## THE TWO KINDS OF VIVISECTION—SENTISECTION AND CALLISECTION.

Professor BURT G. WILDER, M. D., of Cornell University, writing to the *Medical Record*, says: Is it not time for the distinct verbal recognition of the difference between painful and painless experimentation upon animals?

All well-informed persons are aware that the vast majority of vivisections, in this country at least, are performed under the influence of anæsthetics; but the enthusiastic zoölaters, who desire to abolish the objective method of teaching physiology, practically ignore this fact, and dwell chiefly upon the comparatively infrequent operations which are attended with pain.

Having read the arguments upon both sides, and had some correspondence with leaders of the anti-vivisection movement, I have been led to think that the discussion may be simplified, and a right conclusion sooner reached, if we adopt new terms corresponding to the two kinds of experimentation.

To use words with no warrant of ideas may be foolish, but it is not necessarily a mark of wisdom to refrain from the employment of terms which have a real significance.

Let us consider an analogous case. Aside from color and size, the *cat* and the *leopard* are almost identical, and are commonly regarded as two species of one genus. Suppose a community to be unacquainted with the cat, but to have suffered from the depredations of the leopard, which they call *felis*. Now, suppose some domestic cats to be introduced and to multiply, as is their wont. In the first place, for a time at least, it is probable that the same name, *felis*, would be applied to the smaller animal, with perhaps a qualifying word. In the second place, should there be certain persons, both devoid of interest in the cats and filled with pity for the mice devoured by them, is it not likely that they would endeavor to include the cats under any ban which might be pronounced against the leopards? Would they not be apt to succeed, especially with the more ignorant and impressionable members of the community, so long as they could assert without contradiction that the "mouse-eater it was only a *felis* upon a smaller scale? Would not even the reputation of the leopards suffer by reason of the multitude of the cats thus associated with them? In short, would full justice be done to either animal until their differences of disposition should be admitted to outweigh their likeness of form and structure, and be recognized by the use of distinctive names?

In like manner there are those who ignorantly or wilfully persuade themselves and others that all experiments upon animals are painful because some of them are now, and most of them were in former times; also, that painful experiments are common because vivisection in some form is generally practiced. It is all *vivisection*, and as such it is "cruel, revolting, or brutalizing."

Having waited long in the hope that some candid discussion of the whole subject might contain the needed terms, I venture to suggest that painful vivisection be known as *sentisection*, and painless vivisection as *callisection*. The etymology of the former word is obvious; the distinctive element of the latter is the Latin *callus*, which in a derived sense, may denote a nervous condition unrecognized, strictly speaking, by the ancients.

some idea of the relative numbers of callisectionists and sentisectionists may be gained from the fact that I have been teaching physiology in a university for twelve years, and for half that time in a medical school; yet I have never performed a sentisection, unless under that head should be included the drowning of cats and the application of water at the temperature of 60° C. (140° F.), with the view to ascertain whether such treatment would be likely to succeed with human beings.

I think that even elementary physiological instruction is incomplete without callisection, but that sentisection should be the unwelcome prerogative of the very few whose natural and acquired powers of body and mind qualify them above others to determine what experiments should be done, to perform them properly, and to wisely interpret the results. Such men, deserving alike of the highest honor and the deepest pity, should exercise their solemn office not only unrestrained by law, but upheld by the general sentiment of the profession and the public.

## FEELING AND FUNCTION AS FACTORS IN HUMAN DEVELOPMENT.*

BY LESTER F. WARD, A. M.

Sociology is now recognized as a legitimate branch of Anthropology.

The great French philosopher, Auguste Comte, although the first to introduce the word *Sociology*, did not venture to use this term extensively himself, but preferred the expression *Social Physics*, which must therefore be accepted as the true definition of sociology as intended by the father of the science.

It is important to remember this fact and to preserve throughout this necessary connection between social science and physical science. This, however, has not always been done. The phenomena of human development, may be contemplated from two quite distinct points of view, only one of which has thus far received sufficient attention. These two points of view are those respectively of feeling and of function, and it is the first of them that has been neglected. According to the usual method of approaching such questions, man is regarded as a being requiring for his preservation a certain amount of nourishment and for his perpetuation the begetting of offspring. The two essential factors from this point of view are the functions of nutrition and reproduction. Around the first of these cluster the industrial activities, and upon the second is founded the family. Out of these grow all the later and more complex characteristics of civilization. According to the other method of contemplating human development, man is regarded as a being endowed with feelings. These feelings are in the nature of desires. The existence of such desires involves the effort to gratify them, which effort in turn gives rise to human activities. The condition of society at any time is the result of these activities, just as from the point of view of function, nutrition and reproduction are the two primary essential factors; so, from the point of view of feeling, the gustatory and sexual appetites are the primary and essential factors. The advantage of the latter method over the former is that it affords, as the other does not, a scientific basis for the investigation of the laws of anthropology. The action of an organism in seeking the satisfaction of a desire finds an exact parallel in the action of a chemical molecule in seeking combination with others, or that of a column of air in rushing in to fill a vacuum. The desires of individuals constitute true forces, identical in all respects with the physical forces which other sciences deal with, and all branches of anthropology, including that of sociology, at once take their places as true sciences. This antithesis may perhaps be rendered more striking by considering function as the object which nature seeks, and feeling as that which man seeks. The object or end of nature is the preservation and perpetuation of existing life; that of man, and of all beings endowed with feeling, is the satisfaction of existing desires. The former is objective and constitutes a biological process; the latter is subjective, and is a moral or sociological process.

Properly understood these precesses possess no natural or necessary relation to each other. It is easy to imagine a person wholly destitute of taste. Indeed such cases are on record. The pleasure derived from the contact of nutritious substances with the tongue and palate is obviously distinct from the benefit which it confers upon the system after digestion. Such a person as we have supposed would none the less need food because he had no desire to partake of it.

It is still more easy to conceive of a total absence of the sexual instinct, and this is a much more common pathological condition found in practice. Here the feeling is still more obviously distinct from the function.

Why then do these desires and their functional results so universally accompany each other? The answer is that this apparently "pre-established harmony" of things having no necessary relation or resemblance has been the result of natural adaptation.

The agreeableness of the acts of nutrition and reproduction exists because without it nutrition and reproduction could never be secured. The existence of these pleasures,

* Read before the A. A. A. S., Boston, 1880.