioned by Haeckel as still constituting the most complete exposition of this branch of Darwin's theory.[7] But Romanes adopts the Social Hypothesis. He remarks:

> "The existing species of anthropoid apes are very few in number, and appear to be all on the high road to extinction. . . . It is certain that none of these existing species could have been the progenitor of Man; and lastly, it is equally certain that the extinct species (or genus) which did give origin to Man must have differed in several important respects from any of its existing allies. In the first place, it must have been more social in habits . . . or, to state these prelimi-

[7] Article in Cambridge Memorial Volume, *Darwin and Modern Science.*

nary considerations in a converse form, when it is assumed that because the few existing and expiring species of anthropoid apes are unsocial and comparatively silent, therefore the simian ancestors of Man must have been so, it is enough to point to the variability of both these habits among certain allied genera of monkeys and baboons, in order at the same time to dispose of the assumption, and to indicate the probable reasons why one genus of ape gradually became evolved into Homo, while all allied genera became, or are still becoming, extinct."[8]

Romanes builds a bridge of hypothesis over the chasm between animal and human intelligence, "starting from the highly intelligent and social species of anthropoid ape as pictured by Darwin."[9] The chasm is, narrowed as much as possible by argument to the effect that animal intelligence in its highest range approaches the conceptual thinking admitted to be peculiar to human intelligence. Romanes, like Dar-

[8] *Mental Evolution in Man,* p. 365.
[9] Ibid., p. 377.

win, lays stress upon ant intelligence. He remarks that "the known facts of human psychology furnish the best available pattern of the probable facts of insect psychology."[10] He pictures the pre-human species living in communities, tending to intellectual advance "as natural selection laid a greater and greater premium on intelligent cooperation, as in the case of the social insects."[11]

§ 21. *Animal Psychology*

Romanes's views as to the scope of animal intelligence have been controverted by psychologists who have applied scientific tests to animal behavior. Professor Watson of Johns Hopkins University remarks that "the older investigators of animal intelligence (Romanes and a host of others) sat in their offices and received letters from all parts of the country telling of some brilliant trick of a pet animal that could be explained upon no other ground than reason."[12] But when exact and syste-

[10] *Mental Evolution in Animals*, p. 341.
[11] *Mental Evolution in Man*, p. 371.
[12] *Animal Education*, the University of Chicago Press, 1903.

matic investigation was applied to animal behavior such evidence broke down.

The marked change that has taken place in scientific opinion on such matters since Darwin's time is impressively exhibited by the monographs of Professor Thorndike of Columbia University, issue of which began in 1898. Professor Thorndike made a series of experiments on cats, dogs and chicks, chiefly by putting them in enclosures from which they could get out by some simple act. In addition he collected information as to the methods of animal trainers. Professor Thorndike found that so-called feats of animal intelligence "can all be explained by the ordinary associative processes without aid from abstract, conceptual, inferential thinking."[13]

> "The unit of their consciousness, apart from impulse and emotions, is a whole association series. Such a soil cannot grow general ideas, for the ideas, so long as they never show themselves except for a particular practical business, will not be

[13] *Animal Intelligence*, p. 20.

thought about or realized in their nature or connections. . . . Language will be a factor in the isolation of ideas and a help to their realization. But when any one says that language has been the cause of the change from brute to Man, when one talks as if nothing but it were needed to turn animal consciousness into human, he is speaking as foolishly as one who should say that a proboscis added to a cow would make it an elephant."[14]

In conclusion Professor Thorndike declares: "Man is not an animal plus reason. Even after leaving reason out of account there are tremendous differences between man and the higher animals. The problem of comparative psychology is not only to get human reason from some lower faculties, but to get human association from animal association."[15]

Thorndike reached a similar conclusion from experiments on monkeys. He found that "in their method of learning monkeys do not advance far beyond a generalized mam-

[14] Opus cited, p. 122.
[15] Opus cited, p. 127.

malian type, but in their proficiency of method they do. They seem at least to form associations very much faster and they form very many more."[16] The power of imitation traditionally ascribed to monkeys was not exhibited under scientific tests, but the activity of monkeys is such that in the many things done in quick succession an example may be paralleled in a way that looks like imitation.

Professor Watson tested Thorndike's conclusions by an independent system of experiments so contrived as to make a powerful appeal to any power of imitation possessed by monkeys. He reached conclusions which "exactly harmonize with those of Thorndike" as to the lack of power of imitation in monkeys.[17]

Watson has an interesting chapter on trained animals, in which he describes feats, performed by famous educated horses, dogs and a chimpanzee, that looked like the operations of reason. The evidence thereof does not suffice to prove this, but Watson holds that the results show that "the sympathetic upbringing

[16] Opus cited, p. 239.
[17] *Behavior*, p. 284.

of animals in the home where they are thrown into constant contact with human beings produces in them a certain complex of behavior for which the laboratory concepts, as they now exist, are inadequate to supply explanation."[18] This class of data therefore affords impressive evidence of the effect of social stimuli upon individual faculty in animals. But Watson goes on to say that "the search for reasoning, imagery, etc., in animals must forever remain futile, since such processes are dependent upon language or upon a set of similarly functioning bodily habits put on after language habits."[19] Watson holds that this matter of language habits accounts for the popular and the scientific feeling that a break exists between man and animal. "The lack of language habits forever differentiates brute from man."[20]

The profound difference found actually to exist between animal intelligence and human intelligence is the more impressive because of the expectation that evidence of genetic affinity

[18] Opus cited, p. 316.
[19] Opus cited, p. 334.
[20] Opus cited, p. 331.

would be forthcoming. Washburn's *Animal Mind,* a textbook of comparative psychology published in 1908, reviews the evidence for and against ideas in animals, and concludes that "it is not easy to prove the possession by any animal of memory in the sense of having ideas of distant objects." But after showing that what looks like feats of memory may be resolved into trains of association not involving ideation, the author remarks that "it is not likely that any such gulf separates the human mind from that of the higher animals as would be involved in the absence from the latter of all images of past experiences."[21] And yet with this assumption to preside over research scientific evidence in support of it has not been obtained.

The work of American psychologists seems to mark the extreme reach of opinion adverse to Romanes's estimates of animal intelligence. Less remote opinion seems to be held by English psychologists, but they too greatly reduce his valuation. C. Lloyd Morgan, in his *Animal Life and Intelligence,* rather inclined to

[21] Opus cited, pp. 270-273.

the views of Romanes to whom he says he owes much. He subsequently modified his opinions, and in his *Introduction to Comparative Psychology* he reached the conclusion that "the evidence now before us is not, in my opinion, sufficient to justify the hypothesis that any animals have reached that stage of mental evolution at which they are even incipiently rational."[22]

L. T. Hobhouse in his *Mind in Evolution* criticized Thorndike's conclusions, contrasting them with experimental results obtained by himself. Hobhouse concluded that "animal intelligence at its highest point of development effects a correlation between perceptual and practical relations." He remarks: "As applied to apes, this conclusion appears very probable indeed; and as applied to some other mammals, it is, I think, better provisional hypothesis than any other I know."[23] Hobhouse agrees with Romanes in holding that the road to intellectual advancement was by way of social life, and upon this point there seems to be substantial agreement among psychologists.

[22] Opus cited, p. 377.
[23] Opus cited, p. 269.

§ 22. *Qualitative Difference in Intelligence*

Along with the increasing emphasis upon the quantitative difference between animal and human intelligence there is increasing recognition of qualitative difference, and in some cases at least this is not on the side of human superiority. Professor Watson informs me that his own experiments with animals sustain the conclusions reached by Professor Thorndike in his memorable monograph of 1898 on *Animal Intelligence,* with the further conclusion that animals may have a range of sense perceptions different from that of Man, or may have sense perceptions of an order different from any possessed by Man. His experiments with terns and homing pigeons indicate that these birds have a direction sense not dependent upon either hearing, smell or vision, and hardly to be accounted for by any sense recognized as such in our own consciousness.[24]

[24] Publication No. 103, Carnegie Institution of Washington, pp. 187-225, contains an account of Professor Watson's observations on terns. An account of his experiments with homing pigeons is given in *Harper's Magazine* for October, 1909, and February, 1910.

This possibility was pointed out by a pioneer investigator in this field, Sir John Lubbock, now Lord Avebury. He remarked:

> "We have five senses, and sometimes fancy that no others are possible. But it is obvious that we cannot measure the infinite by our own narrow limitations. Moreover, looking at the question from the other side we find in animals complex organs of sense, richly supplied with nerves, but the function of which we are as yet powerless to explain. There may be fifty other senses as different from ours as sound is from sight; and even within the boundaries of our own senses there may be endless sounds which we cannot hear, and colors, as different as red from green, of which we have no conception. These and a thousand other questions remain for solution. The familiar world, which surrounds us, may be a totally different place to other animals."[25]

Comparative psychologists are now introducing terms to designate sense organs pecul-

[25] *Senses, Instincts and Intelligence of Animals*, p. 193.

iar to animals. In contributions to periodical literature in this field such expressions appear as "chemotactic," "photo-reception," "chemo-reception," the "topochemical or contact-odor sense," etc. Thus animals may be far richer in sensations than the human species, although lacking in ideas. They may have ample satisfactions while destitute of self-consciousness. The state of the animal mind is likened by Professor Thorndike to the diffused awareness which we sometimes experience without thought, as when swimming. "One feels the water, the sky, the birds above, but with no thoughts about them or memories how they looked at other times, or aesthetic judgments about their beauty; one feels no ideas about what movements he will make, but feels himself make them, feels his body throughout."[26]

§ 23. *Ant Intelligence*

The mental powers of ants which Darwin referred to as perhaps more marvelous than those of Man have been the subject of close study by numerous observers. A comprehen-

[26] *Animal Intelligence*, p. 123.

sive monograph on these interesting insects has been issued by Professor W. M. Wheeler of Harvard. The wonderful social and economic development of ant life is impressively set forth, and the evidence in regard to ant psychology is examined in detail, but Professor Wheeler is unable to find any satisfactory indication of the existence of reasoning power in ants.[27] It is not doubted that ants have means of communicating with one another. Professor Wheeler says that "one is in very imminent danger of falling into gross anthropomorphisms in interpreting these various movements, but they are so clearly associated with certain needs in the lives of ants and, moreover, meet with such uniform response from other members of the colony, that they come to have the same significance to the observer as the characteristic attitudes and cries, or what have been called 'the expressions of the emotions' in our domestic animals." The signs or signals by which ants convey impressions from one to another are not "rational

[27] *Ants: Their Structure, Development, and Behavior*, p. 540. et seq.

signs like those of language and mathematics."[28]

The case of the ants was adduced by Darwin as a typical instance of the indirect stress of natural selection which in this discussion has been designated as social evolution. Professor Wheeler remarks that "ants and mammals seem to make their appearance simultaneously in Mesozoic times." The formation of social species was an early and not a late phase of evolution in this animal order. Among the ants of the Tertiary period "the male, female and worker phases were as sharply differentiated as today." "All writers agree in ascribing polymorphism to a physiological division of labor among originally similar organisms." The formation of the community was a condition precedent to the differentiation of its units. Professor Wheeler compares the different castes in the ant community to the different tissues of a living body, implying that the ant community is an organism.[29]

[28] Opus cited, p. 536.
[29] Opus cited, pp. 4, 161, 118, 7.

§ 24. *Reaction against Biological Theory*

Thus on the whole it appears that the result of research since Darwin's time has not provided material to bridge the gap between the apes and Man, but rather tends to show that that gap is wider than was originally supposed. Hence some evolutionists think it desirable to provide a special category for the process in the case of Man. In 1906 Hobhouse made use of the term "orthogenic evolution" to distinguish "the processes which make for the evolution of a higher type from those which tend only to differentiation."[30] A reaction has set in against biological interpretation of human nature. Vigorous expression was given to this tendency by Professor C. H. Judd, in his presidential address before the American Psychological Association, December 30, 1909.[31] He said:

> "The social sciences have sought in vain to base themselves on the general doctrine of organic evolution. The processes of

[30] *Morals in Evolution*, p. 240.
[31] *Psychological Review*, March, 1910.

human adaptation are different from those of animal adaptation just because human adaptation is determined in character by consciousness."

