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**An Ethical Problem Or, Sidelights
upon Scientific Experimentation
on Man and Animals**

Albert Leffingwell

Imprint

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PREFACE

The position taken by the writer of this volume should be clearly understood. It is not the view known as antivivisection, so far as this means the condemnation without exception of all phases of biological investigation. There are methods of research which involve no animal suffering, and which are of scientific utility. Within certain careful limitations, these would seem justifiable. For nearly forty years, the writer has occupied the position which half a century ago was generally held by a majority of the medical profession in England, and possibly in America, a position maintained in recent years by such men as Sir Benjamin Ward Richardson of England, by Professor William James and Dr. Henry J. Bigelow of Harvard University. With the present ideals of the modern physiological laboratory, so far as they favour the practice of vivisection in secrecy and without legal regulation, the writer has no sympathy whatsoever.

An ethical problem exists. It concerns not the prevention of all experimentation upon animals, but rather the abolition of its cruelty, its secrecy, its abuse.

Written at various times during a period extending over several years, a critic will undoubtedly discover instances of repetition and re-statement. Now and then, it has seemed advisable to include matter from earlier writings, long out of print; and new light has been thrown upon some phases of a perplexing problem. Will it tend to induce conviction of the need for reform? Assuredly, this is not to be expected where there is disagreement regarding certain basic principles. First of all, there must be some common ground. No agreement regarding vivisection can be anticipated or desired with any man who holds that some vague and uncertain addition to the sum total of knowledge would justify experiments made upon dying children in a hospital, without regard to their personal benefit, or sanction the infliction of any degree of agony upon animals in a laboratory.

A liking for the use of italics as a means of directing attention to certain statements is confessed. But wherever such italicized

phrases appear in quotations, the reader should ascribe the emphasis to the writer, and not to the original authority.

The inculcation of scepticism regarding much that is put forth in justification of unlimited research is admitted. It seems to the writer that anyone who has become interested in the question would more wisely approach it with a tendency toward doubt than toward implicit belief; to doubt, however, that leads one directly to investigation. We need to remember, however, that inaccuracy by no means connotes inveracity. There is here no imputation against the honesty of any writer, even when carelessness, exaggeration and inaccuracy are not only alleged, but demonstrated to exist. A. L. Aurora, N.Y., 1914

PREFACE TO THE SECOND EDITION

Another edition of this work being called for, the opportunity for one or two emendations is afforded.

In the first chapter of the present work, reference is made to the antivivisection societies of England, and, relying upon evidence given before the Royal Commission in 1906, one of them is mentioned as the "principal organization." The relative standing or strength of the different societies at the present time would appear not to be determined or easily determinable, and, of course, what was fact in 1906 may not be at all true ten years later. The matter would seem to be of little importance as compared with the greater questions pertaining to reform; but in the interest of accuracy the author would now prefer to make no pronouncement concerning the relative rank of the English societies, leaving decision as to precedence to those who give them financial support.

Though the first edition of the present work was quite large, yet no challenge of the accuracy of any of its statements concerning experimentation upon human beings or animals has yet appeared. To hope for absolute accuracy in a work of this character may be impossible; yet that ideal has been constantly before the writer. Should any errors of the kind be discovered to exist in the present edition, their indication is sincerely desired.

In the chapter "Unfair Methods of Controversy" some illustrative cases were given without mention, now and then, of the persons criticized. It seemed to the writer that in certain instances it should be quite sufficient to point out and to condemn inaccuracies and errors without bringing upon the record every individual name. No misunderstanding could possibly exist, since the references were ample in every case. But since this reticence, in at least one instance, has been criticized by an unfriendly reviewer, it is perhaps better to state that the repeated allusions to Lord Lister's journeyings to France, and the article in Harper's Monthly for April, 1909, were from the pen of the author of Animal Experimentation—a work which is reviewed in the Appendix to the present edition. To his advanced age—now far beyond the allotted span—we may ascribe the inaccuracies which, at an earlier period of his career, would doubtless have been recognized.

