

SCIENCE AND ETHICS

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CONWAY MEMORIAL LECTURE

SCIENCE AND ETHICS

DELIVERED AT ESSEX HALL, ESSEX STREET,
STRAND, W.C., ON APRIL 18, 1928

BY

J. B. S. HALDANE

F. J. Gould in the Chair

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CHAIRMAN'S INTRODUCTION

IT is a happy circumstance that we meet in the season of spring and growth. For humanity there is something heroic in the idea of growth. Life valiantly steps out afresh, undismayed by winter, by the memory of its own crimes, by the memory of its own fooleries, by noisy Bible broadcasting of the Day of Judgment, or by cool calculations of the world's end by astronomers.

Valiant growth has marked the story of the South Place Ethical Society. "We are Philadelphians," said our fathers in 1793; and these "loving brothers" cast out the belief in hell. They grew from the Three-Gods doctrine to the One-God doctrine. "I believe," cried William Johnson Fox, "in the duty of free inquiry." The life of Moncure Conway was growth from Methodism to Humanism. Many of us remember the serenity in his eyes, as if

they looked at a growing humanity, and rejoiced at its unfoldings, whether gradual or amazing. And when, before long, the doors of the new Conway Hall swing open, the music of evolution will salute yet another impulse of growth, and our comrades of the Morrow (I speak as from age to youth) will be invited to breathe new power into the old programme—"the cultivation of a rational religious sentiment, the study of ethical principles, and the promotion of human welfare, in harmony with advancing knowledge."

In the story of South Place rings a note that tunes with the enthusiasm, the mind, and the activity of our present lecturer. If you look into his books—*Animal Biology*,¹ and *Dædalus, or Science and the Future*, and the latest on *Possible Worlds*—you catch this eagerness for growth, liberty, spring, and even, at times, for the flying leap. Mr. Haldane rejects theology, but can still speak respectfully of it as, along with poetry and architecture, a historical expression of human

¹ Written in collaboration with Julian S. Huxley.

nature. He cultivates scientific research with ardour, but outruns technical science, and wants to link science and human welfare ; and, in the midst of a discussion on biology, you find him breaking into a curse on poverty, slums, monotonous work, unhealthy life, unhappy family circumstances. While strenuously exploring the secrets of nature, and forecasting extraordinary developments, he is still the Philadelphian ; and John the bio-chemist is all the time John the neighbour.

All scientists are not spontaneous and mobile. Mr. Haldane has the gift of spontaneity and mobility. Here is a golden sentence from one of his books : " So long as our education aims at inculcating dogmas, religious, political, ethical, or scientific, fresh relays of martyrs will be necessary for every step of human progress." That is a hint to stodgy ethicists and university professors as well as to priests. No wonder, then, that he has pleaded for beauty in life, as well as for "advancing knowledge" ; and he calls for homage to the poets—only the poets must join their dreams and melodies with an honest

study of the facts and laws of nature. Surely science loses nothing of its energy because poetry glows on its horizon ; and the glory of knowledge is not lessened by a sort of wistfulness in the quest after things felt rather than formulated. For myself, I will say that, if I could live millions of years, I trust the day would never come when all my questions about the universe had been answered. I am glad to recognize in Mr. Haldane's utterances this happy instinct for unfinish. With great originality he marks out his best plans of scientific research, and for applying the hard-won results, in the spirit of the religion of humanity, to the furtherance of human welfare, physical and educational and æsthetic. But he always maintains the springtide sense : the sense that reaches, bravely and untiringly, after things more splendid than any that have yet been seen or dreamed. Somewhere, when talking of the late William Bateson, the Mendelian researcher, Mr. Haldane says of him : " Bateson was greater than any of his ideas." That is a noble suggestion that a man may have a largeness of spirit, and dwell

in a circle of the soul, wider than his science and wider than his art. And when we walk in company with Mr. Haldane's thought we have a sense of intellectual achievement, of Philadelphian service, and also of a "farther yet." Listen to him and judge.