"I know of no more vivid way of putting the matter than to say that man lives primarily in the world of words. . . . This special world is the most unique product of evolution and it is also the most effective device which has ever been produced for subjecting the physical environment to human needs. How any student of the world of human life could be content to study this life by means of a formula borrowed from the realm of animal evolution, passes my understanding."

"I believe that we have suffered in our later studies of man through a shortsightedness born of the biological discovery that our antecedents are those in which consciousness played but a small part. I believe we need to work further on this problem of evolution until we see that in its consummation organic evolution passes

into a form of adjustment in which the inner world with its conscious pattern for changes in the outer world is more important than any form of objective selection which can be discovered."

The present state of opinion in this field is thus summed up by C. Lloyd Morgan:

"Now that the general evolutionary thesis is fully and freely accepted by those who carry on such researches, more stress is laid on the differentiation of the stages of evolutionary advance than on the fact of their underlying community of nature. The conceptual intelligence which is especially characteristic of the higher mental procedure of man is more firmly distinguished from the perceptual intelligence which he shares with the lower animals, distinguished now as a higher product of evolution, no longer as differing in origin or different in kind."[32]

[32] *Mental Factors in Evolution,* article in Cambridge memorial volume *Darwin and Modern Science.*

§ 25. *Discussion of the Problem*

It is worth considering whether the Social Hypothesis suggested by Darwin as an alternative will not account for the quantitative and qualitative difference between human and animal intelligence noted by comparative psychology, and also furnish just such a difference between Man and other animals in mode of evolution as Mr. Hobhouse and Professor Judd insist upon to square the theory with the empirical data. The matter can be dealt with most effectively by regarding the problem as being simply one of brain development. The cardinal difference between man and brute is there and nowhere else. Darwin expressly correlates mental development with the evolution of the brain. He remarks:

> "As the various mental faculties gradually developed themselves, the brain would almost certainly become larger. No one, I presume, doubts that the large proportion which the size of Man's brain bears to his body compared with the same proportion in the gorilla or orang, is close-

ly connected with his higher mental powers."[33]

The problem is thus resolved into finding a satisfactory answer to the question: What turned the stress of evolution in the direction of brain development to the comparative neglect of corporeal structure? Darwin gave the answer in the Social Hypothesis. It was the institution of communal life that promoted the development of brain rather than of greater massiveness of jaw, length of limb and increased muscular power. Man is conspicuously deficient in natural weapons. Instead of fangs, he has teeth; instead of claws, a flat nail; and his whole body is weak and soft as compared with other large mammals. Thus his physical characteristics indicate that he has not developed on lines of individual competency. He seems like the zooid, modified in nature by developing as part of a collective life.

It is not in question that the exceptional development of the brain in the human species is an increment of advantageous variation: the point at issue is whose advantage? Upon the

[33] *Descent of Man*, Sec. 83.

Individual Hypothesis, the problem baffles elucidation. Wallace found this such a stumbling block that he held that some factor, other than natural selection, must have come into play. He pointed out that "all changes of form or structure, all increase in the size of an organ or its complexity, all greater specialization or physiological division of labor, can only be brought about inasmuch as it is for the good of the being so modified." But it is impossible to see how brain development, rather than bodily development, could have been initiated as individual advantage. Wallace goes so far as to say that even now savages have a larger brain than they have use for as individual animals.[34]

The opinion that human evolution manifests the operation of some distinctive force or power demarcating it from organic evolution has received extensive expression in current literature. A recent instance is Professor Conn's treatise written "to show that the laws

[34] Wallace's views are presented in Chapters VIII. and IX. of *Natural Selection and Tropical Nature;* also Chapter XV. of his *Darwinism.*

of the evolution of animals and plants apply to human evolution only up to a certain point, beyond which Man has been under the influence of distinct laws of his own."[35]

But while this assumption avoids the difficulty of explaining how the human species was extracted from animal species it raises new difficulties. Whence came the distinct laws? What fixed the turning point at which they superseded the laws previously applying to human evolution? In its logical character the proposed explanation seems to revive in a way the doctrine of special creation.

The Social Hypothesis disposes of this matter by exhibiting the community as the being for whose advantage brain development primarily took place. The individual advantage therefrom is incidental. The case is an instance of the modification of the units of a community through stress of evolutionary process upon the community as a whole, analogous to the case of the social insects. Indeed the comparative growth of brain structure in Man is not really so striking an exhibition of the power of

[35] *Social Heredity and Social Evolution*, p. v.

social evolution in moulding individual structure, as is presented by ants. Speaking of the driver ants of West Africa Darwin says:

> "The reader will perhaps best appreciate the amount of difference in these workers, by my giving not the actual measurements but a strictly accurate illustration: the difference was the same as if we were to see a set of workmen building a house, of whom many were five feet four inches high; and many sixteen feet high; but we must in addition suppose that the larger workmen had heads four instead of three times as big as those of the smaller men, and jaws nearly five times as big.[36]

The difference between the brain of Man and Ape, vast as are the consequences, is small compared to this divergence of structure among insects due to social evolution. With them too the brain is one of the organs enlarged through the stress of social evolution. Darwin observes that "in ants the cerebral

[36] *Origin of Species*, Sec. 440.

ganglia are of extraordinary dimensions, and in all the Hymenoptera these ganglia are many times larger than in the less intelligent orders, such as beetles."[87]

If social evolution should have such an effect in differentiating the organs of certain insect species from those of other insect species, is it at all improbable that the same order of influence should have a corresponding effect among the Primates? The facts of individual development indicate that just such a differentiating influence was actually exerted. Professor Keith remarks:

> "The rapid increase of the cranial capacity is a character of the human infant. The brain of the newly born gorilla, which is only slightly smaller than that of a child at birth, is already 65 per cent. of its adult size; the remainder of its growth is probably due to the addition of the 'corporeal concomitant.' From birth onward the anthropoid brain continues to increase at almost a uniform rate until adult years are reached; there is no spurt in growth

[87] Ibid., Sec. 83.

such as we see in the brain of the human infant. . . . Man then is peculiar in that his brain continues to grow rapidly after birth, and in the great expansion of the head in infancy and childhood we see one of the latest phases in human evolution."[38]

Would it not be more correct to say that in this we see that which is the characteristic phase of human evolution? The anthropoid brain may be regarded as exhibiting the type of brain possessed by the pre-human stock before sociality became so complete that the primary incidence of natural selection shifted from the individual to the community. The existing peculiarity of the human brain registers the distinctive effect of social evolution.

§ 26. *Human Nature a Social Product*

It is a fair inference from the foregoing considerations that the fundamental difference between Man and other mammalia is that he is distinctly a product of social evolution. This conclusion is supported by another class of psychological data, those obtained by study

[38] *Man*, in Home University Library, p. 136.

of the human mind and the phases of its development. In a series of remarkable essays on the ethical implications of Darwinism beginning so early as 1868 the late Professor William Kingdon Clifford advanced the proposition that human nature is not explicable save as a social product. In his essay on *The Scientific Basis of Morals* he gave an account of the way in which the individual self emerges from the tribal self. In his essay on *Cosmic Emotion* he described the human mind as "an apparatus for connecting sensation and action, by means of a symbolic representation of the external world, framed in common and for common purposes by the social intercourse of men." In his essay on *Seeing and Thinking* he argued that the life of Man in community has generated the power of forming general concepts. "What has guided the process?" he asked. "Why, clearly the use of them to society, and not the use of them to individuals. . . . As soon as men had to live together and found that they could, by making signs, direct each other's actions, immediately there was an

immense step made forward in this arrangement of propositions within our brain."

Professor Clifford obscured the biological significance of the process he describes by speaking of it merely as acting upon Man, whereas his reasoning implies that it was the decisive factor in the making of Man, virtually the formation of the human species from an antecedent mammalian stock. In his *Scientific Basis of Morals* he came close to the positive affirmation that the process he describes was the species-forming process. He remarked: "But the process is not a conscious one; the social craft or art of living together is learned by the tribe and not by the individual, and the purpose of improving men's characters is provided for by complex social arrangements long before it has been conceived by any conscious mind." In view of such statements, the biological implication becomes almost obvious, and it appears that we are here confronted with an instance wherein natural selection, in Darwin's phrase "acts on the individual, through the preservation of variations which are beneficial to the community."

Professor Clifford's proposition that the human mind is a social product, is now settled doctrine, so that citations on this point from the writings of specialists are hardly necessary. A convenient summary of conclusions reached in genetic psychology will be found in Professor James Mark Baldwin's work on *Darwin and the Humanities* prepared in 1909 on the occasion of the double anniversary of Darwin's birth and the publication of *The Origin of Species*. Professor Baldwin says: "The 'self' of the individual's self-consciousness is, in its materials and processes of formation, thoroughly social in its origin." "Society produces the individual." "The individual is found to be a social product, a complex result, having its genetic conditions in actual social life." "The individual is the result of refined processes of social differentiation." "Consciousness is a thing of functional evolution in the race, and of personal development in the individual."[39]

[39] Opus cited, pp. 48, 66, 74, 75, 81.

§ 27. *Psychological Summary*

Summing up the results of this examination, it may be said that here is a class of evidence that does cast much light upon the problem under consideration. The facts unite in establishing the Social Hypothesis and in excluding the Individual Hypothesis. In this field one does not note such disagreement among specialists as was found in the field of biology. As a fact of ontogeny, or individual development, the psychologists are now generally agreed that the "I" does not develop save in the presence of a "you." But the phylogenetic significance of the fact does not appear to be sufficiently observed. It is logically part of the same statement that the community is prior to the human individual. The laws of mental development thus indicate life in community as a condition precedent to the genesis of the human species.

CHAPTER V

LINGUISTIC DATA

§ 28. *The Function of Speech*

The same kind of difficulties that are encountered when the attempt is made to account for brain development, as a characteristic acquired by variation in the line of individual advantage, present themselves when the genesis of speech is considered, a function correlated with brain development. Professor Judd states the case as follows:

> "There are certain human functions which grow up as supports to consciousness. These functions are not directly related to the physical environment and would never have been perfected at a level of life where mere preservation of individual existence is the chief end of animal endeavor. These supporting or sec-

ondary functions serve the purpose of self preservation only indirectly through consciousness. Chief among such functions is language. . . . Language never was a useful function in the direct struggle with the physical world."[1]

The conclusion is justified when Man is viewed as a product of individual evolution like other Primates; but it is not warranted when Man is viewed as a product of social evolution. If language is an innervation of the community, converting it into a compound being of many heads and hands, it is manifestly a variation advantageous to that being "in the direct struggle with the physical world." So here again we are confronted by an instance wherein natural selection, in Darwin's phrase, "acts on the individual, through the preservation of variations which are beneficial to the community."[2]

§ 29. *The Romanes Bridge*

The object proposed by Romanes in his studies of mental evolution was that of "bridg-

[1] *Psychological Review*, March, 1910.

[2] See ante, Sec. 6.

ing the psychological distance which separates the gorilla from the gentleman." But in setting about this bridge building he begins by discarding the unsocial gorilla as a pier. He makes the assumption that the pre-human anthropoid "was presumably not only more intelligent than any of the few surviving species, but also much more social." He adds: "And this is an important point to insist upon, because it is obvious that the conditions of social life are also the prime conditions to any considerable advance upon the signmaking faculty as this occurs in existing apes."

> "Let us try to imagine a community of *Homo alalus* considerably more intelligent than the existing anthropoid apes, although still considerably below the intellectual level of existing savages. It is certain that in such a community natural signs of voice, gesture and grimace would be in vogue to a greater or less extent. As their numbers increased (and consequently, as natural selection laid a greater and greater premium on intelligent co-

operation, as in the case of the social insects), such signs would require to become more and more conventional, or acquire more and more the character of sentence words and denotative signs."[3]

Romanes enters into a detailed examination of philological evidence in support of the connection of this anthropoid signmaking faculty with the human faculty of speech, and he holds that we have "a proved continuity of development between all stages of the signmaking faculty," ranging from aboriginal gesture and pantomine with auxiliary oralization, up to the point when the oral element of communication predominates, and the conceptual ideation becomes possible that now distinguishes Man from brute. His reasoning is quite dependent upon the assumption that the pre-human species had life in community as an established characteristic.