A. L.

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INTRODUCTION

It is now somewhat over a third of a century since my attention was specially directed to the abuses of animal experimentation. In January, 1880, a paragraph appeared in a morning paper of New York referring to the late Henry Bergh. With his approval a Bill had come before the legislature of the State of New York providing for the abolition of all experiments upon living animals—whether in medical colleges or elsewhere—on the ground that they were without benefit to anybody, and demoralizing alike to the teacher and student. As I dropped the paper, it occurred to me that the chances of success would have been far greater if less had been asked. That certain vivisections were atrocious was undoubtedly true; but, on the other hand, there were some experiments that were absolutely painless. Would it not be wiser to make some distinctions?

The attempt was made. An article on the subject was at once begun, and in July of the same year it was published in Scribner's Magazine, the predecessor of the Century. So far as known, it was the first argument that ever found expression in the pages of any American periodical favouring not the entire abolition of vivisection, but the reform of its abuse.

My knowledge of vivisection had its beginning in personal experience. Nearly forty years ago, while teaching the elements of physiology at the Polytechnic Institute of Brooklyn, it occurred to me to illustrate the statements of textbooks by a repetition of such simple experiments as had come before my own eyes. Most of my demonstrations were illustrative of commonplace physiological phenomena: chloroform was freely used to secure unconsciousness of the animal, and with the exception of one or two demonstrations, the avoidance of pain or distress was almost certainly accomplished.

But what especially impressed me at the time was the extraordinary interest which these experiments seemed to excite. Students from advanced classes in the institute were often spectators and voluntary assistants. Of the utility of such demonstrations as a means of fixing facts in memory, I could not have the slightest doubt. Nor as regards the rightfulness of vivisection as a method

either of study or demonstration, was there at that period any question in my mind. Whatever Science desired, it seemed to me only proper that Science should have. The fact that certain demonstrations or experiments upon living animals had already been condemned as unjustifiable cruelty by the leading men in the medical profession, and by some of the principal medical journals of England, was then as utterly unknown to me as the same facts are to-day unknown to the average graduate of every medical school in the United States. It was not long until after this early experience, and following acquaintance with the practice in Europe as well as at home, that doubts arose regarding the justice of CAUSING PAIN TO ILLUSTRATE FACTS ALREADY KNOWN. These doubts became convictions, and were stated in my first contribution to the literature of the subject, the paper in Scribner's. It is not the position of what is called "antivivisection," for that implies condemnation of every phase of animal experimentation. In the third of a century that has elapsed since this protest was made, the practice of vivisection has taken vast strides: it appears in new shapes and unanticipated environment. But the old abuses have not disappeared, and some of them, more urgently than ever before, demand the attention of thinking men and women.

Of personal contributions to the literature of the subject, during the past third of a century, nearly everything has been more or less polemical, called forth by either exaggeration of utility, inaccuracy of assertion, or misstatement of fact. Now it has been protest against the brilliant correspondent of a New York newspaper, who telegraphed from London an account of a visit to a well-known physiological laboratory, where he found animals all "fat, cheerful, and jolly," yet "quite unaffected by the removal of a spinal cord"—as sensible a statement as if he had referred to their jolly condition "after removal of their heads." Now it has been the manifesto of professors in a medical school declaring that in the institution to which they belonged no painful experiments had been performed—an assertion abundantly contradicted by their own publications. Now it is a Surgeon-General of the Army, defending one of the most cruel of vivisections in which he was not in any way concerned, by an exposition of ignorance regarding the elements of physiology; and, again, it has been a President of a medical associa-

tion, making a speech, wherein hardly a sentence was not stamped with inaccuracy and ignorance. To some natures controversy is exhilarating; to myself it is beyond expression distasteful. Yet, when confronted by false affirmations, what is one's duty? To say nothing? To permit the untruth to march triumphantly on its way? Or, in the interest of Science herself, should not one attempt the exposure of inaccuracy, and the demonstration of the truth?