F. J. G.

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WE are met here to celebrate the memory of Moncure Daniel Conway. We are united by the fact that we do not adopt a merely negative attitude in the face of the collapse of Christianity. We have a task of salvage—a task in which Conway himself played an important part. But the main function of an Ethical Society should be constructive. If we Rationalists could conserve the Christian virtues while abandoning the equally Christian vices, we should have accomplished much. But we aspire to something more positive, a synthesis of a new ethic; tentative, of course, for we lay claim to guidance by no holy spirit save our own consciences, but yet taking cognizance of facts, both in human nature and in the external world, which Christianity has ignored. Conway's career as a prophet began with his realization of the evil of slavery, which St. Paul had condoned; and in later life he championed views on international and inter-racial relationships which earned him in his own

day the title of crank, and in ours that of the forerunner of many ideas which have obtained very wide adhesion, if not, as yet, universal application.

I cannot attribute the honour which this Society has done me to the possession of any such ethical genius, if I may use the expression, as distinguished Conway from his fellows. I take it that I am here because the Society realizes that ethics must take the fullest cognizance of the results of natural science, and that I am one of the relatively rare professional scientists who realize vividly, if inadequately, the importance for ethics of the work which we are doing. I do not suppose that I shall solve any ethical problems to-day. That is not my function. Yet I may be able in some degree to elucidate the nature of certain among them; to place them, as it were, against their proper background, and thus to assist those better qualified than myself in coming to conclusions of ethical value.

Science impinges upon ethics in at least five different ways. In the first place, by its application it creates new ethical situations. Two hundred years ago the news of a famine in China created no duty for Englishmen.

They could take no possible action against it. To-day the telegraph and the steam-engine have made such action possible, and it becomes an ethical problem what action, if any, is right. Two hundred years ago a workman generally owned his own tools. Now his tool may be a crane or steam-hammer, and we all have our own views as to whether these should belong to shareholders, the State, or guilds representing the workers.

Secondly, it may create new duties by pointing out previously unexpected consequences of our actions. We are all agreed that we should not run the risk of spreading typhoid by polluting the public water supply. We are probably divided as to the duty of vaccinating our children, and we may not all be of one mind as to whether a person likely to transmit club-foot or cataract to half his or her children should be compelled to abstain from parenthood.

Thirdly, science affects our whole ethical outlook by influencing our views as to the nature of the world—in fact, by supplanting mythology. One man may see men and animals as a great brotherhood of common ancestry, and thus feel an enlargement of his obligations. Another will regard even the

noblest aspects of human nature as products of a ruthless struggle for existence, and thus justify a refusal to assist the weak and suffering. A third, impressed with the vanity of human efforts amid the vast indifference of the universe, will take refuge in a modified epicureanism. In all these attitudes and in many others there is at least some element of rightness.

Fourthly, in so far as anthropology is becoming scientific, it is bound to have a profound effect on ethics by showing that any given ethical code is only one of a number practised with equal conviction and almost equal success ; in fact, by creating comparative ethics. But, of course, any serious study of the habits of foreigners, whether scientific or not, has this effect, as comes out plainly enough in the history of ancient Greek ethics. Hence science is not wholly responsible for the ethical results of anthropology.

Finally, ethics may be profoundly affected by an adoption of the scientific point of view ; that is to say, the attitude which men of science, in their professional capacity, adopt towards the world. This attitude includes a high (perhaps an unduly high) regard for truth, and a refusal to come to unjustifiable conclu-

sions which expresses itself on the plane of religion as agnosticism. And along with this is found a deliberate suppression of emotion until the last possible moment, on the ground that emotion is a stumbling-block on the road to truth. So a rose and a tape-worm must be studied by the same methods and viewed from the same angle, even if the work is ultimately to lead to the killing of the tape-worms and the propagation of roses. Again, the scientific point of view involves the cultivation of a scientific æsthetic which rejoices in the peculiar forms of beauty which characterize scientific theory. Those who find an intimate relation between the good and the beautiful will realize the importance of the fact that a group of men so influential as scientific workers are pursuing a particular kind of beauty. Finally, since the scientist, as such, is contributing to an intellectual structure that belongs to humanity as a whole, his influence will inevitably fall in favour of ethical principles and practices which transcend the limits of nation, colour, and class.

Personally, I believe that the second of these relationships between science and ethics is that in which science is most beneficial. By complicating life science creates new oppor-

tunities of wrong-doing ; by altering our world-view it may lead us into one form or another of ethical nihilism : it can never do us harm by pointing out to us the consequences of our actions. But the enemies of science will claim that, just because at present, insofar as it concerns itself with human beings, it deals with their bodies rather than their souls, it will lead us to neglect the higher forms of duty to our neighbour. On the whole, I accept this indictment, and glory in it ; although, since I do not believe in a detachable soul, I regard the good of the body as the good of the soul too, each being the whole man looked at from a particular point of view. But I welcome this apparent debasement of ethical aims for another reason.