§ 30. *Genesis of Language*

It is generally agreed among specialists in comparative philology that the formation

[3] *Mental Evolution in Man*, pp. 439, 375, 371.

of society was a condition precedent to acquiring the faculty of speech. For the purposes of this discussion it is not necessary to enter into the controversy between those who hold that language began with the formation of monosyllabic roots, and those who hold that it began with sound groups which have been designated as sentence words, or the holophase. Upon either theory, the existence of society is admitted to be prerequisite. Professor Whitney, who adheres to the radicarian theory, in his dissertation on Philology contributed to the *Encyclopedia Britannica* remarked:

> "As a solitary man now would never form even the beginnings of speech, as one separated from society unlearns his speech by disuse and becomes virtually dumb, so early man, with all his powers, would never have acquired speech, save as to those powers was added sociality and the needs it brought."

The radicarian theory was derived principally from analysis of the Indo-European family of languages. The opposing theory,

which accords with Wundt's theory of the psycho-genesis of language,[4] does not deny the radicarian characteristics of that family of languages but regards them as the mark of an advanced stage of linguistic development, prior to which there were stages, vestiges of which remain in low languages classed as polysynthetic, thus characterized because of the fusion of the several parts of sentence into a single word. This theory, which is favored by archaeologists and anthropologists, throws a light upon human origins that deserves special consideration, since in illuminating the origin of language it also illuminates the beginnings of personality.

[4] Wundt holds that language began as a form of expressive movements in which originally gesture predominated, but with sounds as a habitual accompaniment, "which sounds would form an incomplete language. . . . The development of articulate language is accordingly in all probability to be thought of as a process of differentiation in which the articulatory movements gradually gained the permanent ascendancy over a number of different variable expressive movements which originally attended them. . . . The movements of the vocal organs gain the ascendancy over the others in the effort of the individual to communicate with his fellows." *Outlines of Psychology,* p. 341.

§ 31. *Views of Professor Sayce*

Professor Sayce in his *Introduction to the Science of Language* declares: "Language is the creation of society. . . . Like the song of birds, the language of man, too, is instinctive and necessary, called forth by a sense of life and energy, by a common participation in a common work. . . . Grammar has grown out of gesture and gesticulation, words out of the imitation of natural sounds and the inarticulate cries uttered by man engaged in a common work, or else moved by common emotions of pleasure and pain."[5]

Languages which historically we reckon as ancient are in fact recent in the order of human life. "The parent Aryan itself was as developed and highly inflectional a language as Sanskrit or Greek; its first stage of growth had been left far behind; much more that primeval era when it was first being elaborated out of the rude cries and grammarless utterances of a barbarous community. . . . The Accadian of Chaldea is an old and decaying

[5] Opus cited, Vol. I., pp. 75, 83; Vol. II., 391.

speech when we first discover it in inscriptions of 3000 B.C."[6] Professor Sayce emphasizes the fact that there is no parent form of language but that independent linguistic forms were evolved in various centres. "The number of separate families of speech now existing in the world which cannot be connected with one another is at least seventy-five; and the number will doubtless be increased when we have grammars and dictionaries of the numerous languages and dialects which are still unknown, and better information as regards those with which we are partially acquainted."[7] Professor Sayce sums up the philological data as follows:

> "Comparative philology thus agrees with geology, prehistoric archaeology and ethnology in showing that man as a speaker has existed for an enormous period, and this enormous period is of itself sufficient to explain the mixture and interchanges that have taken place in languages, as well as the disappearance of

[6] Opus cited, Vol. II., pp. 320, 321.
[7] Opus cited, Vol. II., p. 323.

numberless groups of speech throughout the globe. The languages of the present world are but the selected residuum, the the miserable relics, of the infinite variety of tongues that have grown up and decayed among the races of mankind. Since language is a social relation, the first languages will have been as numerous as the first communities."[8]

The polysynthetic languages are regarded as a survival of primitive forms of speech which have elsewhere perished. In them the sentence and not the word is the unit of speech, and the sentence is a sound group which according to Wundt's theory of psychogenesis was originally outcry accompanying pantomime, the formation of language being a process of detachment of sound from gesticulation, a process still not complete. In fact sign language carried on by gesture, has had an extensive development alongside of spoken language, Professor Sayce remarks: "Had the hands not been wanted for other purposes, it is pos-

[8] Ibid., p. 322.

sible that the mouth might never have been used to communicate ideas."

The long sentence words of polysynthetic languages are relics of primitive oralization auxiliary to gesture. Professor Sayce says: "Like the beehive community to which modern research refers the first beginnings of society, the first essays at language were undifferentiated units, out of which the various parts of the sentence were eventually to come."[9] Thus the beginnings of speech were not conceptual utterance, but the expression of trains of association. Poverty in abstract terms is still a marked characteristic of polysynthetic languages. Professor Sayce observes:

> "The Mohicans have words for cutting various objects, but none to convey cutting simply; and the Society Islanders can talk of a boy's tail, a sheep's tail, or a man's tail, but not of tail itself. . . . Cheroki possesses thirteen different verbs to denote particular kinds of washing but none to denote washing itself; and accord-

[9] Opus cited, Vol. II., pp. 308, 302.

ing to Milligan the aborigines of Tasmania had no words representing abstract ideas; for each variety of gum and wattle tree they had a name, but they had no equivalent for the expression 'a tree'; neither could they express abstract qualities, such as hard, soft, warm, cold, long, short, round. The lower races of mankind have excellent memories, but very poor reasoning powers."[10]

§ 32. *The Testimony of Americanists*

Edward John Payne of University College, Oxford, made a systematic investigation of clues to the origin of speech furnished by American tribal languages. He remarks:

"The languages of the American tribes, who left the Old World in an age when speech was as yet imperfectly developed, still retain the impress of its earliest elaboration. . . . The investigator of the American languages has not proceeded far in his task before discovering that he is unwittingly excavating the rude foun-

[10] Ibid., p. 6.

dations of speech, foundations deeply laid in the nature of thought, animal life and human society. In the languages of civilization these foundations are hidden in the structure reared around and above them by the action of analytic thought. In the American languages, though analysis is universally at work, the foundations are plainly visible. The beginnings of speech appear, simple and archaic, as it grew out of the imperfectly significant cry of primitive man. From a nearer point of view than is afforded by the languages of the Old World, we see the human animal learning the elements of speech by semi-instinctive utterances, utterances at first subjective, as in the lower animals, but gradually becoming capable of symbolizing objects; behold thought ranging from thing to thing, rudely classifying things by the personal relations affecting them, and extending its method of designating these personal relations over the whole external world; these personal relations adapting themselves, even

in the pregrammatical ejaculation, to the moods of wish, question, answer and command, and the unit of significance embodying itself in the holophase or polysyllabic unit of utterance."[11]

In considering the specimens of the holophase exhibited by Payne, the observation of Thorndike may be recalled that the farthest reach of animal mentality is the formation of an association series.[12] The holophase may be described as the phonetic symbol of such an association series. It seems to be the linguistic bridge by which man advanced to conceptual thought. Even when abstract terms begin to appear the holophase lingers. Thus the old Huron-Iroquois contained such distinct terms as *escoirhon* (I-have-been-to-the-water), *setsanha* (go-to-the-water), *ondequoha* (there-is-water-in-the-bucket), *daustantewacharet* (there-is-no-water-in-the-pot), along with the word *awen,* meaning simply water.[13]

[11] *History of the New World, called America,* preface to Vol. II., p. xiv.

[12] See ante, Sec. 21, p. 57.

[13] Opus cited, Vol. II., p. 198.

Mr. Payne gives a detailed account of the stages by which the holophase was dissolved and the parts of speech were formed. Terms for particular personal relationship multiplied before the formation of general categories, and some low forms of language are characterized by a remarkable affluence in this respect. Mr. Payne illustrates this characteristic by instances from both Old World and New World languages. "Javanese has twenty pronouns of the first person and twelve of the second. Malay has sixteen of the first person and ten of the second. Fuegian has more than twenty words, some containing four syllables, all of which may mean either 'he' or 'she'."[14]

An idiom traceable through many languages, East and West, provides two distinct forms of the first person plural; one collective, the other selective. "The collective 'we' includes all persons present; the less comprehensive one refers to some smaller 'selected' groups to which the speaker belongs, the rest of the audience being excluded from what is

[14] Ibid., p. 199.

being expressed by him."[15] Allied to this multiplicity of person is a profusion of terms of number. Terms for both dual and plural number are found in American languages, and terms for trinal number are found in some Melanesian languages.[16] The facts collected by Mr. Payne exhibit an almost bewildering variety of linguistic forms in low languages. They are all, however, traceable to original collectivity diminished in various degrees by selection.

§ 33. *The Organ of Group Personality*

Considering the linguistic systems of the American aborigines and collating the facts with additional data obtained from tribal languages in other parts of the world, Mr. Payne reaches the conclusion that the nature of language characterizes it as the organ of group personality. Animals express emotional states by sounds and have at command a great variety of sounds for that purpose. The combination of sounds so as to express ideas, thus

[15] Ibid., p. 202.
[16] Ibid, p. 204.

adapting vocal communication to the expression of thought, Mr. Payne explains as a process initiated by the needs and interests of the community.

> "In other words, the fundamental personal conception is an 'our' or 'we' in which 'my' and 'I' are involved but not distinguished. It is collective; it regards certain human beings as forming a group, and this group as including the members. . . . Language, we cannot doubt, arose in the group. Its first efforts, then, would probably express the relation of thing and thought common to all members of the group at the same time; and these would be conceived by each member as affecting not merely himself but all his co-members. . . . Differential relations must in time supervene, resulting in the discrimination of personalities; but in general the personality of language may be regarded as originally collective, and its original expression as a collective 'we' or 'our'."[17]

[17] Ibid., p. 201.

It is an implication of such opinions as to the origin of language that there must have been a time when the consciousness of personal individuality did not exist in the unit life of the community, any more than in the members of any other animal pack. Self-consciousness has been evolved by life in community and is a social product. Sufficient remains of primitive language exist to show that the concept of personal individuality is of comparatively recent origin. An eminent American authority, the late Daniel G. Brinton, in his *Essays of an Americanist,* remarked:

> "You might suppose that this distinction—I mean that between self and other, between I, thou and he—is fundamental; that speech could not proceed without it. You would be mistaken. American languages furnish conclusive evidence that for unnumbered generations mankind got along well enough without any such discrimination."

