

there is great scope for an *ad captandum* appeal. But it may fairly be questioned whether it would make any serious difference or not. It might discourage the drinking of cheap wines, which would be for the general good and not for the general harm: certainly it would encourage the consumption of a better class of articles by all the community. There are only a few things upon which it would tell, and those generally come in the way of luxuries.

But if it should add a little—and it could not add much—to the price of goods which the poor, or the middle classes, speaking commercially, consume, it is simply one of those things which are incidental to society. Many burdens fall unequally upon the taxpayers. A woman keeps a cottage for which she pays \$100 per year; she takes in washing for a living, and consumes a great deal of water, but pays only a quarter part so much water taxes as one who lives in the next street, pays \$400 per year, and does not use a third part so much water. It is the same with the lighting of the city; it is the same with the cleaning and repairing of the city; it is well within the range of proof that the Protestant minority of the city of Montreal have to bear more than half of all the city taxes. Perfectly equitable adjustment of taxes will not be found until the common character of the community is just; but, pending that, it does appear as if the substitution of specific for *ad valorem* duties would put away an enormous evil. If the interests of morality are to be considered at all; if we are anxious to promote the righteousness that "exalteth a nation," we shall be satisfied to accept a little burden for those who have been accustomed to accept and look for favours only. The well-off have really some claim to life and justice; they have some right to be considered when laws are to be altered; and if this change in the Customs duties should tell a little against the poorer and largely for morality, in which all would share—except the traders who swear to false invoices—the burden would still be bearable, and the balance of advantage would be still on the side of the many.

### "ADVANCED" SCIENCE.

Some time ago we referred to the sober and judicious address of Dr. Rudolf Virchow at the Conference of the Association of German Naturalists and Physicians at Munich in the autumn of 1877; in which he deprecated the premature claim of Professor Hæckel, that his Advanced Evolution theory, which has well been called "Darwinism run mad," should be made a compulsory part of education as a settled and well authenticated conquest of science. The audacity of such a claim is the more apparent when it is observed that Hæckel's species of Evolution theory belongs to the most reckless and extreme class of materialistic speculation,—that he advocates what he calls "Monism," reducing all forms of life and force to *one*—the mechanical—by virtue of which the union of carbon, hydrogen, oxygen and nitrogen has been the *fons et origo* of all organization, life and mind. To use his own words: "When a stone which is thrown into the air falls again to the earth according to definite laws when a crystal is formed from a saline fluid, when sulphur and mercury unite to form cinnabar, these facts are neither more nor less mechanical life-phenomena than the growth and flowering of plants, than the propagation and sensory faculties of animals, or the perception and intelligence of man." Mind and soul are disposed of in a very simple way. When a molecule of the united elements "carbon and company" is formed, to which the technical name of "plastidule" is given, the sum of their forces or properties is called the Plastidule, or molecule-soul, which Hæckel tells us are the "molecule factors of organic life." "The love and hate of atoms, the attraction and repulsion of molecules, the motion and sensation of cells and organisms built up of cells, the thought and consciousness of man—these are only various steps of the universal process of psychological evolution." Of course, in this theory there is not room for free-will or moral responsibility. Man is as much a slave to his instincts as are the brutes, and virtue and vice, right and wrong, become unmeaning and superfluous forms of speech. Such is the enlightened theory concerning the origin of things which Prof. Hæckel considers established truth, and the promulgation of which he desires as a panacea for all human needs.

It was in reply to these extravagant claims for this extreme version of the *Descendens Theorie*, as the Germans call Evolution, that Dr. Virchow delivered the earnest and forcible address which we formerly noticed, and which produced a deep impression on his distinguished and learned audience. On Prof. Hæckel, however, it seemed to have only the effect of exciting him to more extravagant expressions and to unlimited indignation against his opponents in general and Dr. Virchow in particular. He has issued an angry "Reply," which Dr. Elam notices in a recent number of the *Contemporary Review*, in which he stigmatizes Dr. Virchow as a "benighted bigot," ignorant of everything which could entitle him to express an opinion on the subject, and a suborned advocate of that most dangerous doctrine—*Creatism*, or creation—in opposition to *Self-evolution*. It will be remembered that Dr. Virchow was naively described by the *Times* correspondent last November as "innocent of faith." But this "innocence" does not avail him, in Prof. Hæckel's opinion, unless he is also willing to swallow his own wildly speculative fancies as to both mind and matter,—one of these, by the way, being, that the only difference between the conscious and unconscious mind—that of a man and that of a block of granite, for instance—is that of memory! Furthermore, he talks of organic and inorganic matter as equally "living," and discovers Christianity in the actions of the ants, who, he thinks, perform their social duties from a feeling of duty, which he calls "the best sort of Christianity"! As Dr. Elam points out, amidst such reckless confusion of terms and words, no such thing as biological science would be possible.

