CHAPTER X.

THE EVIDENCE FROM THE INTELLECTUAL DIFFERENCES BETWEEN MEN AND WOMEN.

(This chapter, which was published in the *Popular Science Monthly* for June and July, 1879, under the title, "The Condition of Women from a Zoölogical Point of View," is reprinted here, almost without change.)

ZOÖLOGY is the scientific study of the past history of animal life, for the purpose of understanding its future history. Since man has, in part at least, conscious control of his own destiny, it is of vital importance to human welfare in the future that we should learn, by this comparative study of the past, what are the lines along which progress is to be expected, and what the conditions favorable to this progress, in order that we may use our exceptional powers in harmony with the order of nature.

The study of the growth of civilization shows that human advancement has been accompanied by slow but constant improvement in the condition of women, as compared with men, and that it may be very accurately measured by this standard. Judging from the past, we may be sure that one of the paths for the future progress of the race lies in this improvement, and the position of women must therefore be regarded as a most important social problem. If there is, as I shall try to show, a fundamental and constantly increasing difference between the sexes; if their needs are different, and

if their parts in the intellectual, moral, and social evolution of the race are, like their parts in the reproductive process, complemental, the clear recognition of this difference must form both the foundation and superstructure of all plans for the improvement of women.

If there is this fundamental difference in the sociological influence of the sexes, its origin must be sought in the physiological differences between them, although the subject is now very far removed from the province of ordinary physiology. While we fully recognize the insignificance of the merely animal differences between the sexes, as compared with their intellectual and moral influence, it is none the less true that the origin of the latter is to be found in the former; in the same manner —to use a humble illustration—that the origin of the self-denying, disinterested devotion of a dog to his master is to be found in that self-negation which is necessary in order that a herd of wolves may act in concert under a leader, for the general good.

In order to trace the origin and significance of the differences which attain to such complexity and importance in the human race, we must carry our retrospect back far beyond the beginning of civilization, and trace the growth and meaning of sex in the lower forms of life. In so doing I shall ask attention to several propositions which may not at first appear to have any bearing upon our subject, or any very close relation to each other. I shall then try to show what this relation is, and point out its bearing upon the education of women.

Every organism which is born from an egg or seed is a resultant of the two systems of laws or conditions which may be spoken of abstractly as the law of heredity and the law of variation, or, to use the old teleological terms, each organism is a mean between the principle of adhe-

rence to type and the principle of adaptation to conditions.

That like produces like is universally but never absolutely true. The offspring resembles its parents in all fundamental characteristics. The human child, for instance, resembles its parents in the possession of all the characteristics which distinguish living things from those which are not alive, as well as those which distinguish animals from plants. The chemical, physical, and physiological changes which take place in its body and the histological structure of its tissues are like those of its parents, and its various organs are the same in form and function. All the characteristics which unite it with the other vertebrates, as a member of the subkingdom Vertebrata, are like those of its parents, and also those which place it in the class Mammalia, and in its proper order, family, genus, and species. It also shares with its parents the features or race characteristics of the particular tribe or race to which they belong. If they are Chinese, Indians, or negroes, the child belongs to the same race, and manifests all the slight, superficial peculiarities of form, constitution, and character by which that race is distinguished. Even the individual peculiarities of the parents, intellectual and moral as well as physical, are now known to be hereditary. Since this holds true of any other animal or plant, we must recognize the universality of the law of heredity, but we must not overlook the equally well-established fact that each organism is the resultant of this law and another, the law of variation. The child is like its parents, but not exactly like them. It is not even a compound of characteristics found in one or the other of them, but has individual peculiarities of its own; slight variations which may not have existed in either

parent, or in any more remote ancestor. The slight individual differences are so overshadowed by the much more conspicuous resemblances due to heredity—with which they compare about as the green buds at the tips of the twigs of a large tree compare with the hard wood of the trunk and branches, the growth of previous years—and they are so fluctuating and inconstant, that their importance may easily escape attention. Careful observation shows, however, that every characteristic may vary: those distinctive of the class or order as well as those which mark the species or variety. The variations may manifest themselves in the adult, or at any other period in the life of the individual. Even the eggs have individualities of their own, and among many groups of animals the eggs of the same parent, when placed under precisely similar conditions, may differ in the rate and manner of development. Although most of these individual differences are transient, and disappear within a few generations, there can now be no doubt that those which tend to bring the organism into more perfect harmony with its environment, and are therefore advantageous, may be established as hereditary features, through the action of the law of the survival of the fittest; and it is hardly possible to over-estimate the value of the evidence which paleontology and embryology now furnish to prove that all hereditary characteristics, even the most fundamental, were originally individual variations.

The series of hereditary structures and functions which makes up the life of an organism is constantly being extended by the addition of new features, which, at first mere individual variations, are gradually built into the hereditary life history. In this way newly acquired peculiarities are gradually pushed further and further from what may be called the growing end of the series,

by the addition of newer variations above them. It can also be shown that from time to time the peculiarities at the other end of the series, the oldest hereditary features, are crowded out of the life of the organism, and dropped, so that an animal which is high in the scale of evolution does not repeat, in its own development, all of the early steps through which its most remote ancestors have passed. The series of hereditary characteristics, thus growing at one end and fading away at the other, gradually raises the organism to new and higher stages of specialization, and its evolution by variation and heredity may be compared with the growth of a glacier.