Anthropological research has found that the concept of self among primitive peoples is still

that of the group rather than of individual. The Rev. Mr. Fison, a missionary with abundant opportunity for intimate knowledge of the Australian aborigines, says: "It is the group alone that is regarded; the individual is ignored; he is not looked upon as a perfect entity. He has no existence except as part of a group, which in its entirety is the perfect entity."[18]

Observations to the same purport have been made among savages in many parts of the world. Reclus, in his *Primitive Folk,* sums up the evidence by saying: "In opposition to the idea that the individual is the father of society, we suppose that society has been the mother of the individual. . . . Everything leads us to believe that at the outset collectivism was at its maximum and individualism at its minimum."[19]

Ancient law gives similar testimony. Sir Henry Sumner Maine, in his standard treatise on the subject, says that "law is at its basis a rule of conduct inculcated for the welfare of

[18] Cited by Stuckenberg, *Sociology,* Vol. II., p. 45.
[19] Opus cited, pp. 56, 57.

the primitive group," and he remarks that "ancient law knows next to nothing of individuals." It is concerned with groups.[20]

§ 34. *Individual Right a Late Concept*

The discrimination of individual rights and relations is among the latest refinements of speech and of jurisprudence, and is still imperfect among many peoples, perhaps most peoples. The idea of group personality, even in the present age, has probably greater domination than the idea of individual personality. It is still strongly marked in a people of such ancient culture as the Chinese. The idea of group personality pervades their administration of justice and controls their habits of thought. Arthur H. Smith, who lived and worked among them many years, says:

> "Chinese social solidarity is often fatal to what we mean by accuracy. A man who wished advice in a law suit told the writer that he himself lived in a particular village, though it was obvious from his narrative that his abode was in the suburbs

[20] *Ancient Law*, Pollock's edition, p. 250.

of a city. Upon inquiry he admitted that he did not now live in the village, and further investigation revealed the fact that the removal took place nineteen generations ago. 'But do you not almost consider yourself a resident of the city now?' he was asked. 'Yes,' he replied simply, 'we do live there now, but the old root is in that village.' . . . Another individual called the writer's attention to an ancient temple in his own native village and remarked proudly, 'I built that temple.' Upon pursuing the subject it appeared that the edifice dated from a reign in the Ming dynasty, more than 300 years ago, when 'I' only existed in the potential mood."[21]

Percival Lowell, in his essay on *The Soul of the Far East* holds that deficiency in consciousness of personal individuality is typical of the East. "The peoples . . . grow more personal as we go West. . . . The sense of self grows more intense." He finds the gradation so

[21] *Chinese Characteristics*, p. 55.

marked as to suggest a cosmical cause, but it is amply explained by difference in character of race development. Gulick in his *Evolution of the Japanese* gives what is doubtless the correct interpretation. He says:

> "The asserted 'impersonality' of the Japanese is the result of the communalistic nature of the social order which has prevailed down to the most recent times; it has put its stamp in every feature of the national and individual life, not omitting the language, the philosophy, the religion, or even the most inmost thoughts of the people. This dominance of the communalistic type of the social order has doubtless had an effect on the physical and psychic, including the brain, development of the people. These physical and psychical developments, however, are not the cause, but the product of the social order."[22]

[22] Opus cited, p. 361.

§ 35. *Linguistic Summary*

It appears from the foregoing that linguistic data support the Social Hypothesis and at the same time disallow the Individual Hypothesis. The delimiting value of the faculty of speech is admitted by all authorities. Sayce remarks:

> "The faculty of speech, whether exercised or unexercised, is the one mark of distinction between man and brute. All other supposed marks of difference, physiological, intellectual and moral, have successively disappeared under the microscope of modern science. But the prerogative of language still remains, and with it the possession of conceptual thought and continuous reasoning."[23]

If language be the distinctive character mark of the human species, and if the fact be established that language is essentially a social product, then it necessarily follows that Man is a product of social evolution. This inference is confirmed by the facts of individual de-

[23] *Introduction to the Science of Language,* Vol. II., p. 305.

velopment. Anatomists agree that there is no special organ of speech. Dr. Hutchinson says:

> "The organs that make the human voice were never built for that purpose in the first place. Unlike the eye and the ear, nature built no special organ for the voice alone, but simply utilized the wind-pipe and lung-bellows, the swallowing parts of the food passage (tongue, lips and palate) and the nose for that purpose, long after they had taken their own particular shapes for their own special ends."[24]

Speech is an art that has to be acquired by the individual from social contact. Every child has to learn how to speak. The function would never arise in the course of individual development apart from social control. The physical basis of speech thus supplies evidence that it originated as a social function.

[24] *Handbook of Health*, p. 271. For a detailed account of how the physical endowment was utilized for speech, see Payne's work. Vol. II., p. 145 et seq.

CHAPTER VI

ANTHROPOLOGICAL DATA

§ 36. *Vestigial Structure in Savage Society*

Darwin was confronted by a mass of evidence collected by anthropological research in regard to domestic institutions among savages. The communal system of sex relationship described by such observers as Morgan, McLennan and Lubbock is considered by him and he admits that there is strong evidence to the effect that it is a primitive characteristic.[1] Morgan showed that the system is ingrained in the archaic texture of language, indicating that neither monogamy nor polygamy nor indeed any form of marriage expressive of individual relations existed in the primitive constitution of society. While he was led to this epochal discovery by examination of American tribal

[1] *The Descent of Man,* Chap. XX., Secs. 971, 977.

languages, it was corroborated by linguistic evidence in different parts of the world. His conclusions, published in 1868,[2] impressed Darwin, who remarked that "the indirect evidence in favor of the belief of the former prevalence of communal marriage is strong, and rests chiefly on the terms of relationship which are employed between members of the same tribe, implying a connection with the tribe, and not with either parent."[3] According to Morgan terms of relationship fall into two great divisions, classificatory and descriptive. The former system deals with groups while the latter, which is that in use among civilized nations, deals with individuals. The descriptive system gives such distinct terms as "mother," "aunt"; in the classificatory system the same term of relationship indicates both. Among the Australian aborigines, for instance, the child has not simply a mother but also a mother group to which his actual mother belongs, all the women of the group being desig-

[2] *Systems of Consanguinity and Affinity in the Human Family.* Smithsonian Contributions to Knowledge, Vol. XVII. The evidence is summarized in his *Ancient Society.*

[3] *Descent of Man,* Sec. 972.

nated by the same term of relationship; and likewise he has not merely a father but a father group. Such evidence, as Darwin observes, seems to indicate that originally the notion of parentage inhered in the tribe and not in individuals.

The incompatibility of such data with the Individual Hypothesis was noted by Darwin himself, and he remarked that he would "not pretend to conjecture" how the domestic institutions now found among savages could have arisen.[4] But he rejects the supposition that the communal system "prevailed in times past, shortly before Man attained to his present rank in the zoological scale," as it would be incompatible with "the strength of the feeling of jealousy all through the animal kingdom, as well as from the analogy of the lower animals, more particularly those which come nearest to Man."[5]

[4] *Descent of Man*, Sec. 977.
[5] Opus cited, Sec. 975.

§ 37. *Origin of the Family*

Westermarck expounds the origin of domestic institutions in conformity with Darwin.[6] He holds that pairing, originally casual, became permanent through influences mainly due to the basis of subsistence. "When mankind became chiefly carnivorous, the assistance of an adult male became still more necessary for the subsistence of the children, as the chase everywhere devolves on the man." The family thus made its origin in connection with parental duties, and "among our earliest human ancestors the family, not the tribe, formed the nucleus of every social group, and, in many cases, was itself perhaps the only social group."[7]

The evidence in favor of the existence of communal marriage as a primitive arrangement is considered in detail by Westermarck. He finds it to be either fallacious or of so exceptional a nature that it cannot "represent a

[6] In one place he intimates surprise that Darwin could have thought it probable that the progenitors of man were social animals. *History of Human Marriage*, p. 42.

[7] Opus cited, p. 538.

stage of human development." He concludes that "nothing would entitle us to consider this promiscuity as a survival of the primitive life of man, or even as a mark of a very rude state of society."[8]

Although endeavoring to show that the historical evidence adduced by Morgan, McLennan and Lubbock does not justify their conclusions, Westermarck holds that "the strongest argument against original promiscuity is, however, to be derived from the psychical nature of man and other mammals."[9] The powerful feeling of jealousy would suffice to preclude the communal system in primitive humanity. Westermarck gives an array of evidence on the prevalence of jealousy in the human race in all culture stages, but in this field he encounters evidence that sexual hospitality is prevalent among peoples of low culture. He meets this by pointing out that jealousy "is far from being the same feeling in the mind of a savage as in that of a civilized man. A wife is regarded as not very

[8] Opus cited, p. 60.
[9] Opus cited, p. 117.

different from other property." Therefore "the fact that a man lends his wife to a visitor no more implies the absence of jealousy than other ways of showing hospitality imply that he is without the proprietary feeling."[10]

It is to be observed that when savage jealousy is thus identified with mere resentment of trespass it becomes a different factor from the animal jealousy on which the theory relies. The use of the term "jealousy" to describe male contention over the possession of females in the animal kingdom seems to carry with it misleading associations. Jealousy, as a human characteristic, has particular objects apart from which it is not excited. The pugnacity which many animal species display during the rutting season is a general sex manifestation. Moreover, while the mating instinct among the animals is generally confined to a particular season, that is not the case with Man.[11] This is an important distinction, as it points to the existence of con-

[10] Opus cited, p. 130.

[11] A collection of evidence on this subject is given in *History of Human Marriage*, Chap. II.

ditions in the human species facilitating mating without the need of any periodic instinct to bring the sexes together.

§ 38. *Systems of Kinship*

The opposition to what has been designated as the primitive horde theory has been very able and tenacious. That opposition has had to reckon with convergent evidence along several lines; evidence of the widespread prevalence, past and present, of kinship through mothers only; evidence drawn from terms of relationship in various languages, indicating marital classification by groups; evidence drawn from the actual organization of savage society indicating that group marriage continues under conditions suggesting that it is a relic of primeval habit. All these lines of evidence have been met by arguments attenuating the evidence and accounting for the residuum on the hypothesis of retrograde or degenerate tendencies. The argument could point to the fact that such tendencies are known to have operated in some cases, and hence there is room for the supposition that

degeneracy has occurred even when it is impossible to trace it.[12] But anthropological research keeps finding evidence incompatible with the theory of the original pairing family and at present the mass of antagonistic data seems to have fairly overwhelmed it.

The progress of the controversy has been marked by a divergence of opinion between field anthropologists and chair anthropologists. The classificatory scheme of tribal organization on the basis of group marriage was discovered by the American anthropologist Lewis H. Morgan from clues furnished by actual observation and experience of tribal life. Much additional information has come from other anthropologists engaged in the

[12] The controversy is described in detail by Prof. George E. Howard, in his *History of Matrimonial Institutions*, 1904. The work is mainly judicial but it gives an introductory analysis of the literature and theories of primitive marriage and the family. The conclusion at which Prof. Howard arrives is that "early monogamy takes its rise beyond the border line separating Man from the lower animals. At the dawn of human history individual marriage prevails, though the unit is not always lasting. In late stages of advancement, under the influence of property, social organizations, social distinctions, and the motives to which they gave rise, various forms of polyandry and polygamy make their appearance, through monogamy as the type is never superseded." P. 150.

study of conditions under actual contact with them. Westermarck and others who have endeavored to show that the field anthropologists did not correctly interpret the evidence they collected have dealt with the subject as a scholastic study. Fortunately a closer connection between the two classes of students has been brought about through the efforts of English anthropologists, and the combination has resulted in the production of works that may be regarded as introducing a new era in anthropological research. A monumental work of this order was published in 1899 by Baldwin Spencer, some time fellow of Lincoln College, Oxford, and later professor of biology in the University of Melbourne, Australia, and F. J. Gillen, special magistrate and protector of the aborigines, Alice Springs, South Australia. Mr. Gillen had spent nearly twenty years among the aborigines and both Professor Baldwin and himself had been admitted to membership in the Arunta tribe. In their researches they had the advice and help of Dr. E. B. Tylor and Professor J. G. Frazer of England. The result was a precise and sys-

tematic account of the languages and customs of the Central Australian aborigines, affording conclusive evidence of the existence of group marriage. The work was carried on with Westermarck's criticisms in mind, and with the purpose of getting at the actual facts. There are tribes in which individual marriage has superseded group marriage, but the prior existence of the latter has left distinct vestiges in language and customs. In some tribes group marriage still continues. The authors remark:

> "Westermarck has referred in his work to what he calls the pretended group marriage of the Australians? In the case of the Urabunna there is no pretence of any kind, and exactly the same remark holds true of the neighboring Dieri tribe."[13]

Proof of the actual existence of group marriage does not of itself exclude the hypothesis that it is an outcome of moral degeneracy, but group marriage is found imbedded in a linguistic system that classifies relationship by

[13] *The Native Tribes of Central Australia*, p. 109.

groups and not by individuals. It is hard to imagine how alteration of behavior could have brought about such an elaborate reconstruction of thought and language as to extinguish all trace of a prior system of individual relationship. And the difficulty increases when it appears that languages quite distinct in their vocabularies show the same classificatory system. Spencer and Gillen give lists of terms in various tribes, differing in their character but all expressive of the same system. They conclude that no hypothesis will meet the facts save that group marriage is a system that underlies the language and social institutions of the various tribes.