As long as my services to my neighbour are confined to feeding him when hungry, or helping him to raise his wages, and tending him when sick or preventing future sickness, and so forth, I am probably following the Golden Rule, for I do not want to be hungry, poor, or sick, and few of my neighbours are good enough Christians to do so. But if I soar above the mere claims of the body I shall try to educate my neighbour against his will, convert him to my particular brand of religion

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or irreligion, or even to psycho-analyse him. As I do not personally want to admire Gertrude Stein, worship a biscuit, or remember the moral lapses of my infancy, these forms of charity are very liable to be breaches of the Golden Rule ; and if they are carried too far they may well develop into missions to the heathen or even crusades.

I confess that I am not appalled at the thought of an ethical system in which the only goods with which we attempted to provide our neighbours were of the most material character, and in which hygiene took the place of salvation. So much nonsense is put about in the name of hygiene that the idea is naturally repugnant to many people. For hygiene has furnished a new weapon to the numerous persons who desire either to interfere with the lives of their fellows or to exploit their fears. As religion declines, the man who would have sold relics in the past turns his attention to pills, and the belief in the danger of Sabbath-breaking is replaced by that in the danger of bad smells, although tanners and glue-boilers are healthier than the average of the population.

In view of such facts it requires considerable education to preserve one's health ; and since the education in question is biological, and I

am a biologist, it is natural that I should like to see it universally diffused. If the great aim of education is to know yourself, it is essential to begin at the beginning—namely, with anatomy and physiology. If an almost equally important aim is to promote human solidarity, it is in the realm of hygiene that this is most completely displayed. On the political and economic plane my neighbours' misfortune may be my advantage; in that of hygiene this is never so, as Carlyle pointed out long ago. As long as we maintain slums and dusty occupations we shall have foci from which the tubercle bacillus can attack the well-to-do. As long as we have families of six in a single room we shall be unable to prevent the spread of diphtheria or measles. This solidarity against pathogenic micro-organisms extends beyond the boundaries of nationality, race, or even species. Every Roumanian infected with infantile paralysis, every Indian with small-pox, every rat with plague, diminishes the probable length of my life. The pessimistic psychologists tell us that men can be combined in large numbers only by hate and fear. As long as a single infectious disease remains in existence there will be suitable objects of hatred and fear for humanity as a whole. I

am not a materialist, but I do not think that the influence of materialism on ethics is wholly bad. Not only does it banish many imaginary goods and evils, but it calls attention to a case where egoism and altruism are the same. And a materialistic criterion, such as health, has the immense advantage over a hedonistic one such as happiness that the health of two men can be compared, while their happiness cannot.

To my mind, the greatest danger to which our ethical system is exposed from science is not a debasement of values for such reasons as I have sketched, but the deliberate exploitation of scientific ideas in the interests of unscientific prejudice. I cannot choose a better example than the recent lecture on "Scientific Ethics," delivered by Dean Inge to the British Science Guild, a body which, I may remark, represents applied rather than pure science. I should be surprised if the Dean had devoted as much time to the study of science as I have to that of Christianity (for I attended two Christian schools), yet I fear that a lecture by myself on Christian Ethics would be regarded by the Dean as at best blacklegging, at worst blasphemy. For he has done me the honour to state that I am prejudiced concerning religion; though agnosticism, being a refusal

to make up one's mind at all, is surely the very opposite of prejudice, which is the making-up of one's mind before hearing the evidence.

A fair proportion of the Dean's discourse was devoted to diatribes against the Roman Catholic Church, which, it appears, is in several respects less scientific than the Protestant organizations. I confess that, as an impartial outsider, I hope that as long as there are an appreciable number of Protestants they will be balanced by some Catholics ; for, while both bodies have been about equally hostile to truth, the Catholics have on the whole been kinder to beauty. And as long as the Anglican Prayer-Book includes prayers for rain and for the satisfactory functioning of the organs of the royal family, for a Dean to animadvert upon Lourdes is simply a case of the pot calling the kettle black.