Approaching the end of a long pilgrimage, it has seemed to me worth while to make a final survey of the great question of our time. How was the cruelty of vivisection once regarded by the leading members of the medical profession? Shall we say to-day that the utility of torment, in the vivisection of animals, constitutes perfect justification and defence? How far did Civilization once go in the approval of torture because of its imagined deterrent effects?

What has been accomplished by the agitation concerning vivisection which has persisted for the last forty years? Has the battlefield been well selected? Have demands of reformers been wisely formulated? Is public opinion to-day inclined to be any more favourable to the legal abolition of all scientific experimentation upon animals than it was a third of a century ago?

What has been the result of vivisection in America, unrestricted and unrestrained? Has it accomplished anything for the human race that might not have been accomplished under conditions whereby cruelty should be impossible except as a crime? Has the death-rate been reduced by new discoveries made in American laboratories? Is it possible that utility is persistently exaggerated by those who are not unwilling to use exaggeration as a means of defence? And of the Future, what are the probabilities for which we may hope? What is being done in our century in the way of submitting animals to unlimited torture?

To throw somewhat of light on these questions is the object of this volume. I wish it had been in my power to write a more extended and complete exposition of the problem, but limitations of strength, due to advancing age, have made that hope impracticable. But as one man drops the torch, another hand will grasp it; and where now is darkness and secrecy, there will one day be knowledge and light.

AN ETHICAL PROBLEM

CHAPTER I

WHAT IS VIVISECTION?

Upon no ethical problem of our generation is the public sentiment of to-day more uncertain and confused than in its attitude toward vivisection. Why this uncertainty exists it is not very difficult to discern. In the first place, no definition of the word itself has been suggested and adopted sufficiently concise and yet so comprehensive as to include every phase of animal experimentation. It is a secret practice. Formerly more or less public, it is now carried on in closed laboratories, with every possible precaution against the disclosure of anything liable to criticism. Quite apart from any questions of usefulness, it is a pursuit involving problems of the utmost fascination for the investigating mind—questions pertaining to Life and Death—the deepest mysteries which can engage the intellect of mankind. We find it made especially attractive to young men at that period of life when their encouraged and cultivated enthusiasm for experimentation is not liable to be adequately controlled by any deep consideration for the "material" upon which they work. Sometimes animal experimentation is painless, and sometimes it involves suffering which may vary in degree from distress which is slight to torments which a great surgeon has compared to burning alive, "the utmost degree of prolonged and excruciating agony." By some, its utility to humanity is constantly asserted, and by others as earnestly and emphatically and categorically denied. Confronted by contradictory assertions of antagonists and defenders, how is the average man to make up his mind? Both opinions, he reasons, cannot possibly be true, and he generally ranges himself under the banner of the Laboratory or of its enemies, according to his degree of confidence in their assertions, or his preference for the ideals which they represent.

Now, the object of all controversy should be to enable us to see facts as they are—to get at the truth. That difference of opinion will exist may be inevitable; for opinions largely depend upon our ide-

als, and these of no two individuals are precisely the same. But so far as facts are concerned, we should be able to make some approach to agreement, and especially as regards the ethical supremacy of certain ideals.

But first of all we need to define Vivisection. What is it?

Originally implying merely the cutting of a living animal in way of experiment, it has come by general consent to include all scientific investigations upon animals whatsoever, even when such researches or demonstrations involve no cutting operation of any kind. It has been authoritatively defined as "experiments upon animals calculated to cause pain." But this would seem to exclude all experimentation of a kind which is not calculated to cause pain; experiments regarding which all the "calculation" is to avoid pain; as, for example, an experiment made to determine the exact quantity of chloroform necessary to produce death without return of consciousness. The British Royal Commission of 1875 defined it as "the practice of subjecting live animals to experiments for scientific purposes," avoiding any reference to the infliction of pain; yet, so far as pertains to the justification of vivisection, the whole controversy may turn on that. Any complete definition should at least contain reference to those investigations to which little or no objection would be raised, were they not part of the "system." It should not omit reference, also, to those refinements of pain-infliction for inadequate purposes—also a part of a "system," and which, to very distinguished leaders in the medical profession, have seemed to be inexcusable and wrong.