§ 39. *The Undivided Commune*

Another point brought out distinctly is that in this matter there is no evidence of moral degeneracy. On the contrary marital regulations are strictly enforced, and breach of them severely punished, but the prohibitions relate to groups, and to individuals only as members of groups. To designate such intercourse as promiscuous falsifies the situation. Neither

polygamy nor polyandry is so characterized, and group marriage is the fusion of both those systems, in conformity with moral obligations distinctly recognized as such. Transition to individual marriage is going on, but it appears as a differentiation of group marriage and is associated with some recognition of the institution. The evidence points to a primitive condition, not of anarchy as the term "horde" might suggest, but of a condition which the veteran field anthropologist A. W. Howitt has termed The Undivided Commune.

Howitt has been engaged in the study of the Australian aborigines of South East Australia for about forty years. As long ago as 1873 he joined with Dr. Lorimer Fison in investigating the classificatory system of relationship. At intervals after 1882 Howitt made known the results of his investigations, and in 1904 he published a work in which he collected the evidence and set forth his conclusions. They agree with those reached by Spencer and Gillen upon evidence obtained among the tribes of Central Australia. Howitt gives vocabularies and tables of relation-

ship in various tribes showing the existence of the classificatory system, and he gives instances showing the strictness of tribal law in enforcing prohibitions connected with that system. For instance, among the Dieri, where group marriage exists, the most insulting expression that can be used is one implying improper sexual relations. "This expression is never used by one person to another unless they have been worked up to a state of anger approaching frenzy."[14]

Howitt says that the classificatory system is unintelligible unless it is borne in mind that "the social unit is not the individual but the group; and the former simply takes the relationships of his group, which are of group to group." The system is not a crude but an elaborate one, making some distinctions which are lost in the descriptive system of civilized peoples. For instance our term "uncle" includes father's brother and mother's brother, but in the classificatory system they are distinguished. Mr. Howitt holds that the study of Australian relationship terms leads to "the

[14] *The Native Tribes of Southeast Australia*, p. 186.

conclusion that the state of society among the early Australians was that of an 'Undivided Commune'."[15] Existing tribal organization is the result of communal division. "This fundamental law of communal division underlies and runs through all the more developed systems of four or eight sub-classes, and even shows traces of its former existence in tribes in which the class system has become decadent and the local organization has taken place and assumed control of marriage."[16] That is to say, group marriage and the classificatory system of relationship are results of the segmentation of primitive community.

This hypothesis throws the existence of life in community far back in geologic time. The organization of society both in America and Australia exhibited the classificatory system, in both of which continents the original entry of Man was made by land connections that have since disappeared.[17] Moreover there is

[15] Opus cited, p. 173.

[16] Ibid., p. 174.

[17] There are theories of oversea migration, but they do not seem to be well founded. Payne's *History of the New World Called America* gives an account of the course of speculation

another class of anthropological data that directly connects the Undivided Commune with the animal pack, prior to any recognition of human consanguinity and affiliation.

§ 40. *The Origin of Totemism*

A difficult problem of anthropology has been to account for the origin of Totemism. The regulations of savage society founded upon Totemism have a coercive force surpassing that of law among civilized peoples. Totem injunctions and prohibitions seem to grasp savage nature by the roots of being, producing scrupulous observance of customs, many of which to civilized man appear to be extremely absurd and irrational. When the Totemic organization of society is found to be an aboriginal characteristic in such widely separated parts of the world as the continents of America and Australia, the inference is unavoidable that it must have arisen from the operation of some general cause founded in the psychical constitution of human nature. Vestiges of

as regards American origins; Howitt's *Native Tribes of South-east Australia* does likewise as regards Australian origins.

Totemism have been detected among peoples in advanced stages of social organization, Semites, Egyptians, Greeks and Romans. But Totemism is a scheme of relationship not between human beings but between the group and its environment. It assumes kinship with plants and animals involving obligations of comity and relations of mutual service. Totem groups take their names from their respective Totems and identify themselves with the Totem with such intuitive conviction as to indicate that to the savage mind it appears to be a most simple and obvious matter.

Some facts discovered by Spencer and Gillen threw light upon this mystery. They found Australian tribes that have not arrived at an understanding of the facts of human reproduction. Pregnancy is accounted for as being the work of the Totem within whose sphere of influence it is experienced. Spencer and Gillen give some curious accounts of the precautions taken by the women to keep the Totem spirit from affecting them.[18] Subsequent investigation has abundantly confirmed

[18] *The Native Tribes of Central Australia*, pp. 124, 202, 365.

the prevalence of such strange notions. Professor Spencer has collected much additional evidence. In a recent work he says that this belief "has now been shown to be prevalent over the whole of the central and northern part of the continent—that is, over an area four and a half times the size of Great Britain, —among the Queensland tribes and in a large part of West Australia."[19]

Such facts indicate that Totemism originated as a savage theory of parentage. This interpretation is accepted by Professor H. G. Frazer, who designates it as "the conceptional theory," according to which Totemism originated "as an early theory of conception, which presented itself to savage man at a time when he was still ignorant of the true cause of the propagation of species. . . . It accounts for all the facts in a simple and natural manner."[20] This theory, which is confirmed by a great mass of evidence whose cogency must impress

[19] *Native Tribes of the Northern Territory of Australia,* p. 263.

[20] *Totemism and Exogamy,* Vol. IV., pp. 59, 60. This work in four massive volumes is a digest of the literature of Totemism.

anyone who consults Frazer's monumental treatise, fills in the gap between human society and the animal pack. It points to the existence of the Undivided Commune at a period anterior to any family organization or indeed to any recognition of human consanguinity. It is a type of community directly connected with and merging into the animal state.

§ 41. *Anthropological Summary*

It has been noted that Darwin himself admitted that social structure among savages told against the Individual Hypothesis. There are cases in which difficulties observed by him have been removed by fuller knowledge, but this case is not one of them. The incompatibility between the facts and that hypothesis has gone on increasing, and for the interpretation of the data it has been found necessary to make statements and give explanations which adopt the Social Hypothesis. There is not as yet any such agreement of scientific opinion in this field as is found in linguistics and in psychology. The conclusions at which field an-

thropologists long since arrived, as to the collectivism of primitive society, are still resisted in some quarters. But ever since the publication of Professor Frazer's great corpus of evidence the weight of scientific authority is on the side of the Social Hypothesis.

CHAPTER VII

SURVEY OF GENETIC DATA

§ 42. *The Huxleyan Position*

From the foregoing it appears that the evidence in all four of the classes examined yields support to the Social Hypothesis. In the department of biology the Individual Hypothesis still seems to hold the field not because of evidence but rather, it seems, because the prevailing attitude is Huxleyan instead of Darwinian. Huxley's *Man's Place in Nature* was published in 1863, four years after the publication of *The Origin of Species* and eight years before *The Descent of Man* in which Darwin stated his own views of the genesis of the human species. Thus the Huxleyan position was established in advance of the Social Hypothesis which seems never to have received due consideration. Among the numer-

ous authorities consulted in the preparation of this treatise, Darwin's own work is the only one in which this particular phase of evolutionary process is distinctly indicated. Huxley's work, both in its mode of treatment and by its illustrations, tends strongly to impress the opinion that Man is a modification of the ape type of animal. He argues that "the structural differences between Man and the highest ape are of less value than those between the highest and the lower apes" and he enlarges upon "the impossibility of erecting any cerebral barrier between Man and the apes." He insists that there is "an almost complete series of gradations from brains little higher than a rodent to brains little lower than that of Man." "The difference between the brains of the chimpanzee and of Man is almost insignificant, when compared with that between the chimpanzee brain and that of the lemur."[1]

Such language is calculated to set up the Individual Hypothesis as the guide to research. Huxley admits that "in the present

[1] The quotations are all from Chap. II. of the work cited.

creation, at any rate, no intermediate link bridges over the gap between *Homo* and *Troglodytes.*" But this implies that eventually that missing link may be found. Huxley raises this hope when he remarks: "It seems to follow that if any process of physical causation can be discovered by which the genera and families of ordinary animals have been produced, that process of causation is amply sufficient to account for the origin of Man." But Darwin pointed out that a great difference in the process of causation was possible, namely, that the stress of natural selection might in some cases operate upon the community and mould individual structure through the life of the community. Certainly in the case of the social insects not "any process of physical causation" would suffice, but only that particular process which has been designated social evolution. This Darwinian suggestion seems still to await trial in biological research.

§ 43. *Sociality an Essential*

Even those who adopt the Individual Hypothesis generally admit social conditions as a proximate phase in the genesis of Man. But if the argument employed to account for the transition from unsocial Ape to social Man is examined it is found to be logically defective. Reduced to its simplest form it comes to this, that as Man becomes Man he is Man. The formation of society is attributed to perception of its advantages through increased mental development. As one writer of this school puts the case, it dates from "the dawn of intellectuality." What caused this dawn? The affirmation imputes to the antecedent animal species a specific characteristic of the human species and is a case of reasoning in a circle. When it is stated that Man was not originally a social animal, but that later on Man engaged in social intercourse and developed speech, a primitive condition is imputed to Man in which he could not have become Man, but the logical hiatus is veiled by applying the term "Man" to an animal of specifically different character.

It is like talking of a bird that did not originally breathe air but acquired the habit through flight. *Homo alalus,* or speechless Man is a pseudo-concept. Even Haeckel, who invented the term to indicate a hypothetical phase in human genesis, says: "Man originated from the preceding stage in consequence of the gradual improvement of inarticulate animal sounds into true articulate human speech."[2] That is to say, Man did not precede speech, but speech preceded Man, and as speech is unquestionably a social product, the formation of community was a condition precedent to the formation of the human species.

§ 44. *Specific Importance of Difference*

The Huxleyan notion that Darwinism implies gradation between Man and the other animals seems to pass without question, but its morphological basis is not so secure as has been assumed. The social and solitary insects have a fundamental structural type in common, but the phenomena of polymorphism and the peculiar structure resulting from that

[2] *The Evolution of Man,* Vol. II., p. 182.

process are peculiar to the social insects. Naturalists do not attempt to grade them as phases of the same process of physical causation that produced the solitary species. They explain polymorphism as structural variation due to the intervention of a particular process of physical causation, namely, social evolution. The original stock in which insect community was formed may have been the same stock from which solitary insects of the same order are derived, but since divergence in evolutionary process took place they have been disparate in their development and the existing gap between the organs of social insects is not filled in by intermediate forms. Polymorphism appears among the social insects, while in bodily structure solitary insects have only the dimorphism of sex.

But it may be said that no analogous structural variation has taken place between Man and other Primates. The objection fails to allow sufficient weight to Darwin's observation that when the stress of evolution was laid upon brain development corporeal structure would be little affected by natural selection. Specific

characteristics due to social evolution are formed intensively in Man, and not extensively as with the social insects. If variation registered in the cells of the brain and nervous system were as apprehensible as external differences the resemblance between Man and Ape might then appear superficial and insignificant as compared with the great structural differences that would then appear.

If, as Darwin says, corporeal structure is but little affected by natural selection after its stress is laid upon brain development, then it follows that as between Man and Ape difference is of more specific importance than resemblance. This corollary is peculiar to Man among the Mammalia since in that order it is only in the case of his particular species that this shift of evolutionary stress took place. It is in accord with this principle that he retains what in its general pattern is a primitive mammalian form, but nevertheless difference between Man and Ape pervades every part of their structure. Even Huxley, although insisting upon their close affinity as animal species, remarks that "every bone of a gorilla

bears marks by which it might be distinguished from a man," and it might be added that the difference in other organs is even greater. Huxley admits that the structural differences throughout "are great and significant." Upon the Darwinian principle that has been cited the difference in detail implies a divergence in evolutionary process which, if it had registered its effects upon general structure, might have produced a creature as unlike the ape as an elephant or a giraffe.