Insofar as the Dean exalts truth, attacks supernatural dualism, and realizes that evolution implies the rights of animals, I think that every one here will be in agreement with him. How little importance is attached to truth as such in our society appears very clearly in a recent judgment of Mr. Justice Humphreys in a case where a beauty specialist sued a rival for using a phrase which he had invented to

advertise his business. The Judge held that the phrase was arresting and original—for one thing, because it was obviously untrue—and that it came within the Copyright Act. I do not think that he would have adopted so complacent an attitude had the phrase been obscene or seditious, and I doubt if a State permeated by scientific ethic would allow its courts to be used to support private property in lies. But with regard to the more detailed applications of biology to ethics, and especially in regard to his views on eugenics, I am afraid that I am a better Christian than the Dean. Perhaps I may be excused for speaking at some length on this subject because I have a considerable first-hand knowledge of animal and plant breeding, and have to some small extent advanced knowledge concerning heredity.

Let us first turn to the facts which are known with certainty. We know the laws which govern the inheritance of a number of defects. Some of these, like colour-blindness, are trivial, provided locomotive drivers and navigators of ships can be so tested as to exclude colour-blind men from these occupations. Others, such as short fingers, are unsightly, and may be a serious handicap. A third class, such as hæmophilia (failure of the blood to coagulate)

and some types of deaf-mutism, are dangerous to life, or make a normal and useful life impossible. Now, these maladies are inherited in several different ways, and the type of inheritance determines the possibility or otherwise of eugenic action with regard to them. If all short-fingered persons were massacred to-morrow, this condition would be pretty completely abolished ; but if all the deaf-mutes were killed off, it would take hundreds of generations before the proportion of them in the general population was halved. Now, I think that bearers of the former kind of hereditary complaints should be warned as to the type of children that they are likely to beget, and given every possible opportunity to avoid doing so ; but I do not think that in the present state of public opinion any compulsion should be exerted on them. The time for that may come if attempts spread over several generations to persuade them to limit their families are a failure. But about the same time public opinion will perhaps be ripe for the discouragement, in the interests of hygiene, of deans and others who spread the view that any but a very small class of diseases can be cured by prayer.

The inheritance of other desirable and undesirable characters is far less clearly under-

stood. Feeble-mindedness is fairly strongly inherited, but unfortunately it is generally inherited in such a way that the segregation or massacre of the feeble-minded, even if continued for several generations, would not stamp it out. The feeble-minded, unless they mate with one another, do not necessarily produce feeble-minded children. If, therefore, the feeble-minded are to be segregated, it should be in their own interests, and because they are unfit to bring up a family, quite as much as on eugenical grounds.

But the most controversial and, to my mind, the least scientifically grounded of the proposals of the Dean and other eugenists who think like him relate not to a few small groups of the population, but to large numbers. In the first place, he congratulates the United States on stopping the flood of immigration from Southern and Eastern Europe. Now, politically this may be a wise measure. The countrymen of Lenin and Mussolini probably do not make such good Babbitts as the races of North-Western Europe. And, on the whole, they do not score as highly in so-called intelligence tests of the particular type current in the United States. Whether such a failure has any significance could probably be deter-

mined by the scientific methods which are being applied to such tests by Spearman and his pupils in England. But even if the average Italian is stupider than the average Swede, which may be the case, either or both of the following facts may still be true. Genius of certain types may be commoner among Italians than Swedes, and, as the result of crossing these two peoples, a type in many ways finer than either may be produced. This is certainly the general rule with animals and plants, and history suggests that it is true of men. Until these possibilities have been disproved, the exclusion of Southern Europeans from the United States cannot be justified on eugenic grounds. And if, as is very possible, they are better adapted than the inhabitants of Northern Europe for life in the Southern States, it may be an extremely short-sighted measure.

The same criticism applies to the question of the differential birth-rate in different social groups within the same state. It is true that in England the rich breed more slowly than the average and the skilled than the unskilled labourer, and that infantile and other mortality does not compensate for this difference. This phenomenon has gone on for only about two generations, and it is very probable that, with

further social progress, it will cease; for in Stockholm, where the poor do not live in slums and birth-control is pretty universally practised, the rich have rather more children than the poor. Although it is certainly not scientifically proven, it seems likely that there is a correlation between wealth and the hereditary factors determining intelligence, because the well-to-do include many families of the professional classes in whom intelligence is undoubtedly hereditary, and the unskilled labourers include the majority of the feeble-minded. We do not yet know enough about the inheritance of mental ability to be able to say that a few generations of selection against it would weed it out to an appreciable extent, though this may quite probably be the case. But if we grant the case of the extreme eugenicist, what is the remedy? The Dean would like to penalize the slum-dwellers who still produce large families, and other eugenicists (though few, if any, scientific students of heredity) have condemned the spending of public funds to ameliorate the lot of the poor on similar grounds. If such is really the teaching of biology, there is a serious conflict between science and the dictates of the conscience of most enlightened men and women.