The slight individual differences are represented by the new layers of snow added by the storms to the deposit which fills the valley in which the glacier arises. The snows which are soon blown away are those variations which, being of no use, soon disappear; while the snow which remains in the valley, and is gradually converted into ice, represents those individual differences which are seized upon by natural selection, and gradually rendered hereditary and constant. The long stream of ice stretching down to lower regions, and made up of the snows of thousands of winters, receiving new additions at its upper end, and at the same time melting away at its lower, is no bad representation of the long series of hereditary features, once variations, which form so large a part of every organism. If the glacier were not in motion, but stationary, so that the melting of the oldest portion and the additions to its upper end should gradually carry the body of ice up to higher and higher levels, we should have a very perfect parallel to the evolution of an organism by variation and heredity.

The steps in this progress are embodied in a long series of individuals, each of which is, either immediately

or indirectly, the product of a fertilized egg or seed, through which the laws of heredity and variation act, to bind the separate individuals into a progressive whole. The seeds and eggs with which we are most familiar are highly complicated, and consist of the protoplasmic germ, which is intimately united to a mass of food destined to be converted into protoplasm during development.

The germ with its food forms the yolk of such an egg as that of the bird, and is surrounded by layers of albumen, which are also used as food, and by a complicated series of investing membranes. It originates in a special organ, the ovary, and is incapable of perfect development until it has been fertilized by the male reproductive element. In its earliest stage of growth it is simply one of the cells or histological elements of the ovary, but as it grows it soon becomes very much larger than an ordinary cell, and its protoplasm becomes filled with food material, and the outer layers and walls are added to it. In many animals the external envelopes are wanting, and the egg is simply a very large ovarian cell, filled with food material, and capable of developing, under the influence of the male element, into a new organism. In still other animals the food-yolk is wanting, and the egg is small, and does not differ from an ovarian cell; and in still other animals the ovaries are lacking, and cells may become specialized as ova in various parts of the body.

The series is so complete that we may be certain that we are comparing strictly homologous structures, and we may therefore conclude that the egg is nothing but one of the cells of the body, which may, when acted upon by the male element, develop into a new organism, substantially like its parents, with some of the individual peculiarities of each of them, and also with new peculiarities of its own.

From the necessity for impregnation in most cases, it has been assumed that the essential function of the male element is to quicken the germ, and thus start the process of development. It is true that it does have this function in many cases; but comparative study shows that the egg itself is alive, and does not need quickening, and that this must be regarded as a secondary and derived function of the male element, not the essential and primitive function.

That this is the case is shown by the fact that, while the earlier stages in the developmental process are sufficiently alike in different animals to admit of a comparison between them, the stage at which impregnation takes place is not fixed, but variable. In some cases the ovarian egg remains without change until it is impregnated; and the first step in the developmental process, the disappearance of the germinative vesicle, is the immediate result of the union of the spermatozoa with the ovum. In other cases the germinative vesicle disappears, and the egg then remains inactive until it is impregnated; and this is followed at once by segmentation. In other cases segmentation takes place without impregnation. Other eggs develop still further; and, finally, there are many animals whose unfertilized eggs not only commence but complete the developmental process, and give rise to adults which may in turn produce young in the same way: and this may go on indefinitely, without the intervention of a male. The queen bee is able to lay fertilized or unfertilized eggs, and they are equally alive and capable of development.

These facts show conclusively that the essential function of the male element is not the vitalization of the germ.

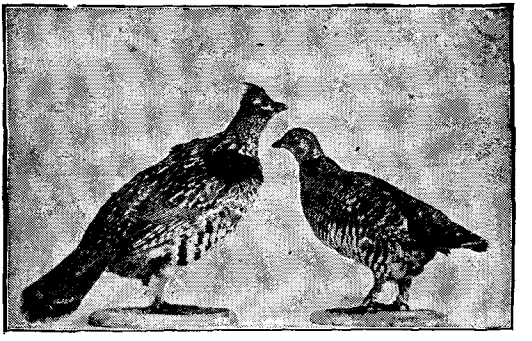
Turning now to another aspect of our subject, we find

that among plants, and among all the lower and simpler groups of animals, new individuals are produced by the various forms of asexual generation, as well as sexually. In certain animals, such as the tunicates, this form of generation is highly specialized, and the stolon from which new individuals are budded off is a highly complex structure, which contains cells or tissues derived from all the essential organs and systems of the parent, and from these the corresponding organs and systems of the new individual are derived. As a rule, however, the process of budding is very simple: a mass of unspecialized cells at some definite point upon the body of the parent animal or plant becoming converted into a new individual, instead of contributing to the further growth of the old. Among the lower animals, such as the hydroids and sponges, the process is still more simple, and cells may become converted into a bud at almost any point upon the body of the parent. That the process of reproduction by budding is not in any way absolutely distinguished from the process of ordinary growth by cell-multiplication, is shown by the fact that an accident may determine which of these processes is to result from the activity of a given cell.