But what enrages him most is that Dr. Virchow did not even discuss his speculations, and put aside his favourite evolution theory as a hypothesis which remains to be established. "We are not yet entitled to teach," he said, "or to regard as a scientific fact that man is descended from the ape or any other animal." "Wait and investigate" is his soundly Baconian advice. But Hæckel wonders how he can want more evidence of the truth of Evolution than he already has, or demands what we really *know* of gravitation, or electricity or any of the subjects of our best authenticated science. On this

point Dr. Elam observes that the reply is obvious—that we do not know and do not pretend to know anything of the essential nature of either gravitation or electricity, or even of matter itself; that what is taught is simply fact as drawn from carefully observed phenomena—not belonging to the domain of speculation at all. As to our evidence for the truth of Evolution, Dr. Elam points out that we have not as yet a single authenticated instance of the modification of one species into another species, although within one species we have many modifications of varieties. Moreover, even Prof. Huxley admits that the earliest geological traces which we have of man indicate his similarity in all important respects to man as he now exists, and that there is "an immeasurable and practically infinite difference between the human and the simian stirps." While this is the case, it certainly seems only prudent, with Dr. Virchow, to refrain from teaching dogmatically, as a conquest of science, that man is descended from the ape or any other animal; although Prof. Hæckel's ingenuity has furnished us with a perfect genealogical tree representing his descent, through twenty-two stages, from the original *monera* or simple protoplasmic bodies. The only trouble about this genealogy is, that the larger proportion of the creatures forming the successive gradations have left no traces of their existence; only Prof. Hæckel considers that *they must have existed* to bridge over the gaps that would otherwise have remained in filling up his theory! It seems incredible that any professed physicist should call this science! As to the original, simple, one-celled bodies called *monera*, which Prof. Hæckel avers bridge over the gulf between inorganic and organic matter, Dr. Elam points out that they can bridge over nothing, since they are just as much living and organic bodies as the most complex animal, and that nothing even remotely resembling them can be artificially formed from the elements which compose them. Further, as to the supposed origin of the *plastidules* or molecules of organic matter, he points out that the components, carbon, hydrogen, oxygen and nitrogen, not only show no affinity towards combination, but refuse to combine artificially under any conditions at present known. To say that conditions once existed under which they would spontaneously combine, is the same kind of scientific reasoning as that by which Prof. Hæckel "evolved from his own consciousness" the missing links of his genealogical tree. It is simply begging the question,—a fallacy which seems to flourish luxuriantly among "advanced" materialistic writers.

Furthermore, Dr. Elam points out that the mechanical-force theory is utterly inadequate to account for the achievements of even the simpler forms of vegetable life, such as the *Penicillium*, which not only produces in a short time many million times the weight of the chemicals which it decomposes, but also, in the matter of decomposition alone, performs chemical feats which no known chemical or mechanical force has been able to accomplish. Altogether, it is clearly shown that the Hæckelian hypothesis of the origin of things utterly fails to show any reasonable ground on which it can be accepted by those who demand the legitimate proof which, in scientific matters, we have a right to ask.

Abstruse hypotheses in entology and biology might seem far enough away from our ordinary practical life; and Prof. Huxley has remarked that "the sphere of pure physical science and that in which lie those questions which most interest ordinary humanity lie apart, and the conclusions reached in the one have no direct effect upon the other." This may be true as regards the legitimate deductions of a sober and reasonable science—though these, as we know, exercise at least a strong indirect influence on human life and action; but as regards the rash conclusions of the materialistic school it is far from true. The doctrine that man is a mere chance product of blind mechanical force, without free will, soul, or moral responsibility, must have a most injurious effect, not only on the estimation in which human life is held, but on the public *morale*, wherever it is received as even a possible hypothesis. Even Prof. Huxley's theory as to the "physical basis of life" has, Dr. Elam says, to his own knowledge been appealed to to justify indifference with regard to human life. Anæsthesia, we believe, is growing more and more common in London as the views of the materialistic school prevail. Should Prof. Hæckel's wild fancies ever obtain any appreciable influence, there would seem to be no ground left for maintaining the sacredness of human life above that of the brute creation, and infanticide would become a matter of course whenever it happened to be convenient. There can be very little doubt, as it is, that the vague way in which views like these are scented out and caught at by the half-educated and irreligious masses is already showing its results in increased recklessness, brutality and crime, foreshadowing, it is even possible, such a carnival of confusion and moral anarchy as might rival the darkest days of heathendom if left unchecked to work out its fatal natural results.

Fidelis.

### THE LEFT HAND: A PLEA FOR THE NEGLECTED.

It may be Quixotic; but I must do battle in behalf of my Dulcinea. In this age, it is said that there is no wrong without a remedy. This I deny. I am positive, however, that there is no wrong, great or small, which, when pointed out, will not elicit a groan from somebody—or impel some philanthropist, or it may be, some mere grumbler—to wag his tongue or dip his pen in ink, to set forth their grievances. It is not only the wronged, but the neglected, that find friends in our days. We redress, or strive to redress, the wrongs of history. Has not Richard the Third had his defenders and advocates? Has not Jack Cade been proved to be a gentleman? Has not Macbeth been whitewashed of the crime of murder? and have not even those despised little creatures the toads, been taken under the protection of philosophers, relieved of the charge of being poisonous and disgusting reptiles, and recognized as the harmless fellow-labourers of the gardener and cultivator; a friend who devours for him the too prolific insects that consume the tender roots and shoots of his vegetables? And as for the neglected portions of the human race, do not the Parliaments and the Press continually ring and overflow with their sorrows, and with the woful catalogue of the dangers that will, or may afflict society, if justice be not done? The wrongs of children, the wrongs of women, the wrongs of paupers, the wrongs of lunatics,—the wrongs of dumb animals—find zealous tongues and printing presses to set them forth; but I look in vain for