And this alleged conflict is one ground for the distrust of science and its teachings, which is very widely felt.

In my own opinion, the dictates of biology are exactly opposite, and on the whole in line with those of humanitarian ethics. If a difference in effective fertility exists between the rich and the poor, it seems to me profoundly illogical to attempt to remedy it by making the rich richer and the poor poorer. It is true that such an attempt might succeed if the poor were made so poor as to bring their infantile mortality up to about fifty per cent. But that would lower their physique and also create foci of disease, which would attack the rich. It would be better to send armoured cars through the slums from time to time, with special instructions to fire upon women and children. The correct remedy for the differential birth-rate would seem to be such a raising of the economic standards of the poor as would give them the same economic incentives to family limitation as exist among the rich, and such an equalization of educational and other opportunities as would lessen these latter incentives. The example of Stockholm shows that the differential birth-rate need not exist in a highly-civilized community. I have stated

elsewhere my personal views on the economic and other measures which would serve to equalize the birth-rates in different classes. As they have perhaps a somewhat political flavour, I shall not repeat them here. Suffice it to say that they do not commend themselves to the Dean of St. Paul's.

Other self-styled eugenicists take a still more extreme view of innate human inequality. They suppose that moral qualities are inherited to much the same degree as physical and intellectual. It is true that brothers resemble one another in these respects about as much as in physical and intellectual qualities, but this is probably largely a matter of environment. It is, after all, a matter of common sense that it is easier to make a bad boy good than a stupid boy clever. Human experience has agreed to attach the social sanctions of praise and blame to qualities on which environment has a fairly large influence, and on the whole scientific observation goes to confirm common sense. There is probably such a thing as ineradicable moral imbecility, just as there is an acquired moral imbecility due to lethargic encephalitis ; but these would seem to be a good deal rarer than hereditary stupidity. Science does not, of course, support the doctrine of human per-

fectibility. But it does tend to uphold the view that this doctrine is much more nearly true in the sphere of ethics than in that of intellect—in other words, that mankind is more readily modified by moral than intellectual education. And of the principles of moral education we know very little. We know, indeed, that such an education based on religion is by no means an infallible guide to conduct, even in an age of faith. In an age of reason it often results in young people, who generally lose their faith at a critical period of their lives, supposing that there is no rational basis for right conduct. We know, both from individual cases elsewhere and from the great example of the third French Republic, that such an education can be successfully conducted on purely secular lines. But it should, I believe, be one of the principal functions of an Ethical Society to investigate the relative efficacy of different types of ethical propaganda. My own small experience suggests that there are great individual differences between different children in this respect: some, for example, being greatly moved by the stories of noble lives; others, who may yet readily absorb example or abstract precepts, being very little so.

But to return to eugenics: if a great deal which to my mind is both unscientific and immoral has been advocated in its name, I am certain that it has a very great future as an ethical principle. The more we learn as to what desirable qualities are inheritable, the more we should seek these qualities in our own spouses. Now, one does not fall in love as the result of a system of marking beauty, intelligence, virtue, and so on, each counting for so much. But one does so as the result of the weight which one has given in one's appreciation of the other sex to these various qualities. As a biological outlook becomes commoner this weight will tend to vary. Length of pedigree will seem less important than soundness, wealth than health, education than intelligence. But just because eugenics is an ethical principle, it should begin at home, like charity, and influence individual conduct before public policy.

Hygiene and eugenics are, in all probability, only the first of a series of new spheres of duty which biology is opening up. To take but one example: at the present moment our clear duty to animals is to spare them obvious physical suffering. As we learn about their psychology we shall know better. It is

quite possibly as cruel to keep a pet rat in a light and airy cage as to lock a dog in the cellar all day; and it is already the duty of every one who keeps animals to acquaint himself with the elementary principles governing nutrition.