Comparison shows that there is, on the one hand, no essential distinction between ordinary growth and reproduction by budding, and, on the other hand, none except the necessity for impregnation to distinguish asexual from sexual reproduction. All these processes are fundamentally processes of cell-multiplication. As none of the animals with which we are thoroughly familiar reproduce asexually, we are unable to make any very exact comparison of the results of the two processes of reproduction in animals; but among plants such comparison can be made without difficulty, and will be found to show

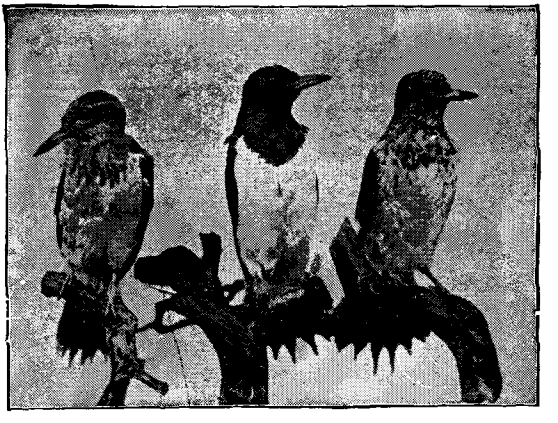
that variation is much more marked and common in plants raised from fertilized seed than in those raised by budding. A marked bud-variation is a very rare occurrence, but in many cases the tendency of plants reared from seeds to differ from the parents is so great that choice varieties are propagated entirely by buds. It is almost hopeless to attempt to propagate a choice variety of grape or strawberry by seeds, as the individuals reared in this way seldom have the valuable qualities of their parents, and, although they may have new qualities of equal or greater value, the chances are of course greatly against this, since the possibility of undesirable variation is much greater than the chance of a desirable sport. There is no difficulty, however, in perpetuating valuable varieties of these plants by asexual reproduction.

Putting together these various propositions—that the evolution of life has been brought about through the combined action of the law of heredity and the law of variation; that in all except the simplest organisms the process of sexual reproduction by ova which have been acted upon by the male element is met with; that the ovum is alive, and capable of development in itself, and that the essential function of the male element is something else than the vitalization of the ovum; that the process of sexual reproduction differs from the process of asexual reproduction only in the occurrence of impregnation, while the result of the former process differs from the result of the latter in its greater variability—we seem warranted in concluding that the ovum is the material medium through which the law of heredity manifests itself, while the male element is the vehicle by which new variations are added. The ovum is the conservative and the male element the progressive or variable factor in the process of evolution of the race as



MALE. FEMALE.

MALE AND FEMALE RUFFED GROUSE.



YOUNG MALE. ADULT MALE. ADULT FEMALE.

ADULT MALE, YOUNG MALE AND ADULT FEMALE OF THE RED HEADED WOODPECKER.

[*From photographs of stuffed specimens in the collection at Druid Hi Park, Baltimore.*]

well as in the reproduction of the individual. The adequate statement of the evidence upon which this generalization rests, or even a full statement of the generalization itself, with its qualifications, would be out of place here, but the facts which have been given seem to be sufficient to warrant its use as one step in our argument in regard to the relations of the sexes. From this as our basis we will now trace the evolution of sex.

Among the lowest organisms, animal and vegetable, multiplication is usually by the various forms of asexual generation, budding or fission, or cell-multiplication—an organism which has by ordinary growth increased in size beyond the limit of exact harmony with its environment, dividing in this way into two, like each other as well as like their parent. In this way the preservation of the established characteristics of the species—heredity—is provided for, but in order that progress should take place, by the preservation of favorable varieties, variation must also be provided for. This is accomplished by the process which is known as conjugation: two protoplasmic organisms approach, come into contact, and a transfusion or mixture of the semi-fluid contents of their bodies takes place. The result of this process is the production of new individuals which, deriving their protoplasm from two parents which are not exactly alike, are themselves different from either of them, and have individual peculiarities which are, it is true, the resultant of the peculiarities of the parents, but which are nevertheless new variations.

In the simplest forms of conjugation the functions of both parents appear to be identical, but in organisms which are a little more specialized we find male and female reproductive bodies, and the offspring is the result of the union of the male element of one individual with

the female element of another; that is, we have true sexual reproduction in its simplest form.

Among the lower animals and most plants both sexes are united in the same individual, but the law of physiological division of labor, the principle that an organ or organism, like a machine, can do some one thing better and with less expenditure of force when it is specially adapted to this one thing than when it is generally adapted for several functions, would lead to the preservation by natural selection of any variations in the direction of a separation of the sexes, and we should therefore expect to find among the higher animals what we actually do find—the restriction of the male function to certain individuals, and the restriction of the female function to others. From this time forward the male is an organism specialized for the production of the variable element in the reproductive process, and the female an organism specialized for the production of the conservative element. We soon meet with structural peculiarities adapted to aid and perfect the performance of these respective functions; and the various organs, habits, and instincts by which, among the higher animals, the *rearing of young is provided for, form one of the most* interesting chapters of natural science. On *a priori* grounds we should expect a still greater specialization to make its appearance. Since the male organism has for its function the production of the variable reproductive element, and since variations which originate in a male have their perpetuation especially provided for, it would clearly be of advantage that the male organism should acquire a peculiar tendency to vary, and any steps in this direction would accordingly be seized upon by natural selection and perpetuated. The female organism, on the other hand, having for its function the

transmission of the established hereditary features of the species, we should expect the female to gradually acquire a tendency to develop these general characteristics more perfectly than the male. The male organism would thus gradually become the variable organism, as well as the transmitter of variations, and the female organism would become the conservative organism, as well as the originator of the conservative element in reproduction.

