

SCIENTIFIC MODERATION.

It is refreshing, in an age when scientific dogmatism seems to be trying to out-herod religious dogmatism in loud talking and oracular bluster, to meet with an address from a scientific leader, so full of scientific modesty, liberality, fairness and caution as the discourse of Professor Virchow on "The Freedom of Science in the Modern State." Dr. Rudolf Virchow is Professor of Pathology in the University of Berlin, an able and zealous leader of the Liberal Party in the Prussian and German Parliaments, and described by the *Times* correspondent as "a luminary in Natural Science, opposed to every species of orthodoxy, and altogether innocent of faith." The discourse referred to was delivered before the Conference of German Naturalists at Munich, last September, and copious extracts from it are given in a recent issue of the *Times*. It discusses very freely Professor Hackel's demand that the evolution hypothesis should form a part of universal primary education in Germany, or as Professor Virchow is declared to be "innocent of faith," and himself refers to "what is called positive faith," as beyond the province of his discussions, his very decided objections to this demand of Professor Hackel's cannot possibly be imputed to "theological animus." His position simply is, that the evolution theory has not yet arrived at the stage when it can be confidently taught as scientific truth. He says:—"When Herr Hackel says that it is a question for the educator whether the theory of human evolution (*die Descendenz theorie*) should be at once laid down as the basis of education, and the protoplasmic soul (*die Plastidul Seele*) be assumed as the foundation of all ideas concerning spiritual being; and whether the teacher is to trace back the origin of the human race to the lowest classes of the organic kingdom, nay, still further, to spontaneous generation,—this is, in my opinion, a perversion of the teacher's office. If the evolution theory is as certain as Herr Hackel assumes it to be, then we must demand, that it is a necessary claim that it should be introduced into the schools.—Even if we did not demand its introduction into the plan of the schools, it would come in of itself."

Though all our readers may not be acquainted with the theory of "the protoplasmic soul"—this curious *annexe* of the evolution theory,—Professor Virchow's exposition of it cannot fail to be interesting. "It is easy to say that 'a cell consists of small portions, and these we call plastidules, but the plastidules are composed of carbon, hydrogen, oxygen and nitrogen, and are endowed with a particular soul; this soul is the product or sum of the forces which the chemical atoms possess.' To be sure this is possible. I cannot form an exact judgment about it. It is one of the positions which are for me still unapproachable. But I must plainly say that so long as no one can define for me the properties of carbon, hydrogen, oxygen and nitrogen, in such a way that I can conceive how from the sum of them a soul arises, so long am I unable to admit that we should be at all justified in importing the plastidulic soul into the course of our education, or in requiring every educated man to receive it as scientific truth, so as to argue from it, as a logical premise, and to found his whole view of the world upon it. This we really cannot demand. On the contrary, I am of opinion that, before we designate such hypothesis as the voice of science, before we say 'This is modern science,' we should first have to conduct a long series of scientific investigations. We must therefore say to the teachers in schools 'Do not teach it.'"

Professor Virchow happily brings out the inevitableness of what is called "half knowledge" among educated men generally, and even among specialists, except in the one particular direction in which their knowledge has been developed. He points out that the utmost which the majority of educated men can be expected to attain is a general view of the tendencies and progress of science, and a definite realization of the extent of their ignorance. He points out the danger of forgetting "how impossible it is in the vast magnitude of the natural sciences and in the inconceivable abundance of materials, for any living man to master the sum total of all these details," and of attempting to "draw universal conclusions in respect of the history of all things, while the theorist has not yet himself completely mastered the very materials from which he attempts to draw these conclusions." In a word, he deprecates the tendency to a too hasty and sweeping generalization which has led to much rash dogmatism on this subject of evolution, and thus happily applies his general position to the question of spontaneous generation:

"The doctrine of spontaneous generation has now again been taken up in connection with Darwinism, and I cannot deny that there is a sort of strong temptation to adopt the ultimate conclusion of the evolution theory, and after setting forth the whole series of living forms, from the lowest *protista*, to the highest human organism, to proceed to link on this long series to the inorganic world. It is in harmony with the tendency to generalization so natural to man, that such a view has found its place in the speculations of various peoples up to the most venerable antiquity. We feel it an undeniable necessity not to sever the organic world from the whole, as if it were something disjoined from that whole, but rather to establish firmly its connection with the whole. In this sense there is something soothing in being able to say that the group of Atoms, Carbon & Co.,—this is perhaps rather too brief, but still correct, inasmuch as carbon is probably the essential element,—well! that this firm of Carbon & Co. has at some time or other dissolved partnership from the common carbon and has founded under separate conditions, the first plastidule, and that they still continue to establish new branch companies. But in opposition to this it must be emphatically stated that all really scientific knowledge respecting the processes of life has followed a course exactly contrary. We know not a single positive fact to prove that a *generatio aquivoca* has ever been made, that there ever has been procreation in this way; that inorganic masses—such as the firm of Carbon & Co., have ever spontaneously developed themselves into organic masses. Nevertheless, I grant that if any one is determined to form for himself an idea of how the first organic being could come into existence of itself, nothing further is left than to go back to spontaneous generation. Thus much is evident. If I do not choose to accept a theory of creation; if I refuse to believe that there was a special Creator who took the clod of earth and breathed into it the breath of life; if I prefer to make for myself a verse after my own fashion (in the place of the verse in Genesis); then I must make it in the sense of *generatio aquivoca* (*primus non datur*). No alternative remains when once we say, 'I do not accept the creation, but I will have an explanation!' Whoever takes up the first posi-

tion must go on to the second position and say, 'Ergo, I assume the *generatio aquivoca*.' But of this we do not possess any actual proof. No one has ever seen a *generatio aquivoca* really effected, and whoever supposes that it has occurred is contradicted by the naturalist and not merely by the theologian."