Ever since the utilitarian movement ethics have become more and more a matter of the calculation of consequences. We may reject the criterion of the greatest happiness of the greatest number, either because it is incalculable, or because happiness does not appear a sufficiently noble goal; but we are all, or nearly all, agreed that actions must be judged by their probable consequences, and not by any code which does not envisage such consequences. We have not yet gone very far towards calculating these consequences scientifically. In the doubtful cases only scientific method will help us. The question, for example, whether I should subscribe £1 to the Cancer Hospital or the Cancer Research Campaign depends on the value which I attribute to research. As a careful study of the paths by which cancer cells migrate from the breast has been largely instrumental in reducing the mortality from breast cancer to about ten per cent. in the early operated cases,

I am personally in favour of research ; but I have not got the quantitative knowledge of how far a pound goes in research and treatment respectively which would enable me to form a definite judgment on the question. And in the present state of affairs any statistics available would be directed to proving a case rather than arriving at the truth.

If it is our duty to envisage, so far as possible, the consequences of our actions, it follows that we must deliberately attempt to suppress our emotions until this investigation is completed. Bentham attempted to do so, but with the passing of utilitarianism and the growing realization of the importance of the emotional side of the human mind few have attempted to follow his example. Yet only on such lines can scientific method be applied directly to ethical problems. Such an application can hardly be said as yet to exist. We do not realize how largely a scientifically based code of ethics would depend on statistical data. The moment we begin to study statistics new duties appear. Let us take an apparently trivial choice—shall I buy a glass or pottery bowl for my flowers? I turn to the occupational mortality statistics, and find that, though the mortality of glass workers is above the

average, that of potters is still higher. Other things being equal, I ought to buy glass. If we knew enough no choice would be trivial, and it is our duty to acquire the knowledge which will enable us to moralize our everyday actions, both by the study of available statistics and by encouraging statistical inquiry elsewhere.

But does science reduce ethics to mere calculation? It is true that science from its nature can only say what is, was, or will be, and not what ought to be. It cannot, of course, give an answer to the question, "Why should I be good?" There is, in the long run, no answer to that question, for a previously good action ceases to be good insofar as it is directed to any non-ethical end. But our views as to the status of good action are profoundly affected by our views of the universe. If good corresponds to nothing more objective than our individual preferences, the good life appears to us more heroic perhaps, but also rather futile. Now, the tendency of science in its early stages, as it cleared away the jungle of mythology, was to leave the human individual apparently isolated. Eighteenth-century Rationalism, which did not succeed in replacing Christianity, though it affected human

thought profoundly, was such a philosophy of isolated individuals.

It seems to me that modern science makes this isolation far less plausible than it seemed two hundred, or even fifty, years ago. The older science either supposed that the universe and the human body were mere machines, or that they were machines to some extent guided by God and the soul respectively. No facts are known to science which give any serious support to the latter view. But it does not follow that the former is correct. The human body is composed of cells, and the cells of atoms. Many of the cells can be cultivated outside the body. They have a life of their own, and can live a Robinson Crusoe kind of existence in suitable surroundings. Hence they do not derive their life from the soul or anything outside themselves. But their co-operation manifests itself in the life of the whole man, and more particularly in his consciousness. A study of the effects on the mind of brain injuries makes it fairly certain that consciousness depends not on any one cell, which might be the seat of the soul, but on a very large number. Yet every attempt to find forces other than those of ordinary physics operating within the organism has

been a complete failure, and the success of modern medicine, and animal and plant breeding, are at least pragmatic justifications of that point of view. The mutual relations of the atoms constituting the cell seem also to be describable in terms of physics and chemistry. Nevertheless, life, organic unity, and consciousness are facts a good deal more certain than the existence of cells and atoms. It is clear that aggregates of a certain kind do manifest qualities which we cannot observe in their components.

The doctrine of emergence, which is widely held to-day, is that aggregates may have qualities, such as life or consciousness, which are quite foreign to their parts. This doctrine may conceivably be true, but it is radically opposed to the spirit of science, which has always attempted to explain the complex in terms of the simple, and has on the whole succeeded. We do not find obvious evidence of life or mind in so-called inert matter, and we naturally study them most easily where they are most completely manifested; but if the scientific point of view is correct, we shall ultimately find them, at least in rudimentary forms, all through the universe.