The study of the higher forms of life shows that this specialization has actually taken place in many cases, and that, in nearly all cases in which the sexes differ in peculiarities not actually concerned in reproduction, the male has varied more than the female. The amount of variation which any organism has lately undergone may be learned in two ways—by a comparison of allied species, and by a comparison of the adult with the young. In a genus which comprises several species the characteristics which these species have in common are due to heredity from a common ancestor, and are therefore older than features which are confined to any one species. Now, it is a well-known ornithological law that the females of allied species of birds are very much more alike than the males, and that in some cases where the females can hardly be distinguished the males are very conspicuously different—so much so that there is not the least danger of confounding them. Countless examples will present themselves to any one who is at all familiar with birds, and those who are not can at once find ample proof by glancing through any illustrated work on ornithology—Gould's "Humming-Birds," for example.

The greater variability of the male is also shown by a comparison of the adult male and female with the immature birds of both sexes. Since the growing animal tends to recapitulate, during its own development, the

changes through which its ancestors have passed, substantially in the order in which they first appeared, it follows that, in cases where the sexes are unlike, the one which is most different from the young is the one which has varied. Now, it is only necessary to compare the nearly full-grown young of our domestic fowls with the adult cock and hen, to perceive that the adult hen agrees with the young of both sexes in lacking such male characteristics as the highly ornamented tail-feathers, the brilliant plumage, the distended comb, the spurs, and the capacity to crow. Countless similar illustrations might be given to show the great tendency of the male to vary, but the above are sufficient for the purposes of our argument. As both sexes usually retain the more general specific and generic characteristics, and are alike as far as these are concerned, it is a little more difficult to show the conservative constitution of the female than it is to prove the male tendency to vary. Among the Barnacles there are a few species the males and females of which differ remarkably. The female is an ordinary barnacle, with all the peculiarities of the group fully developed, while the male is a small parasite upon the body of the female, and is so different from the female of its own species, and from all ordinary barnacles, that no one would ever recognize, in the adult male, any affinity whatever to its closest allies. All of the hereditary race characteristics are wanting: the limbs, digestive organs, and most of the muscles and nerves have disappeared, as they are not needed by a parasitic animal; and the male is little more than a reproductive organ attached to the body of the female. It is only when the development of the male is studied that we obtain any proof of its specific identity with the female. The young of both sexes are alike, and the developing

male shares with the female the characteristics which unite them to the other barnacles, and which are due to descent from a common form. The female keeps these hereditary characteristics through life, while the male soon loses them entirely.

These facts seem to be sufficient to prove that the specialization which we should expect to find among the higher animals with separate sexes does exist, and that the male organism is especially and peculiarly variable, and the female organism especially and peculiarly conservative.

Leaving this aspect of our subject for the present, let us look at it from a somewhat different point of view. The history of the evolution of life has not only an objective side, but something which may with perfect propriety be spoken of as a subjective aspect. The progress which is shown objectively as greater and greater specialization of structure, and a closer and closer adaptation of the organism to the conditions of the external world, has been well described by Herbert Spencer, as the increasing delicacy, exactness, and scope of the adjustment between internal and external relations. Seen in its subjective aspect, each of the steps in the growth of this adjustment is a recognition of a scientific law, the perception of the permanency of a relation between external phenomena; for science is simply the recognition of the order of nature.

When a Rhizopod discriminates between the contact of a large body and that of a small one, and draws in its pseudopodia and shrinks into as compact a shape as possible in order to escape the danger which the past experience of the race has shown to be related to the former sensation, or when it expands its pseudopodia in order to ingulf and digest the body which has caused

the second sensation, it furnishes proof that its scientific education has begun. *Of course I do not intend to* say that the order of nature, according to which the Rhizopod adjusts its actions, is consciously apprehended, but simply that it is the experience of the existence of this order which determines the action. Throughout the whole course of the evolution of one of the higher organisms each variation which served to bring about a closer harmony between the organism and its environment, and was accordingly preserved by natural selection, and added on to the series of hereditary structures and functions, was in its subjective aspect the experience of a new external connection, a new step in the recognition of natural law, an advance in scientific knowledge. Human advancement is of course widely different from the slow progress of the lower forms of life, but it is fundamentally the same. Experience is continually spreading over new fields, and bringing about a more wide and exact recognition of the persistent relations of the external world. The scientific laws thus recognized then gradually take the shape of principles or laws of conduct, according to which actions are determined in those cases where experience has shown that they apply. Those laws of conduct which have been *long recognized gradually assume the shape of* habits or intuitions, according to which conduct is almost unconsciously regulated, and the habit finally becomes established as one of the hereditary characteristics of the race.

We are apt to confine our attention to the subjective side of human advancement, and to neglect the structural side, and at the same time to neglect the subjective side of the evolution of the lower forms of life, and to confine our attention to the structural side, but of

course no one can doubt that a new habit is represented by a new specialization of structure, and is transmitted, like any other peculiarity, by heredity.

If this is so, and if the female organism is the conservative organism, to which is intrusted the keeping of all that has been gained during the past history of the race, it must follow that the female mind is a storehouse filled with the instincts, habits, intuitions, and laws of conduct which have been gained by past experience. The male organism, on the contrary, being the variable organism, the originating element in the process of evolution, the male mind must have the power of extending experience over new fields, and, by comparison and generalization, of discovering new laws of nature, which are in their turn to become rules of action, and to be added on to the series of past experiences.

Our examination of the origin and significance of the physiological differences between the sexes, and of the parts which they have taken in the progress of the past, would therefore lead us to expect certain profound and fundamental psychological differences, having the same importance ; and it will be interesting to examine what these intellectual and ethical differences are, and how far experience and the common consent of mankind accord with the demands of our hypothesis.