§ 45. *The Evidence of Behavior*

The misleading influence of externals is seen in a disposition to regard some varieties of Man as approximating apes in character. The Australian aborigines, the now extinct Tasmanians, various jungle tribes of Java and the Malay Peninsula, and also the African pygmy tribes, have been referred to as animal groups so similar in their ways of life to the anthropoid apes as to suggest derivation from the same stock. The facts when duly considered point just the other way. According to the Darwinian theory adaptation to the basis of

subsistence is of causal importance in the formation of species. The different lines of adaptation pursued by organisms result in different species. Keeping in mind these principles, it is to be considered that although there are savage tribes living under the same natural conditions as apes, and quite as dependent as apes upon jungle produce, no tribe has ever been discovered that is arboreal in habit like apes. Some, like the Samangs of the Malay Peninsula, build shelters in trees as a refuge against enemies, but they are distinctly a species of animals adapted to terrestrial life. The pygmy tribes of Oceania and Africa are regarded by anthropologists as remnants of aboriginal peoples once widespread but now only preserved in jungle recesses,[3] but they are also distinctly terrestrial. If they were originally an arboreal species, how could they have experienced such complete change of habit while remaining on the same plane of subsistence and under the same natural conditions as apes? It is more reasonable to suppose that they do not come of an arboreal stock. Upon

[3] Keane, *The World's Peoples*, pp. 64, 149.

anatomical grounds Professor Keith has come to the conclusion that Man never was arboreal but was evolved from an animal species of terrestrial habit.[4]

Even when as completely dependent as apes on a natural basis of subsistence, savages are worlds away in their social organization. This is a point that is not always apparent. To superficial view there are savage tribes whose members appear to be as gross in mode of life as the lowest brutes, and quite as remote from any sense of moral obligation, but intimate knowledge always shows that their lives are enmeshed in a web of obligation. Their morality is quite different from that of civilized life, but it is if anything more stringent. An Australian aboriginal may go naked, have no property or settled abode, live like a wild animal on what he can pick up or capture, but it would be a great error to suppose him subject only to animal appetites and passions. If he brings down game he cannot eat it himself or keep it for his mate and her children, but it must be distributed according to tribal law.

[4] *Man*, pp. 77, 251.

In some cases the hunter himself does not directly participate. In the Kurian tribe if a man kills an animal the distribution of the meat is made by his wife's father and the hunter shares in the feast only through the portion allotted to his wife.[5] Here is a great chasm between human behavior and animal behavior, although here man has remained on the same basis of subsistence as other animals.

§ 46. *The Psychological Chasm*

Although Huxley insisted that there was "no cerebral barrier between Man and the apes" yet eventually he appears to have found a radical difference in their nature. In a lecture delivered in 1893, he held that in the case of Man a principle of progress intervenes quite distinct from that which applies to animal evolution. He observed:

> "Social progress means a checking of the cosmic process at every step and the substitution for it of another, which may be called the ethical process; the end of which is not the survival of those who may

[5] Howitt's *Native Tribes of Southeast Australia*, p. 758.

> happen to be the fittest, in respect of the whole of the conditions which exist, but of those who are ethically the best. . . . In places of ruthless self-assertion it demands self-restraint; in place of thrusting aside, or treading down, all competitors, it requires that the individual shall not merely respect, but shall help his fellows; its influence is directed, not so much to the survival of the fittest, as to the fitting of as many as possible to survive."[6]

The logic of this position is difficult to understand and the difficulty is not lessened by the note that Huxley appends affirming that "social life and the ethical process . . . are part and parcel of the general process of evolution." So then we have particular cosmic process checking general cosmic process, which leaves the matter darker than before.

If the Social Hypothesis be adopted the apparent conflict disappears. That hypothesis does not dispute that Man belongs to the same order as apes but it discards derivation from any of their species and it finds no pattern of

[6] *Evolution and Ethics*, p. 33.

human origins in their characteristics. The human species have a mammalian root in common with apes, but, as Darwin remarked, "we must not fall into the error of supposing that the early progenitor of the whole simian stock, including Man, was identical with, or even closely resembled any existing ape or monkey." It is not assuming anything abnormal to admit the possibility that in the Mammalia as in other animal orders evolutionary process early assumed a social phase. The occurrence of that phase in the formation of the human species implies no break in natural history but it does imply a psychological chasm between Man and his animal cognates that has gone on widening it may be for millions of years.

Thus the Social Hypothesis accounts for qualitative as well as quantitative difference between human and animal intelligence. As Professor Thorndike remarks: "Some sort of difference in processes in the brain must be at the basis of the mental differences between man and the lower animals, we should all admit."[7] Such difference is just what on this

[7] *Animal Intelligence*, p. 287.

hypothesis is to be expected. There is a psychological chasm between Man and all other mammals because Man did not come by their way but by quite another way. Other mammals are either wholly products of individual evolution or, if not entirely so, their social habits were not such as to shift the stress of evolution to the community, which was accomplished in the case of Man, thus introducing social evolution. Man does not merely stand on a higher terrace; his position is the result of an uplift distinct in nature and effect from that which took place among other Mammalia, placing him on quite another plane of being. The oceanographer, Sir John Murray, in giving an account of the geospheres remarks that "within the biosphere a sphere of reason and intelligence has been evolved" which "may be called the psychosphere."[8] Man is certainly the only animal of his order inhabiting the psychosphere. However close Man's animal origins were to those of the apes, as Man he became a denizen of a different world. If any other animals can have had a process of

[8] *The Ocean*, p. 228.

development reaching toward the psychosphere they might be the bees and ants, the resemblance of whose social organization to human polity is often remarked. But their case appears to illustrate a rich development of instinct from social evolution rather than of intelligence.[9] The biological position of Man appears to be quite unique and only upon a purely morphological system of classification can Man be grouped with any other species. The traditional scheme is inaccurate even from the morphological standpoint. The Primates are a lowly set of mammalian forms whose proper place in the morphological scale is near the bottom. But because the animal stock from which Man was evolved belonged to this group it has been placed at the top, with a name corresponding to that false position.[10]

Inattention to the radical difference, the immense separateness between Man and other animals, accounts for the practical tendency of Darwinian speculation to bring darkness rather than light of which humanists complain.

[9] Bergson has some interesting remarks on this point. See *Creative Evolution*, Mitchell's translation, p. 167.

[10] Cf. ante, p. 38.

Extracts have already been given from an energetic deliverance on this point by Professor Judd in his presidential address on *Evolution and Consciousness.* As regards Darwin's own part in the imbroglio Professor Judd said: "Darwin was undoubtedly in line with all our modern thinking when he felt the necessity of a special formula for human evolution, but he hardly satisfied the demand which he felt. The breach between animal life and human life is much too great to be spanned by any single form of selection. The fact is that the method and end and character of human life are all different from those described in any formula of organic selection."

It may be questioned whether Darwin's theory of the Descent of Man would have been exposed to such animadversion had he not been entangled by his hypothesis of sexual selection, now almost discarded by his followers. His Social Hypothesis if attentively considered will be found to provide a special formula for human evolution that recognizes the fundamental difference and the great existing breach between animal life and human life.

§ 47. *Altruism and the Aesthetic Sense*

It may be observed that other psychological problems such as altruism and the aesthetic sense, which resist explanation from the standpoint of individual evolution, become soluble when the hypothesis of social evolution is applied. As Darwin pointed out, the spirit of self-sacrifice cannot be accounted for on the principle of individual advantage. But when the development of the individual is viewed as a by-product of the life of the community it is possible to see that altruistic springs of action may be coiled in human nature even as they are in bee nature. Whether or not the aesthetic faculty is possessed by animals other than Man is a disputed point, but in the measure possessed by Man its evolution is inexplicable from the standpoint of individual advantage in the struggle for existence. Capacity for satisfaction from beauty, art and music is even now considered rather disadvantageous to individual success. But if the human brain be regarded as primarily a sort of wireless telegraphy installation for social

service, there is no difficulty in supposing that the human individual is a gainer thereby to an extent that puts him on an emotional plane altogether different from that of other animals.

§ 48. *Combined Weight of the Evidence*

The biological data have been reviewed at some length because it is only in this field that the Social Hypothesis is yet to be established. When data of this class are collated with psychological and linguistic data the evidence seems to combine irresistibly in favor of the Social Hypothesis. No conflict of opinion as to the primordial situation is found among psychologists or linguists. They agree in predicating life in community as a condition precedent to the development of speech and reason, specific characteristics of Man. The Social Hypothesis meets all the facts so completely as to warrant acceptance of it as an inference from all available genetic data.

This conclusion is corroborated in a very striking manner by the direct evidence supplied by anthropology. The now widely accepted explanation of Totemism carries his-

torical knowledge of human origins quite up to the animal state. In a community so ignorant of the facts of human reproduction as to impute the birth of children to the intervention of plants and animals, one is confronted with social structure of the most primitive type conceivable among human beings. By its terms it is antecedent to any conscious organization of family relations or any recognition of direct kinship. The relationship between parents and children is not direct but is circuitous, the Totem of the group being the nexus. In the Totem group the family is involved but not yet distinguished. Totemism points to a state in which there was intellectuality enough to experience curiosity and to desire an explanation as to the arrival of children but not enough intellectuality to discern actual cause and effect. Such a state surely must be referred to the very dawn of intellectuality. Totemism therefore seems to have been the outcome of the earliest activity of nascent reason, and the Totemic organization of the community was the first stage in the development of social structure. From beliefs, customs and cere-

monies originally initiated by Totemism massive growths of myth, art and ritual have taken place with coordinate social organization, such as are exhibited historically by various ancient peoples who laid the cultural foundations of modern civilization.[11]

But the facts of Totemism point not only to an incipient stage of rationality but also to a primordial type of community which Howitt has termed the Undivided Commune, segmentation of which produced the classificatory system of relationship.[12] This conclusion reached by actual study and observation of Totemic institutions coalesces with the views of Payne as to the aboriginal group in which language is originated.[13] Facts evidence by such a convergence of well authenticated data tend not only to establish the Social Hypothesis, but

[11] This clue is being employed with striking results in the interpretation of the origins of Greek arts and cults, particularly in such works as Miss J. E. Harrison's *Themis* and her *Ancient Art and Ritual.* An attempt to indicate the far-reaching significance of Totemism was made by the present writer in an essay published in *The Annals of the American Academy* for May, 1904.

[12] Ante, Sec. 38.

[13] Ante, Sec. 31.

also to indicate the point of junction between biology and political science. The Undivided Commune appears to be the primordial form of the State. It was then not merely a statement of the logical order but was a precise statement of the actual historical order that was made by Aristotle when he said:

> "It is evident that the State is a creation of nature, and that Man is by nature a political animal. . . . The State is by nature clearly prior to the family and the individual, since the whole is of necessity prior to the part."[14]

In view of the Social Hypothesis the Darwinian theory relieves this generalization from the inconsistent attachments to it made by Aristotle in his speculations about the primitive household, and establishes it as the fundamental proposition of political science.

§ 49. *Conclusions*

This survey of genetic data has led to the following conclusions:

[14] *Politics*, Book I., Chap. II. Jowett's translations.

1. Although biology indicates different modes of evolutionary process it is at present inconclusive as to the mode pursued in the case of Man.

2. Psychology, linguistics and anthropology indicate that the mode pursued in the case of Man must have been the process distinguished as social evolution and not the process distinguished as individual evolution.

3. When appeal is made to evolutionary doctrine for social and political criteria, the only hypothesis that can be regarded as having solid claims to consideration is that of social evolution.

Although the available data supply strong evidence in favor of the Social Hypothesis, no doctrine may be regarded as established until it has in its support a scientific consensus. But pending the results of the advance of knowledge bearing upon this issue the Social Hypothesis may at least be regarded as being sufficiently probable to warrant consideration of its implications.

CHAPTER VIII

THE STATE

§ 50. *Significance of the Term*

In designating the entity in which human nature was evolved as the State, the term is employed in a sense recorded in standard dictionaries. For instance: *Webster,* "the whole body of people who are united under one government whatever may be the form of that government"; *Stormonth,* "the whole body of people included under one form of government; the community; the body politic."