Now, if the co-operation of some thousands

of millions of cells in our brain can produce our consciousness, the idea becomes vastly more plausible that the co-operation of humanity, or some sections of it, may determine what Comte called a Great Being. Just as, according to the teachings of physiology, the unity of the body is not due to a soul superadded to the life of the cells, so the superhuman, if it existed, would be nothing external to man, or even existing apart from human co-operation. But to my mind the teaching of science is very emphatic that such a Great Being may be a fact as real as the individual human consciousness, although, of course, there is no positive scientific evidence for the existence of such a being. And it seems to me that everywhere ethical experience testifies to a super-individual reality of some kind. The good life, if not necessarily self-denial, is always self-transcendence. This idea is, of course, immanent in the higher religions, but the objects of religious worship retain the characteristics of nature-gods or deified human individuals. It was more satisfactorily expressed by Comte; but there is much in Positivism as originally conceived by him which seems unnecessarily arbitrary.

Just because any formulation of the nature

of such a being has ultimately fallen below the best in our own moral consciousness, religions, though at first a help, later become a hindrance to ethical progress, and we too shall do no good by premature theorizing. But just as, starting from the basis of chemistry, biochemists are gradually explaining the phenomena of life, so from a basis of psychology our descendants may build up a scientific ethics which may perhaps be at the same time a scientific theology. Much of modern psychology is, I suspect, mere cerebral physiology. I do not see, for example, why we need postulate any "Unconscious" other than certain parts of our own brains. It may well be that the main psychology of the future will be social psychology, just as I believe that in fifty years the most important branch of chemistry will be biochemistry. In this way we may hope that ethics will ultimately be brought within the sphere of science.

At present the only branch of science which is concerned with moral conduct as such is anthropology. One branch of that science is concerned with human societies, and analyses the various factors influencing conduct in them. Most of these analyses, of course, bear on the simple institutions of primitive

peoples. The anthropologist can observe them from outside, and need not take sides in a dispute, say, between a witch-doctor and a witch. Anthropologists are generally agreed that the magic and religion of primitive peoples are essential parts of their social system, and hold that missionaries destroy the very foundations of society when they introduce Christianity or Islam. Now, the same argument is applied by certain anthropologically-minded persons to our own society. They hold that, although most of Christian dogma is untrue, the Church is as essential to the stability of European society as the fetish-house to that of West African. We cannot dismiss this point of view because it is somewhat derogatory to human nature. If science does not endorse the prophet's view that "The heart is deceitful above all things and desperately wicked," it is equally far from regarding it as entirely perfectible by a change of environment.

The first obvious point that arises is that, while the anthropologist might regard the Church as essential for the stability of society, he would certainly not regard its moral code as correct. For the behaviour of Christians, like that of other men, has always been a

compromise between that dictated by their moral code and their private inclinations. But that moral code has never—at least, among those Christian peoples who have advanced civilization—been purely Christian. The governing classes in Europe have generally kept before them the ideal of honour in one of its many forms. This is an ideal based on pride rather than humility, or self-realization rather than self-denial. It has generally been linked with some form of family pride or patriotism. It has, of course, had its aberrations, but they have been a natural reaction against the abjection into which the Church has attempted to force the spirit of man. In the somewhat modified form of sportsmanship this code is current among all classes in England to-day. I am not a sportsman myself on weekdays ; but, as I do not call myself a miserable sinner on Sundays, I can, at least, attempt to practise a more rational morality during seven days a week.

Our anthropologist, then, would have to demand the existence of a non-Christian moral ideal beside that of Christianity, trusting to human weakness to see that neither was too strictly enforced. Now, the present moral crisis is due, among other things, to the

demand for a moral code which shall be intellectually respectable. The existence of that demand, encouraged as it is by the success of rationalism in the sphere of science, is no doubt a serious matter, but the demand is growing daily. And it comes at a time when applied science has created so many new moral problems that the morality of our ancestors must in any case be drastically revised. Until now poverty and disease have been inevitable evils to be palliated by the exercise of the virtue of charity. With the means at our disposal to-day we could abolish all poverty and most disease. But the moral energy required for these purposes is still directed into less efficient channels. In the same way our sexual morality has been adjusted to produce the high birth-rate demanded by a high death-rate. It is now being rather painfully altered to meet the new social demands upon it.

If, then, our moral code must, in any case, be recast, we are justified in demanding that it be recast on a rational basis. The impossible demands attributed to the Christian God made it necessary to create the Devil to counter-balance him. A morality based on science would be quantitative, as was Greek morality. The ideal of the Greeks was τὸ μέτριον, a word

often translated as the mean, but, perhaps, more accurately as the measured. This ideal, however, only applied to social conduct—for example, to spending one's income on the pursuit of pleasure. In this sphere it is quite clear that science will be able to help us. Economics and hygiene are already beginning to do so. But even Greek morality—as we find it codified, for example, in Aristotle's ethics—was not merely quantitative. A man might eat too much, or expose himself to too much danger, and so on, but he could not have too much knowledge or too much moral intuition. And Christian ethics replaced those of the ancients largely because they made unlimited demands on the human spirit, and it does somehow respond to such demands. I doubt if any morality which does not do so will get the maximum response from man.