If, as we suppose, the especial and peculiar function of the male mind is the expansion of our circle of experience ; the more exact apprehension of all our relations to the external world ; the discovery of the laws of thought, of society, of physiology, and of the material universe, and of the bearing of these laws upon individual conduct—it will follow that men must excel women in their power to discover the manner in which a new external relation shall be met and provided for by a new

internal adjustment. In a case where our instincts, intuitions, feelings, or past experiences furnish no guide to conduct, the judgment of a man as to the proper course of action will be of more value than the judgment of a woman.

On the other hand, only a very small proportion of our actions are directed to new conditions; experience has already determined the proper conduct in all the circumstances upon which our preservation and well-being most directly depend; and action in these circumstances does not demand comparison and judgment, while it must usually be so prompt as to forbid deliberation or thought. The power of quick and proper action in the innumerable exigencies of ordinary life, independent of reflection, is at least equally important with the power to extend our field of rational action.

By the former power we hold on to what has already been gained, while the latter power enables us to increase our advantage in the struggle for existence, and to widen our control over the laws of nature. Psychological variation is the result of the latter power, psychological heredity the result of the former, and psychological evolution and human progress the result of their combined action.

If the female mind is especially rich in the fruit of this past experience, we should expect women to excel men in the promptness and accuracy with which the conduct of ordinary life is decided, and in the range of circumstances over which this power of rational action without reflection extends; that is, we should expect men to excel in judgment, women in common sense.

This important and fundamental difference between the male intellect and the female must have a very great influence in determining the occupations or professions

in which each sex is most likely to succeed when brought into fair competition with the other sex.

The originating or progressive power of the male mind is shown in its highest forms by the ability to pursue original trains of abstract thought, to reach the great generalizations of science, and to give rise to the new creations of poetry and art. The capacity for work of this character is of course very exceptional among men; and, although history shows that it is almost exclusively confined to men, it must not enter into our conception of the ordinary male mind. The same power of originating and of generalizing from new experiences is possessed, in a lesser degree, however, by ordinary men, and gives them an especial fitness for and an advantage over women in those trades, professions, and occupations where competition is closest, and where marked success depends upon the union of the knowledge and skill shared by competitors, to the inventiveness or originality necessary to gain the advantage over them.

Women, on the other hand, would seem to be better fitted for those occupations where ready tact and versatility are of more importance than the narrow technical skill which comes from apprenticeship or training, and where success does not involve competition with rivals.

The adequate examination of this aspect of our subject would furnish material for a treatise, and it is out of place here, as all that is necessary for the purposes of our argument at present is to point out the difference, and to show that it is the necessary consequence of our view of the manner in which sex has been evolved: that it is not due to the subjection of one sex by the other, but is the means by which the progress of the race is to be accomplished.

Turning now to another part of our subject, and bear-

ing in mind the fact that by far the greater part of the external relations to which our actions are adjusted, and to which it is necessary that they should conform, in order to secure our preservation, safety, and welfare, are fixed and definite, and have been substantially unchanged for almost, if not quite, the whole period of human development, we see at once that, if the female mind is especially rich in the past experiences of the race, so far as these have resulted in laws of conduct, it follows that, since these experiences have been the same for all members of the race, there must be a greater uniformity in female character than in male character. As this statement is very abstract, I will try to put it in a less general form:

Experience of the order of events has shown that under certain circumstances, of frequent occurrence, certain conduct is proper and conducive to welfare, while its opposite is hurtful.

This experience being constantly repeated, the tendency to do the proper thing when the circumstances occur gradually takes the shape of an instinct, intuition, habit, or law of duty. Henceforward, all persons who have the impulse which has thus been formed will act in the same way when the circumstances arise, but two persons who have not the impulse will follow their individual judgments, and may or may not act alike.

As the female mind is characterized by the possession of these impulses, it is plain that it must be much more easy for one average woman to predict what another average woman will do, or feel, or think, or say in any given case, than for one average man to predict in the same way of another average man.

We may carry this line of thought a little further. Since male minds have the element of originality, male characters differ among themselves; but, since all are

members of the same species, fundamental similarity must underlie this individual diversity, and this fundamental similarity must subsist between female and male characters also. The average female character will therefore have more resemblance to two or more male characters than these latter will have to each other, and accordingly, in all cases where relationship or education has not led two men into the same way of looking at things, a woman will be better able than either of them to foresee the conduct of the other under given circumstances, and of course the advantage of a woman over a man in understanding the conduct of a woman will be still greater.

Since, on the whole, the differences between male characters are slight when compared with their resemblances, and since the points of resemblance are also points of resemblance to women, we should expect that, although the power of women to foresee male conduct is greater than the power of men to foresee female conduct, the superiority is not so marked as in the other three cases. This superiority of women in predicting conduct will be shown by their possession, to a much greater degree than men, of the power to influence or persuade as distinguished from the power to convince or move by arguments; for to convince is to innovate and place matters in a new light, but the secret of influence is a vivid appreciation of the established motives and incentives to conduct.

The relative power of persuasion of the two sexes, then, may be tabulated as follows:

The power of	To foresee the conduct of or to influence	Is greater than the power of	To foresee the conduct of or to influence
Women	Women	Men	Men
Women	Women	Men	Women
Women	Men	Men	Men
Women	Men	Men	Women

It seems hardly necessary to point out the fact that in cases where sex is a motive and influences the conduct directly, the law stated in this table does not hold.