Attempts have been made to confine the use of the term to a particular type of community, distinguished from other types such as the tribe or the clan. The weighty authority of Lewis H. Morgan is on the side of such restricted use. He remarks that "there was neither a political society, nor a citizen, nor a

State, nor any civilization in America when it was discovered.[1] Morgan makes "Society" the general term, the State being political society, or organization on the basis of citizenship, as distinguished from gentile society, or organization on the basis of kinship. This terminology has been generally adopted by sociologists, to whom it commends itself by its accord with their fundamental concept of society as a synthesis of individuality.[2] The tribe, the gens, the clan, the State are regarded as forms of association among individuals so that, from this point of view, the only unified concept is that of Society. Premising that the subject matter of sociology is "the genesis of Society from individuals," Stuckenberg remarks that Society is the genus and "of this genus all existing societies are species or differentiations. Thus under the genus Society we have such species as the family, the Church, the State, each of which contains a large number of specific or concrete societies."[3]

[1] *Ancient Society*, p. 66.

[2] For a detailed criticism of the methodology of Sociology see *Journal of Sociology*, Vol. XV., No. 2, 1909; and No. 5, 1910.

[3] *Sociology—The Science of Human Society.* Vol. I., p. 9.

This terminology impresses meanings upon the terms "State" and "Society" that are resisted both by etymology and by usage. "State" is primarily a term for condition in general. Some state or condition underlies every kind of association. Structural variations produce specific forms, the clan, the tribe, a theocracy, a kingdom, a republic, an empire, but the State is the universal of which they are the particulars. In common usage any body politic, whatever may be the principle of its organization, is recognized as a State if important enough to attract observation. The *Statesman's Year Book* classifies among States such countries as Abyssinia, Bhutan, Nepal and Oman, although their organization is tribal rather than civic in character. Despite Morgan's objection to applying the term "State" to any form of polity found among the American aborigines, such terms as the Aztec State in Mexico and the Inca State in Peru are in common use among historians, nor would it be possible to substitute the term "Society" without altering the sense. Society as an abstract term designates

simply relation, with a suggestion of intentional relation,—companionship (*socius,* a companion). Relation implies antecedent condition. Etymologically "state" is an abstract term for condition in general, and its use to denote a body politic appears to have been originally suggested by the phrase of Roman law *status rei publicae,* imperfectly apprehended by the barbarians from whose settlements modern Europe issued.[4] Its appropriateness as a generic term accords with the convenience established by a usage that has withstood all attempts to restrict it to a particular type of body politic.

§ 51. *The Testimony of History*

There is need for a better classification of the forms of the State, distinguishing the Civilized State from the Tribal State or the Gentile State. But the differences are not really so deep as they appear to be. Even the most highly developed form of the State has elements in common with lower forms and upon a historical survey no place can be found

[4] Jenks, *Law and Politics in the Middle Ages,* pp. 71, 80.

where it can be said that up to this point there is one entity and beyond it a different entity. Tribal organization was very marked in the ancient City-State, in which the tribesman was first converted into the citizen. Tribal organization was very marked in the early forms of the modern European State, in the course of whose development the concept of territorial jurisdiction was substituted for that of kinship as the principle of government. It is historically evident that the transformation has been a process of State life; not a substitution of the State for a society. It will hardly be contended that England was not a State prior to the reign of John who first assumed the title King of England; or that France was not a State prior to the reign of Henry IV, who first assumed the title of King of France.[5] But their precedessors who ruled respectively as Kings of the English or Kings of the Franks were national chieftains rather than territorial sovereigns. The principle of territorial jurisdiction and sovereignty was not explicitly recognized until the Peace

[5] Bryce, *Holy Roman Empire*, p. 24.

of Westphalia, 1648.[6] The subject is acutely discussed by Seeley, and he summarizes his conclusions as follows:

> "In short, compare the most advanced State with the most primitive tribe, and you will see the same features though the proportions are different. In the State there is more of mind, in the tribe more of nature. Free will and intelligent contrivance have more play in the former; blood and kinship rule in the latter. Still the State has not ceased to be a tribe; kinship still counts for much in it, as the nationality movement of the present century has strikingly proved. On the other hand, the Tribe, whenever we can get information about it, is found to be also in some degree a State. The rigid family organization always shows itself insufficient, needing to be supplemented by more artificial institutions. Thus, apart from kinship, there is a common characteristic which brings together the most primitive and the most advanced of these

[6] Walker, *International Law*, p. 158.

associations—I mean the principle of government. Here again the proportion may be different—this is what gives rise to varieties—but the common characteristic is there on which depends unity of kind."[7]

§ 52. *The Testimony of Anthropology*

It is remarkable how deep down the origin of political office may be traced. Howitt gives particulars showing the energy and prestige of the senatorial order among the Australian aborigines. The group of ruling elders are "the great ones." The following incident is related:

"When in the Yaurorka country I camped for the night near an encampment of one of the small groups of that tribe. Some of the old men, the Pinnarus of the place, came to visit me, and asked me to go with them to see the Pinna-pinnaru (the "Great-great-one"), who could not come out to see me. I went with them and found, sitting in one of

[7] *Introduction to Political Science*, p. 36.

the huts, the oldest Blackfellow I had ever seen. The other Pinnarus were mostly grayheaded and bald, but he was so old as to be almost childish, and was covered with a grizzly fell of hair from head to foot. The respect with which he was treated by the other old men was as marked as the respect which they received from the younger men. They told me that he was so old that he could not walk and that when they travelled some of the younger men carried him."[8]

The differentiation in nature of authority, distinguished as status and contract, of which some use has been made to demarcate the Tribe from the State, was found even among the Australian aborigines. Mr. Howitt says of the Theddora tribe: "The oldest man of the tribe was recognized as a kind of chief, but whenever an attack on some enemy was planned the ablest warrior was, as a rule, chosen to lead, and his advice then received the endorsement of the old men."[9]

[8] *Native Tribes of Southeast Australia,* p. 300.
[9] Opus cited, p. 302.

Here we have the homologue of the sachem and chief in the American Indian tribes. Morgan says that "the office of sachem was hereditary in the gens." "Moreover, the duties of a sachem were confined to the affairs of peace. He could not go out to war as a sachem. On the other hand, the chiefs who were raised to office for personal bravery, for wisdom in affairs or for eloquence in council were usually the superior class in ability, though not in authority over the gens."[10]

The case illustrates the powerful structure-forming influence of military necessity, a fact so conspicuous in advanced forms of the State as to cause some writers to regard the State itself as fundamentally a military product. This concept is adopted by Oppenheimer,[11]

[10] *Ancient Society*, p. 71. It might be worth inquiry whether the duplication of executive power recorded in ancient history may not have had a like origin, such as the two Kings of Sparta, the two Consuls of Rome, the two Suffetes of Carthage.

[11] *The State*, by Franz Oppenheimer. This work was published in Germany in 1908. The American translation by John M. Gitterman was published in 1914. Translations have also been made into French, Hungarian, Italian and Rumanian. The interest it has attracted may be perhaps attributed to the fact that it accords with certain sociological theories to the effect that the State is a transitory phase of power, eventually

who dismisses communities like those of the Australian aborigines and other primitive peoples of low polity as "huntsmen and grubbers," "peoples without a State." But nevertheless his definition lands him in difficulties when he comes to consider States like the Commonwealth of Australia, the Dominion of Canada, the United States of America. In their case it is historically evident that the structural principle was economic and not military. Then, according to the proposed definition, they are not entitled to rank as States. Oppenheimer perceives the logical consequence, and he complains that "They will continue to be called States in spite of all protests, especially because of the pleasure of using confusing concepts." Just so; it is impossible to upset the firmly established usage according to which they rank as States. If instead of trying to conform facts to theory it is sought to conform theory to facts it will appear that the most primitive type of community available for observation is a body

to be superseded by voluntary association designated by the author as Free Citizenship.

politic with office and government, and when speaking with scientific precision it must be classed as a State. The term "Tribe," as its etymology indicates (*tribus,* one of three parts into which the Roman people were anciently divided), is an appellation which simply notes difference. Although a convenient term in general literature and in common speech to designate a low form of the State, it has no more scientific value than the term "weed" as a classification of plant species.

§ 53. *Terminology of Political Science*

It is not uncommon for a term to acquire a popular use that differs from the scientific use. As a term of common use "animals" ordinarily designates a class which a zoologist distinguishes as Mammalia. Birds, fishes and insects are not usually referred to as animals, but they are all so classed when speaking with scientific precision. The popular use differs from the scientific use without impairing it. Scientists themselves find it convenient to adopt the popular use in ordinary conversation. A similar differentiation in usage exists

as regards the term "State," but it need occasion no practical difficulty. In statistical manuals, in news dispatches and in international law the term designates only bodies politic of such salient importance as to be regarded as participants in world politics. But as a term of political science "State" includes every form of body politic, savage, barbarous or civilized.

With that concept defined other generic terms fall readily into place. Government is not the State but is particular structure and function in the State. A good definition is supplied by Spencer, who says that Government is "that part of the social organization which consciously carries on directive and restraining functions for public ends."[12] The use of the term "State" as a synonym for "Government" is a common practice to which there need be no objection, if it be understood, as it should be, that although the whole is mentioned the part is meant. It is an instance of what rhetoricians call synecdoche.

[12] *Principles of Biology,* Vol. II.: Part V., of "Political Institutions," Chap. II., p. 247. Spencer's refutation of Hobbes's "State of Nature" in "Justice," Part IV., of *The Principles of Ethics,* Chap. XXV., may be consulted also.

Since the State is the whole body, it follows that the State includes Society; but Society is not a part of the whole but is coextensive with it. The State and Society may be regarded as the same entity, in the one case considered in its collective aspect, in the other in its distributive aspect. Thus Spencer describes the State as "Society in its corporate capacity."[13]

To sum up: The term "the State" designates the whole; the term "Society" designates the parts which together form the whole; the term "Government" designates a part of the whole which has such salient importance that it is apt to be identified with the whole in ordinary experience.

§ 54. *The State an Organism*

It is a corollary of the Social Hypothesis that the State is an organism. This is a point that is deeply involved in controversy. The literature of the subject is so voluminous that an account thereof itself makes a corpulent volume.[14] The weight of authority is now ap-

[13] *Data of Ethics*, Part V., "Justice," pp. 186, 221.

[14] *The Organismic Theory*, by F. W. Coker. There is a brief but comprehensive account of the conflict of scientific opinion

parently against the proposition. But if the conclusions reached in favor of the Social Hypothesis are well founded, it follows as a simple statement of biological fact that the State is an organism, just as the ant or the bee community is an organism. It may be asked whether such a discrete entity as a community of social insects can be designated as an organism without doing violence to language. To this it may be replied that it is an use required by scientific precision and it is adopted by specialists as a matter of correct terminology without having in mind any bearing of the matter upon political theory. A community of social insects must be regarded as an organism, inasmuch as its unit life has been differentiated by evolutionary process operating through the community, as Wheeler has described in the case of ants.[15] J. S. Huxley in a purely biological treatise expressly recognizes insect communities as organisms. He refers to "such organisms as the ant colony, which is not a solid whole, single and de-

on this subject in *Introduction to Political Science* by J. W. Garner, pp. 56-65.

[15] Ante, Sec. 23.

fined in space." Discussing compound individuality, he remarks that "the communities of ants and bees are undoubted individuals."[16] The State is in the same biological category.

It should be carefully observed, however, that when the term "organism" is applied to the State nothing more is signified than the plain dictionary meaning of "an organized being" (Webster) or "a body possessing organic structure" (Stormonth), or "a body exhibiting organization and organic life" (Century). Some frequently urged objections to the term are beside the mark, such as that the State lacks concreteness, or that it exists for the sake of its units, or that the units differ altogether from the units of any biological organism, etc. It is the existence of organs, not their condition, purpose or composition, that connotes the organism. Much of the discredit that has settled upon the term is due to misplaced endeavors to trace physiological parallels. The State is an organism of a type so distinct from animal or vegetal organism, that no details of structural resemblance may be assumed.