Suppose, then, we attempt a definition that shall be inclusive of all phases of the practice.

"Vivisection is the exploitation of living animals for experiments concerning the phenomena of life. Such experiments are made, FIRST, for the demonstration, before students, of facts already known and established; or, SECOND, as a method of investigation of some theory or problem, which may be with or without relation to the treatment of human ailments. Such experiments may range from procedures which are practically painless, to those involving distress, exhaustion, starvation, baking, burning, suffocation, poi-

soning, inoculation with disease, every kind of mutilation, and long-protracted agony and death."

A definition of this kind will cover 99 per cent. of all experiments. The extreme pro-vivisectionist may protest that the definition brings into prominence the more painful operations; yet for the majority of us the only ground for challenging the practice at all is the pain, amounting to torment in some cases, which vivisection may involve. They are rare, some one says. But how do we know? The doors of the laboratory are closed. Of practices secretly carried on, what can we know? That every form of imaginable torment has at some time been practised in the name of Science, we may learn from the reports of experimenters themselves, and from the writings of men who have denounced them. It was Dr. Henry J. Bigelow, of Harvard University, the most eminent surgeon of his day, who declared that vivisection sometimes meant the infliction of "the severest conceivable pain, of indefinite duration," and that it was "a torture of helpless animals, more terrible, by reason of its refinement, than burning at the stake." Is the above definition of vivisection stronger than is implied by this assertion of Dr. Bigelow?

We need constantly to remember that vivisection is by no means a simple act. It may indicate investigations that require no cutting operation of any kind, and the infliction of no pain; or, on the other hand, it may denote operations that involve complicated and severe mutilations, and torments as prolonged and exquisite as human imagination can conceive. Experiments may be made, in course of researches, of very great interest and importance to medical science; and, on the contrary, they may be performed merely to demonstrate phenomena about which there is no doubt, or to impress on the memory of a student some well-known fact. They may be performed by men like Sir Charles Bell, who hesitated to confirm one of the greatest physiological discoveries of the last century, merely because it would imply a repetition of painful experiments; and they may be done by men like Magendie, who declared of his mutilated and tormented victims, that it was "DROLL to see them skip and jump about." It is because of all these differences that the majority of men have an indefinite conception of what they approve or condemn. The advocate of unrestricted vivisection sometimes tells us that experimentation implies no more pain than the prick of a

pin, and that its results are of great utility to the human race; the antivivisectionist, on the other hand, may insist that such experimentation means inconceivable torment without the slightest conceivable benefit to mankind. Both are right in the occasional significance of the word. Both are wrong if one meaning is to answer for all varieties of experimentation upon living things.

Some years ago the attempt was made to obtain the view of animal experimentation held by certain classes of intelligent men and women. One view of the practice is that which regards it merely as a method of scientific research, with which morality has no more to do than it would have in determining in what direction a telescope should be pointed by an astronomer, or what rocks a geologist should not venture to touch. A statement embodying the views of those who favour unrestricted vivisection included affirmations like these:

"Vivisection, or experimentation upon living creatures, must be looked at simply as a method of studying the phenomena of life. With it, morality has nothing to do. It should be subject neither to criticism, supervision, nor restrictions of any kind. It may be used to any extent desired by any experimenter—no matter what degree of extreme or prolonged pain it may involve—for demonstration before students of the statements contained in their textbooks, as an aid to memory,...or for any conceivable purpose of investigation into vital phenomena.... While we claim many discoveries of value,...yet even these we regard as of secondary importance to the freedom of unlimited research."