According to our hypothesis, the first line of the table should give the arrangement in which the difference is greatest. In the next line the difference is less; still less in the next; and least of all in the last case. In all cases, however, the superiority of women in this respect should be very marked.

Since our feelings are necessarily much more numerous than our judgments, we should expect to find it much more easy to persuade either a man or a woman than to convince; but, if our theory is correct, the advantage of influence over argument should be much greater when a woman is to be moved than when the effort is directed to a man.

Another difference between the sexes will at once be seen to follow from the above parallel. Since male character has the variable element, and may vary toward either good or bad, it follows that the ideally perfect male character will be more hard to define and more seldom realized than the ideal female character. It is difficult to prove such a statement as this, for the sentiments upon which individual opinion of the subject is based hardly admit of exact statement, but that there is an accepted standard of female excellence, and that the women who realize it are not rare exceptions, can, I think, be shown by the study of female character as depicted by dramatists, novelists and poets. An appeal to this test is unfavorable to our hypothesis, for characters are selected for novels or poems on account of their originality; but I think that any one who will review Shakespeare, Thackeray or George Eliot with the subject in mind, and who will compare the more important female characters, will find that they might be trans-

members of the same species, fundamental similarity must underlie this individual diversity, and this fundamental similarity must subsist between female and male characters also. The average female character will therefore have more resemblance to two or more male characters than these latter will have to each other, and accordingly, in all cases where relationship or education has not led two men into the same way of looking at things, a woman will be better able than either of them *to foresee the conduct of the other under given circumstances*, and of course the advantage of a woman over a man in understanding the conduct of a woman will be still greater.

Since, on the whole, the differences between male characters are slight when compared with their resemblances, and since the points of resemblance are also points of resemblance to women, we should expect that, although the power of women to foresee male conduct is greater than the power of men to foresee female conduct, the superiority is not so marked as in the other three cases. This superiority of women in predicting conduct will be shown by their possession, to a much greater degree than men, of the power to influence or persuade as distinguished from the power to convince or move by arguments; for to convince is to innovate and place matters in a new light, but the secret of influence is a vivid appreciation of the established motives and incentives to conduct.

The relative power of persuasion of the two sexes, then, may be tabulated as follows:

The power of	To foresee the conduct of or to influence	Is greater than the power of	To foresee the conduct of or to influence
Women	Women	Men	Men
Women	Women	Men	Women
Women	Men	Men	Men
Women	Men	Men	Women

differences between the sexes which the study of the evolution of organisms would lead us to expect. I shall now quote a few extracts from authors whose writings upon the position of women are accepted as valuable contributions to our knowledge of the subject, in order to show that they have recognized the existence of the very differences which we have been led, by theoretical reasoning, to expect.

Mill's essay on "The Subjection of Woman" must be regarded as the most important contribution to the discussion of the relative positions of the sexes as relating to future progress; and it is interesting to note that, while he holds that the existing differences are not natural, but are due to the subjection of one sex by the other, he fully recognizes certain profound and characteristic differences, which are precisely in accordance with the present view of their origin and purpose. Mill's evidence as to important differences between the sexes is of the greatest value, both on account of the weight of his opinion in itself, and on account of his being in this case an unwilling witness. He says: "Looking at women as they are known in experience, it may be said of them, with more truth than belongs to most generalizations on the subject, that the general bent of their talents is toward the practical. This statement is conformable to all the public history of women in the present and in the past. It is no less borne out by common and daily experience. Let us consider the special nature of the mental capacities most characteristic of a woman of talent. They are all of a kind which fits them for practice, and makes them tend toward it. What is meant by a woman's capacity of intuitive perception? It means a rapid and correct insight into present facts. It has nothing to do with general principles.

Nobody ever perceived a scientific law of nature by intuition, or arrived at a general rule of duty or prudence by it. These are results of slow and careful collection and comparison of experience; and neither the men nor the women of intuition usually shine in this department, unless, indeed, the experience is such as they can acquire by themselves. . . . To discover general principles belongs to the speculative faculty; to discern and discriminate the particular cases in which they are or are not applicable constitute practical talent; and for this women, as they now are, have a peculiar aptitude." It is only necessary to change two or three words in this last sentence in order to show its complete agreement with the demands of our theory. Its meaning will not be altered by the following reading, which serves to bring out more clearly its implications: To discover general principles belongs to the progressive aspect of the mind, which is most strongly developed in men; to preserve and apply the general principles which are already established belong to the conservative side of the mind, and for this women, as they have been made by the evolution of the race, have and should have a peculiar aptitude. Mill continues as follows: "I admit that there can be no good practice without principles, and that the predominant place which quickness of observation holds among a woman's faculties makes her particularly apt to build over-hasty generalizations upon her own observation, though at the same time no less ready in rectifying these generalizations as her observation takes a wider range. But the corrective to this defect is access to the experience of the human race; general knowledge—exactly the thing which education can best supply."

This sentence, when viewed in connection with our present theory of the relations of the sexes, gives the key

to the question of female education—for that form of education which supplies the general knowledge which is so important for the correct application of principles to special cases is culture, as distinguished from the technical training which looks to the discovery of new laws.