A scientific morality which proclaimed that man existed as part of a greater aggregate could yet admit that he had claims as an individual. The cells in our own body co-operate in its life, but yet live, so to speak, very comfortably as compared with individualistic protozoa. And as long as I act, in general, as a member of society, I believe that I shall do so the better, and not the worse, for having

a good dinner and taking holidays. If the Great Being is wholly independent of individual men, their well-being must be disregarded in its service. If it exists through them, and only through them, their rights are its rights. The morality of the future will, I believe, contain elements of both Greek and Christian moralities. The vague conception of the mean will be rendered exact by quantitative science, and the ideal of self-sacrifice will be rationalized as co-operation in a real and intelligible super-individual reality.

To-day we are very far from any such blessed condition. Yet we can begin, as I have shown, to apply scientific method both to individual moral problems and to the problem of morality itself. The time required for so great a task must be measured on a historical, perhaps even on a geological, time-scale. But it represents the unification of human effort, the marriage of the mind and the heart, the moralization of science, and the rationalization of ethics. Let us be thankful if we can play any part, however small, in so great an enterprise.

APPENDIX A

BIOGRAPHICAL AND BIBLIOGRAPHICAL NOTES CONCERNING MONCURE DANIEL CONWAY

- 1832. Born in Virginia.
- 1850. *Free Schools in Virginia.*
- 1851. Enters Methodist Ministry.
- 1854. Enters Unitarian Ministry.
- 1858. Marries.
- 1863. Comes to England ; Preaches at South Place Chapel. -
- 1864. Appointed permanent Minister.
- 1869. Abandonment of prayer, followed by gradual abandonment of Theism.
- 1870. *The Earthward Pilgrimage.*
- 1874. *The Sacred Anthology.*
- 1877. *Idols and Ideals.*
- 1883. *Lessons for the Day* (2 vols.). (Revised edition, 1907.)
- 1884. Temporarily retires from South Place.
- 1892. Returns to South Place.
Life of Thomas Paine.

1897. Death of Mrs. Conway.
Final retirement from South Place.
1904. *Autobiography* (2 vols.).
1906. *My Pilgrimage to the Wise Men of the East*.
1907. Dies in Paris.
1909. *Moncure D. Conway: Addresses and Reprints*. (A Memorial volume containing a complete Bibliography.)
- 1910-1928. Memorial Lecture annually (see list opposite title-page).

APPENDIX B

THE CONWAY MEMORIAL LECTURESHIP

At a general meeting of the South Place Ethical Society, held on October 22, 1908, it was resolved, after full discussion, that an effort should be made to establish a series of lectures, to be printed and widely circulated, as a permanent Memorial to Dr. Conway.

Moncure Conway's untiring zeal for the emancipation of the human mind from the thralldom of obsolete or waning beliefs, his pleadings for sympathy with the oppressed and for a wider and profounder conception of human fraternity than the world has yet reached, claim, it is urged, an offering of gratitude more permanent than the eloquent obituary or reverential service of mourning.

The range of the lectures (of which the nineteenth is published herewith) must be regulated by the financial support accorded to the scheme ; but it is hoped that sufficient funds will eventually be forthcoming for the endowment of periodical

lectures by distinguished public men, to further the cause of social, political, and religious freedom, with which Dr. Conway's name must ever be associated.

The Conway Memorial Lecture Committee, although not yet in possession of the necessary capital for the permanent endowment of the Lectureship, have inaugurated and maintained the work while inviting further contributions. The funds in hand, together with those which may reasonably be expected from supporters of the Movement, will ensure the delivery of an annual lecture for some years at least.

The Committee earnestly appeal for either donations or subscriptions from year to year until the Memorial is permanently established. Contributions may be forwarded to the Hon. Treasurer.

On behalf of the Executive Committee :—

(Mrs.) C. FLETCHER SMITH and ERNEST CARR,
Hon. Secretaries.

(Mrs.) F. M. COCKBURN, *Hon. Treasurer*, "Pera-
deniya," Northampton Road, Croydon.