[16] *The Individual in the Animal Kingdom*, pp. 50, 142.

Every order of organic life develops its forms in its own way, not inferable from the characteristics of a different order. The facts of animal life would never enable one to form a concept of such an organism as a tree, and likewise the facts of vegetal life would never supply material for the concept of a mammal. The State comes within the category of organism not through any analogies of form or function with other organisms but solely because of the nature of its own being, as a product of social evolution.

CHAPTER IX

METHODOLOGY

§ 55. *Utility of the Naturalistic Concept*

The Social Hypothesis implies that the State is an organism. Acceptance of this proposition suggests inquiry as to how far and in what way the concept is applicable in scientific method. The case may be considered in several aspects, interpretation, classification and valuation.

As a principle of interpretation its utility has already been strikingly illustrated. It has been employed with marked success by anthropologists in elucidating the beginnings of religious, economic and governmental structure by exhibiting them as adaptations of the organism to the environment. A brilliant example of this method is Payne's account of institutional beginnings among the American

aborigines.[1] The genetic process he describes has been universally operative although results have varied in correspondence with difference in environment.

Evidence indicating that the formation of social structure is initiated by the instinct of self-preservation in the community has been made the basis of a doctrine that has become famous as Economic Determinism. It was originated by Marx and it holds a prominent place in the voluminous literature of Socialism. According to it all social factors are scientifically reducible to economic factors.[2] The discussion started by the enunciation of this doctrine is still going on without producing scientific consensus. Here as elsewhere the naturalistic concept has had an unsettling rather than a constructive effect. It is now generally admitted that economic factors are involved in transformations of human society

[1] *History of America,* Vol. I., pp. 303-507. This is a masterly discussion of the subject.

[2] For a systematic account of this doctrine see Professor Seligman's *Economic Interpretation of History.* Louis B. Boudin's *Theoretical System of Karl Marx* criticizes Seligman's exposition and gives an account from the standpoint of Socialism.

and that search for them is usually illuminative of process, but it is historically evident that other factors are operative. As Professor Seligman remarks: "There is not only an economic interpretation of history but an ethical, an aesthetic, a political, a jural, a linguistic, a religious and a scientific interpretation of history."[3] But according to the Marxians all these factors are reducible to economic factors.

This raises a problem such as occurs both in biology and in psychology, namely, whether succeeding phases of development can be causally explained in terms of preceding ones; that is to say, whether biologic process can be explained in terms of physics and chemistry, or consciousness in terms of organic structure and function. Labor upon such problems has so far extended knowledge of the concomitants of process without attaining such knowledge of the process itself as would supply a unified concept. At present philosophy seems disposed to find the unified concept in the field of psychology rather than in that of biology,

[3] Opus cited, p. 153.

and to make all knowledge an incident of psychic activity. According to this view the most unified concept is that of the mind establishing its own standards of reality, framing its own modes of thought, creating for its own service notions of space, time and causality, so that in the final analysis knowledge is but a form of Man's adaptation to his environment.[4] Such a change in Man's constitution as would provide a different range of percipience in his sense organs might establish contours and vistas very different from those which now determine notions of matter, form and energy.[5]

§ 56. *The Forms of the State*

The variety of the factors that supervene when personality emerges from the biologic process and their irreducible character sufficiently explain the futility of all attempts to establish a methodology of political science on the concept of the State as an organism.[6] The

[4] This appears to be the thesis of Bergson's *Creative Evolution.*

[5] See ante, p. 64.

[6] Cf. ante, Sec. 2.

traditional Aristotelian classification of State forms, so often criticized as inadequate, still holds the field with modifications insufficient to change its general character. The practical difficulties in the way of placing State forms upon an objective basis like that of the forms with which the naturalist deals seem to be insurmountable. The State is not apprehensible at all save as it is objectified in institutions. In a way the same is true of the organisms formed by insect communities. Their differentiation is definable only by characteristic structure, the shape and arrangement of cells, the physique and functions of the inhabitants. A similar method with State species would introduce racial groupings, but State species while affected by racial influence are not confined by racial lines. There is no fixed relation between the type of the community and the physical structure of its units as in the case of ants and bees. In the insect community the process of polymorphism has established community function in the bodily structure of the members of the community. In the State the unity is a psychical adjustment, and the

order is infinitely modifiable. Although the State originates as a biological product it emerges from that category in attaining the psychosphere. Psychological factors then dominate biological factors, and attempts to describe social activities in terms of biological process become inadequate. The fact that the psychical has evolved from the biological no more makes it similar than electricity is like steam.

Another source of difficulty is the fact that the State is an organism that we cannot view objectively as we do other organisms, since we ourselves are part of its unit life. The student of State species is somewhat in the position of a philosophic bee who surveys the hive from the inside, and hence construes its activities in terms derived from thought and experience as a member of its society. Thus valuations tend to become subjective. Moreover, the philosophic bee has to do with fixed structure. The observer of human society has to do with plastic structure and mutable conditions, and he has to reckon with psychological factors that are not constants but variables.

§ 57. *The Scope of Classification*

Thus the notion that State species can ever be exhibited in the same manner as biological species must be dismissed as impracticable. A more feasible task is to deal with governmental structure, and exhibit its principal types. As Sidgwick has remarked, "Political science aims like other sciences at ascertaining the relations of resemblance among the objects that it studies; it seeks to arrange them in classes, or to exhibit them as examples of types." But he points out that such methodizing is now limited by the very fragmentary character of our knowledge. Therefore for the present he prefers to limit consideration to "the principal forms of political society which the history of European civilization manifests" and which therefore possess "what may be called a morphological unity."[7] Sidgwick does not deny that the method is susceptible of larger application, but "if we try to begin at the beginning, as seems natural, we have to begin in almost utter darkness."[8]

[7] *Development of European Polity*, pp. 3, 4.
[8] Opus cited, p. 27.

This darkness is being dispelled to such an extent that extension and improvement of the method of political science may be reasonably expected. The present state of knowledge is at least sufficient to discredit the traditional notion that the civilized State is the only true form of the State, other varieties possessing significance only as they can be classed in serial order antecedent to the development of the civilized State. There is historical evidence of the past and present existence, in the East, of States of high cultural attainment, which cannot possibly be ranged with the civilized State of the West in any serial order, but the situation becomes comprehensible when we apply to the State the idea of the variation of species, and conceive of political development as proceeding on divergent lines with successions of supremacy as regards particular types. If in the present state of knowledge a comprehensive scheme of classification is impracticable, at least the fragmentary and provisional character of the present system can be recognized and classification should aim at genetic order so far as it is traceable.

There is still another aspect in which the naturalistic concept may be regarded, that of serving as a determinant of the validity of social and political theories. This branch of the inquiry calls for some examination of the corollaries of the Social Hypothesis.

CHAPTER X

FIRST PRINCIPLES IN POLITICS

§ 58. *Appearance and Reality*

Use of the naturalistic concept as a principle of valuation does not escape the pressure of subjectivism that has been found to clog its practical application in methodology, but here at least logical defense against illusion is readily available. Corrective influence from this source may be made so familiar as to cause the reality to be substituted for the appearance as a habit of thought. Although one may seem to see the sun rise any clear morning, every educated person is unhesitatingly aware that what really happens is quite different from the appearance. Some analogous education of ability to distinguish between reality and appearance is a prerequisite to successful use of the naturalistic concept as a determinant. One must be prepared for the

contingency of conflict with instinctive prepossessions or traditional notions.

The matter may be illustrated by the case of insects which all biologists admit are products of social evolution. If a bee or ant be conceived to possess self-consciousness its sense of autonomous individuality might be complete despite the fact that in the social insects individuality is socially created and maintained. To ordinary view, what might be called common sense, an isolated social bee or ant is a complete individual. Only patient, trained observation has disclosed the fact that apparently complete individuals are so dependent upon the arrangements of the community that apart from it some of the adult forms can no more feed themselves than a newborn human child. The hive bee or the colony ant cannot, as a matter of physiological fact, be made a Stateless creature by separating it from the community. Apparently a monad, it is still in reality a community-particle in its nature and in its needs. Extracted from the social order, its true individuality, far from being released and enlarged, is crushed and

injured. Now if Man be a social product, it follows that also in his case individual freedom cannot be identified with individual autonomy. Robinson Crusoe on his desert island is no more a Stateless creature than an isolated bee. Instead of attaining free individuality he has become the victim of defect that tends to extinguish his human individuality.

Acceptance of the naturalistic concept as a principle of valuation should therefore be rigorously conditioned upon logical order. If that is contradicted by appearances then the reality differs from the appearances, which is an incident of scientific knowledge that often happens. Everything depends upon the validity of the basic proposition. The definitions now to be offered are therefore to be taken as wholly contingent upon the truth of the Social Hypothesis.

§ 59. *Definitions*

The foregoing consideration of the biological antecedents of the human species suggests the following generalization:

PROPOSITION: Man is the product of Social Evolution.

Corollaries of this proposition affect the whole group of sciences pertaining to anthropology in the large sense of the word. They may be exhibited in several aspects as follows:

BIOLOGICAL

The State is the permanent and universal frame of human existence. Man can no more get out of the State than a bird can fly out of the air.

The State is an organism. It may be defined as an organic entity composed of human beings whose nature, relations and activities are conditioned by its own nature, relations and activities. It is derived from the formation of community in the animal species ancestral to Man. As in other organisms, the individual lives are subordinate to the general life in proportion as that is high.

The Undivided Commune is the primordial form of the State, and it antedates the differentiation of Man from the antecedent animal stock.

The Institution is particular structure formed in the State by processes of adaptive change in effecting adjustment to the environment. Such processes have been attended by variation of State species.

Government is institutional structure with coercive means for the discharge of directive and regulative functions. It is a primary organ of the State and its beginnings antedate the transition from animal nature to human nature.

The Individual is a distinct entity in the unit life of the State. The Individual is not an original but is a derivative.

POLITICAL

Man did not make the State; the State made Man. Man is born a political being. His nature was formed by government, requires government and seeks government.

The State is the unit of which all forms of Government and Society are the differentiation. Society in general is the State viewed in its distributive aspect.

The State is absolute and unconditioned in

its relation to its unit life. Government is conditioned by dependence of its functions upon structure and hence it is subject to inherent limitations. There is no absolute norm of Government but every species of the State tends to produce a type proper to its characteristics in its particular environment. Profound changes of environment produce profound changes of Government. State species unable to effect readjustments of structure to meet new conditions tend to disappear, so that from age to age there is a succession in State species analogous to that which takes place in biological species.

Government derives its authority from the State. The scope of its functions varies with the circumstances of State life and responds to the needs of State life.

Sovereignty is the supremacy of the State over all its parts. It has degrees, proportioned to the development of governmental structure, being greatest in advanced forms of the State.

ETHICAL

Rights are not innate but are derivative. They exist in the State but not apart from

the State. Hence rights are correlated with duties.

Liberty implies not absence of restraint but presence of order. It may be defined as an order agreeable to the prevailing sense of right whatever that may be. Therefore notions of Liberty differ in accordance with existing differences in the sense of right and they vary with changes in the sense of right.

The object of the State is the perfecting of Man, but the attainment of that object depends upon the perfecting of the State. The test of value in any institution is primarily not the advantage of the individual but the advantage of Society. Individual life enlarges by participation in a larger life; ascends by incorporation in a higher life.[1]

With the development of the above corollaries this inquiry into the natural history of

[1] The biological basis of this inference is admirably presented in the chapter on "Genetics and Ethics" in Professor Conklin's *Heredity and Environment.* Professor Conn's *Social Heredity and Social Evolution* is an able presentation of the ethical aspect of human evolution, but he assumes the existence of a difference between human and animal evolution which he does not explain.

the State is concluded. If the conclusions reached are well founded they establish the value of the naturalistic concept as a principle of valuation. It is evident that the corollaries have a direct bearing upon theory and practice as to the constitution of Society, the sphere of Government, the organization of the State, the nature and extent of public duty and of private right. Scientific determination of the nature of evolutionary process in the case of Man is therefore a matter of immense practical importance.

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