The next passage which I shall quote is of the greatest importance, for, founded as Mill's autobiography and numerous passages in his various works tell us it is, upon the personal experience of his life, it contains the germ of the idea which, if fully investigated, might have led him to entirely remodel his essay upon women; the idea that the sexes do not naturally stand in the relation of superior and inferior, nor in that of independent equals, but are the complemental parts of a compound whole. He says: "This gravitation of women's minds to the present, to the real, to actual fact, while in its exclusiveness it is a source of errors, is also a most useful counteractive of the contrary error. The principal and most characteristic aberration of speculative minds, as such, consists precisely in the deficiency of this lively perception and ever-present sense of objective fact. . . . *Hardly anything can be of greater value to a man of* theory and speculation, who employs himself, not in collecting materials of knowledge by observation, but in working them up by processes of thought into comprehensive truths of science and laws of conduct, than to carry on his speculations in the companionship, and under the criticism, of a really superior woman. There is nothing comparable to it for keeping his thoughts within the limits of real things, and the actual facts of nature. Women's thoughts are thus as useful in giving reality to those of thinking men as men's thoughts in giving width and largeness to those of women." Here we have a clear recognition of the law that width and largeness, mental

growth, originate in the male, and are then preserved by women, and the context leaves no room to doubt that the "really superior woman" which filled the author's memory at the time this passage was written, was a woman in whom this feminine characteristic was well developed; that she was a woman filled with the fruits of human experience; and it is a little strange that he fails to see that the relation with which, for a man of speculation, there is nothing comparable, may have a wider value, and be of the greatest importance to humanity as a whole.

The next passage which I shall quote is still more to the point. He says: "Let us now consider another of the admitted superiorities of clever women, greater quickness of apprehension. Is this not pre-eminently a quality which fits a person for practice? In action everything depends upon deciding promptly. In speculation nothing does. A mere thinker can wait, can take time to consider, can collect additional evidence; he is not obliged to complete his philosophy at once lest the opportunity should go by. The power of drawing the best conclusion possible from insufficient data is not, indeed, useless in philosophy; the construction of a provisional hypothesis consistent with all known facts is often the needful basis for further inquiry. But this faculty is rather serviceable in philosophy than the main qualification for it; and for the auxiliary as well as for the main question the philosopher can allow himself any time he pleases. He is in no need of doing rapidly what he does; what he rather needs is patience to work on slowly until imperfect lights have become perfect, and a conjecture has ripened into a theorem. For those, on the contrary, whose business is with the fugitive and perishable—with individual facts, not kinds of facts—rapidity of thought

is a qualification next only in importance to the power of thought itself. He who has not his faculties under immediate command in the contingencies of action might as well not have them at all. He may be fit to criticise, but he is not fit to act. Now it is in this that women, and the men who are most like women, confessedly excel. The other sort of man, however pre-eminent may be his faculties, arrives slowly at complete command of them; rapidity of judgment and promptitude of judicious action, even in the things he knows best, are the gradual and late result of strenuous effort grown into habit."

I have quoted these passages from Mill at length, as they give a very clear although somewhat narrow statement, by the strongest advocate of the fundamental likeness of the sexes, of what I take to be the most important psychological difference between them.

According to Mill—and I think that universal experience will justify his view—the highest type of woman is distinguished by her power of intuition, by her concrete acquaintance with the laws and principles which have been established by experience and generalization, by a constitutional knowledge of these laws which amounts to habit, so that she is able to recognize in actual practical life the action which is proper in any given case, without the necessity for a slow process of comparison and thought; by that immediate command of the faculties which is necessary for action.

This power of correctly and promptly applying the established scientific laws, which are the result of all the experience of the past, to the actions of ordinary practical life, is common sense, as distinguished from originality.

The highest type of male intelligence, on the other hand, is distinguished by the power to abstract and com-

pare, and by a slow process of thought to reach new generalizations and laws, and to see these in their abstract and ideal form, freed from all the complications of their concrete manifestations. To this power is often joined a woful and disastrous lack of common sense, or power of prompt and proper decision and action in special cases.

Lecky, in his "History of European Morals," gives an excellent summary of the most marked differences between the male mind and the female; and, although we do not agree with him in thinking that a departure from the male type is in all cases to be regarded as inferiority, we cannot fail to note how exactly his account agrees with the demands of our hypothesis.

He says: "Intellectually a certain inferiority of the female sex can hardly be denied when we remember how almost exclusively the foremost places in every department of science, literature, and art have been occupied by men; how infinitesimally small is the number of women who have shown in any form the very highest order of genius; how many of the greatest men have achieved their greatness in defiance of the most adverse circumstances, and how completely women have failed in obtaining the first position, even in music and painting, for the cultivation of which their circumstances would appear most propitious. It is as impossible to find a female Raphael or a female Handel as a female Shakespeare or a female Newton. Women are intellectually more desultory and volatile than men; they are more occupied with practical instances than with general principles; they judge rather by intuitive perception than by deliberate reasoning or past experience. They are, however, usually superior to men in nimbleness and rapidity of thought, and in the gift of tact, the power of seizing rapidly and faithfully the finer impulses of feeling, and

they have therefore often attained very great eminence as conversationalists, as actresses, and as novelists. In the ethics of intellect they are decidedly inferior. Women very rarely love truth, though they love passionately what they call 'the truth,' or opinions they have received from others. They are little capable of impartiality or of doubt; their thinking is chiefly a mode of feeling; though very generous in their acts, they are rarely generous in their opinions, and their leaning is naturally to the side of restriction. They persuade rather than convince, and value belief rather as a source of consolation than as a faithful expression of the reality of things. They are less capable than men of distinguishing the personal character of an opponent from the opinions he maintains. Their affections are concentrated rather on leaders than on causes, and if they care for a great cause it is generally because it is represented by a great man, or connected with some one whom they love. In politics their enthusiasm is more naturally loyalty than patriotism. In benevolence they excel in charity rather than in philanthropy." While I cannot believe that Lecky's statement is entirely unprejudiced, I think no one will deny that the views which I have quoted agree in the main with those which have gained general acceptance in the past. At the present time, however, there is a growing tendency to regard the relations of the sexes as due in great part to male selfishness; and while the substantial correctness of our view of the differences between the male and the female character is acknowledged, its origin is attributed to the "subjection" of women by men. In this paper I have attempted to present reasons, which I believe are new, for regarding the differences as natural and of the greatest importance to the race.