This is the meaning of free and unrestricted vivisection. Its plainness of speech did not deter very distinguished physiologists and others from signing it as the expression of their views. One can hardly doubt that it represents the view of the physiological laboratory at the present day. Sixty years ago this view of vivisection would have found but few adherents in England or America; to-day it is probably the tacit opinion of a majority of the medical profession in either land. One may question whether any similar change of sentiment in a direction contrary to reform has ever appeared since Civilization began. We shall endeavor to show, hereafter, to what that change is due.

Absolutely opposed to this sentiment are the principles of what is known as "antivivisection." According to this view, all vivisection is an immoral infringement upon the rights of animals. The cruelties that accompany research will always accompany it, until all scientific experimentation upon animals is made a criminal offence. From a statement of opinion giving expression to this view, the following sentences are taken:

"All experimentation upon living animals we consider unnecessary, unjustifiable, and morally wrong.... Even if utility could be proved, man has no right to attempt to benefit himself at the cost of injury, pain, or disease to the lower animals. The injury which the practice of vivisection causes to the moral sense of the individual and to humanity far outweighs any possible benefit that could be derived from it. Dr. Henry J. Bigelow, Professor in the Medical School of Harvard University, declared that 'vivisection deadens the humanity of the students.' Nothing which thus lowers morality can be a necessity to progress.... Painless or painful, useless or useful, however severe or however slight, vivisection is a practice so linked with cruelty and so pernicious in tendency, THAT ANY REFORM IS IMPOSSIBLE, and it should be absolutely prohibited by law for any purpose."

This is antivivisection. It is a view of the practice which has seemed reasonable to large numbers of earnest men and women whose lives in various directions have been devoted to the prevention of all kinds of cruelty, and to the promotion of the best interests of the race. When this view is maintained by men and women who oppose the killing of animals for purposes of food or raiment or adornment, or their exploitation in any way which demands extinction of life, it is entirely consistent with high ideals. It is against this view that the arguments of those who contend for vivisection, without restriction or restraint, are always directed.

But even among antivivisectionists there are, naturally, differences of opinion. For instance, the National Antivivisection Society, the principal organization of England, desires to see vivisection totally abolished by law; but, meanwhile, it will strive for and accept any measures that have for their object the amelioration of the condition of vivisected animals. On the other hand, the British Un-

ion for the Total Abolition of Vivisection will accept nothing less than the legal condemnation of every phase of such experiments. "Vivisection," the secretary of this society writes, "is a system, and not a number of isolated acts to be considered separately. Owing to its intricate and interdependent character and the international competition involved, USE CANNOT BE SEPARATED FROM ABUSE." In other words, every conceivable phase of scientific experimentation upon living creatures, even if absolutely painless, should be made a legal offence.

But we are not driven to accept one or the other of these definitions of animal experimentation. A third view of vivisection exists, which differs widely from either of these opposing ideals. Instead of taking the position of the antivivisectionist that ALL scientific investigations involving the use of animals, should be legally prohibited, it maintains that distinctions may, and should, be drawn, and that only the abuses of vivisection should be condemned by law. It asks society neither to approve of everything, nor to condemn everything, but to draw a line between experiments that, by reason of utility and painlessness, are entirely permissible, and others which ought assuredly to be condemned. It makes no protest against experimentation involving the death of an animal where it is certain that consciousness of pain has been abolished by anaesthetics; but it condemns absolutely the exhibition of agony as an easy method of teaching well-known facts. The utility of certain experiments it does not question; but even increase of knowledge may sometimes be purchased at too high a price. From a statement of this position regarding vivisection, drawn some years since, the following sentences may be of interest:

"Vivisection is a practice of such variety and complexity, that, like warfare between nations, one can neither condemn it nor approve it, unless some careful distinctions be first laid down.... Within certain limitations, we regard vivisection to be so justified by utility as to be legitimate, expedient, and right. Beyond these boundaries, it is cruel, monstrous, and wrong.... We believe, therefore, that the common interests of humanity and science demand that vivisection, like the study of human anatomy in the dissecting-room, should be brought under the direct supervision and control of the State. The practice, whether in public or in private, should be restricted by law