Not only does he thus decidedly repudiate the assumption of spontaneous generation, linking the organic to the inorganic world, but he declines, moreover, to admit that the monkey parentage of man is as self-evident as some enthusiastic evolutionists would compel us to believe. Alluding to the fact that no fossil remains of humanity are to be found in the tertiary period, he thus speaks of the human fossils supposed to belong to the quaternary period:—

"When we study the fossil man of the quaternary period, who must of course have stood comparatively near our primitive ancestors in the series of descent or rather of ascent, we always find a man just such as men are now. As recently as ten years ago, whenever a skull was found in a peat bog, or in pile dwellings, or in ancient caves, people fancied they saw in it a wonderful token of a savage state still quite undeveloped. They smelt out the very scent of the ape—only the trail has gradually been lost more and more. The old troglodytes, pile-villagers and bog people proved to be quite a respectable society. They have heads so large that many a living person would be only too happy to possess such."

He adds the remark, however, that the French physiologists suggest that these large brains may have consisted more of connective structure than of brain tissue proper, which seems a rather gratuitous mode of explaining away their size in the interests of evolution. This theory, in its main outlines, may or may not be proved true. It may be shown to be subject to many limitations and modifications not now thought of. But when dogmatists, like Professor Huxley tell us that they "would not insult any sane man" by supposing that he would reject the Darwinian hypothesis,—when we are oracularly told that as reasonable beings we must accept the ape as the parent of humanity, it is a pleasant contrast to hear from Germany—the very cradle and centre of natural science—the calm and cautious tone of Professor Virchow, declaring that "as a matter of fact we must positively recognise that as yet there exists a sharp line of demarcation between man and the ape. We cannot teach, we cannot pronounce it to be a conquest of science, that man descends from the ape or from any other animal."

Professor Virchow, in the course of his address, makes the suggestive remark that science, like the church, develops in three directions,—the objective, or historical—the subjective, or speculative,—and that middle ground which he calls "faith"; thus curiously endorsing, from a scientific point of view, the threefold division of Historical Christianity, Theology and Religion. He concludes his very interesting address with an earnest recommendation to students of science to remember that it is *knowledge*, not *theory*, with which science has to do, and that Lord Bacon defines this knowledge to be "not knowledge of hypothesis but actual and positive knowledge" of what *is*. Under this head, as we have seen, he declines to admit the doctrine of evolution, till it shall have been distinctly verified by actual proof.

FIDELIS.

CHURCHES AND CHURCHES.

To the Editor of the CANADIAN SPECTATOR:

SIR,—In the SPECTATOR of last week there is an excellent editorial on Ecclesiastical Finance, on which I wish to make a few remarks by way of addition.

The "bunching" of protestant churches in a certain locality in this city is a great mistake, and leads to things that are neither lovely nor of good report. I can stand in my window, and see eleven protestant churches, all within a short distance of each other. This state of things has led to unholy rivalry, and jealousy, so that there is really more effectual proselytizing among these churches; than there is either from the Roman Catholic Church or from the world. A church official remarked to me the other day that they had had about fifty members added to their church within a few months; upon enquiry I found that they had nearly all come from neighbouring churches. This process of draining other churches is constantly going on, and I am sorry to say, it is not discouraged, but rather rejoiced in, by those in high places, to the sorrow of good ministers of Jesus Christ, and to the weakening of churches which do not happen to be wealthy, and cannot boast of fine organs, artistic singing, and other "attractions." So that there is I fear less honour, more unfair dealing between these churches by far, than you would find between rival mercantile houses in the city, and the good fortune of one church is the misfortune of other churches, while it is no real gain to the cause of Christ. Surely these things out not so to be.

In the article alluded to it is said that the main work of a preacher is to preach; but what is preaching in the New Testament sense? Does it mean holding forth from a costly and fanciful desk in a fine building called a church, for about thirty or forty minutes, from a given text, or verse of scripture, sometimes selected after the discourse is written out? Does it not rather mean proclaiming the good news and glad tidings of the gospel to the people wherever they can be found? The Master said, "Go ye into all the world." He did not say, "Come into our churches, and we will preach to you," but "Go ye," &c., "into the highways, and hedges, and streets, and lanes of the city, and compel them to come in that my house may be filled." St. Paul also informs us that he taught publicly and from house to house; else, how could he write—I take you to record this day, that I am pure from the blood of all men (Acts xx., 26)?

It has long seemed to me that there has been no lack of what is called "good preaching" in this city, inside the churches; but there has been, I fear, a sad lack of good apostolic preaching from house to house. We truly need "to have more care for men, rather than for any particular church," and I would also add for women and children too, in their homes, where with many the great battle of life is fought. But comparatively few of the mothers, and wives of workingmen, and the poor, ever see the inside of a church, and but rarely receive a pastoral visit from the true minister of the Gospel. A good woman remarked to me the other day, that she had only received two such visits in seven years; another, one visit in eighteen months; another, two visits in six months; another,