Those who acknowledge the weight of my argument, as applied to evolution in the past, may, however, question its applicability to the human evolution of the future. It may fairly be urged that while we grant that the course of evolution from the lower forms of life up to rational man has been by the slow process of variation and heredity, we have now passed into a new order of things, and the great advances of the human race have been and now are brought about by the much more rapid and totally dissimilar process of intelligent education. It may be urged that heredity does very little more for the civilized than for the savage child, and that the wide difference between the savage and the civilized adult is mainly the result of the training and instruction of the individual; that it has not been brought about by the destruction of those children whose congenital share in the results of the intellectual advancement of the race is most scanty. It may be urged that, since man has reached a point where progress is almost entirely intellectual, and depends upon his own efforts, he is free from the laws by which development up to that point was reached.

We are not concerned at present with the question how far progress might be accelerated by intelligent selection, and we may therefore conditionally accept the view that future progress, for some time to come at any rate, must depend almost entirely upon education; but, far from holding that this conclusion will allow us to ignore or obliterate the differences between the male and the female intellect, I believe that the full significance of these differences can be appreciated only in their relation to higher education. The scope of the present paper will only allow the space for an outline sketch of the reasons for this belief. As the field of human knowl-

edge widens in all directions, as society becomes more complex, and as the points of contact between man and his inorganic environment multiply, the amount of general education which each individual must receive before he is in a position to hold his own, and to guide himself rationally in all the emergencies of life, and to enjoy his share of the benefits which our intellectual advancement has placed within his reach, increases in a geometrical progression, and the amount of time demanded for general liberal education increases in the same ratio. Meanwhile the amount of special preliminary training which must be undergone in order to fit a person for new and original work in any department of knowledge or art increases at the same rate, and makes greater and greater inroads upon the time which is needed for general education. At present the most important, delicate, and complicated of educational problems, the problem which each individual must meet and decide upon, and the problem which engrosses most of the thought of educational bodies, is where to draw the line between general culture and practical or technical training.

Culture in its widest sense is, I take it, thorough acquaintance with all the old and new results of intellectual activity in all departments of knowledge, so far as they conduce to welfare, to correct living, and to rational conduct; that is, culture is to the intellectual man what heredity has been to the physical man. Culture is concerned only with results, not with demonstrations, and it does not look to new advances; while technical training is concerned with methods and proofs; and it values the results of the methods and investigations of the past only as they contribute to new advances. Technical training looks to progress in some one definite line, one radius of the growing circle of the domain of

human intelligence, and ignores the rest of the circumference. It is to the intellectual man what variation is to the physical man. By culture we hold our own, and by technical training we advance to higher levels. Both are equally important to human welfare, and the great problem of the future is how to secure each to the greatest degree without sacrificing the other. The analogy of the rest of the organic world would seem to indicate that this is to be accomplished by "division of labor." If the female mind has gained during its evolution an especial aptness for acquiring and applying the results of past progress, by an empirical method and without the necessity for studying proofs and reasons, it would seem especially fitted for culture, as distinct from training, while the male mind is best fitted for education by that process of inductive training by demonstration and experiment which leads to new advances. The methods employed in the general instruction of young men and young women should not therefore be identical. With the one the field may be very wide and the methods empirical, and with the other the range more narrow and the methods more strictly logical. In this way each type of mind will be developed in the manner for which it has an especial fitness; and we have the strongest grounds for the belief that this method would also gradually result in the extension of that congenital acquaintance with nature which is the common stock of the race, and would thus leave more time for the special training of those minds which are by nature best fitted to receive it. It is unavoidable that a bald outline of a view which has such wide implications should afford many openings for serious criticism; but the present article does not admit of the expansion of the idea, even if its detailed examination could be fairly included in the province of

biology. Having traced the origin and significance of sex from its lowest manifestations to a point where it becomes purely intellectual, the biologist may fairly leave the subject in the hands of the psychologist.

When this chapter was printed, several years ago, I was told by several teachers of great experience in the education of both boys and girls that their observations showed no constant difference in the intellectual powers of the two sexes. They therefore disputed the accuracy of my view.

Taking the chapter alone, this is, no doubt, a fair criticism; but I believe that any reader who will examine the subject in connection with the other chapters of this book, as a part of the whole, and not as an isolated essay, will perceive that we should not expect the intellectual differences between men and women to be so well marked and conspicuous during childhood as they become after maturity is reached.

The subject is such a fruitful source of controversy that I can hardly hope to escape adverse criticism, and I can only say that I have not approached it in a spirit of controversy, and shall gladly welcome any discussion which leads to the discovery of truth.

The acceptance of my view should put an end to all discussion as to the relative intellectual rank of men and women; for if the two sexes contribute in different ways to the welfare of the race, and fill equally important but dissimilar places, there can be no question as to relative superiority or inferiority.