

"EVOLUTION ADMITTED, WHAT, THEN?"

It is gratifying to note an obvious subsidence of alarm on the part of eminent divines in regard to the acceptance of evolution doctrines, accompanied by the bolder enunciation of rational views respecting religion. Dr. E. O. Haven, Chancellor of the University of Syracuse, and now a Methodist bishop, sends a communication to a leading religious journal under the above title, which is full of significant foreshadowings that are worthy of notice.

Dr. Haven utters a very important truth when he says: "Men are prone to associate their religion with its drapery. This becomes obsolete and must be changed, and the looker-on fancies that the very body and soul are gone." This is the view of science. Religion, like other things, is progressive, and proceeds from stage to stage, successively molting its integuments with increasing expansion and a higher life, or, by the figure of Dr. Haven, shedding its worn-out clothing as occasion requires. It is a great point gained in this matter to discriminate between the living body and its accidental and temporary wrappings—between perennial truth and its obsolete accompaniments. The credal habiliments are not the vital thing they invest, and to cling to them as if they were is superstition. Dr. Haven's point of view enables us to appreciate the triviality of denominational cuts, fits and styles; and illustrates the futility of venerating theological rags and tatters instead of the essential religious ideas which require ever to be clothed anew as men grow in grace. And what a pitiful spectacle, moreover, it is to see people so confused and perverted in their notions as to actually worship the heaps of old clothes that have been long ago worn out and cast off.

We are glad to observe that Bishop Haven does not recoil from the conception of creation as a continuous, ever-unfolding work. He wisely accepts the view of God, compelled by evolution, as that of an eternally-creating Spirit. He says, "Is there any reason whatever to believe that God at any past period, large or small, had any more or less to do than now with this earth and all that it contains?" And again: "Had we all been educated in a theory of gradualism and constancy and improvement, and thoroughly saturated with it, and yet aroused into a profound belief in God, as is certainly conceivable on that theory, and then, should the theory of a Deity sometimes awake and sometimes asleep be suggested, it would shock some feeble minds into atheism." But would not strong minds also be thus shocked, and justly so; and would not the atheism be real? When evolution has become an established and familiar idea in the religious world, and the Creative Power is conceived—as far as such conception is possible to finite faculties—as the mighty, ever-energizing spirit of which the boundless universe is but the manifestation, a reversion to present current notions of the method of creation will assuredly be regarded as a lapse into atheistic paganism, analogons to a present backward plunge into fetichism.—*Prof. E. L. Youmans.*

MAKE YOUR OWN TOOLS.

This ambition to individualize tools and to adapt them to their users is a characteristic of skillful workmen, and makes a broad line of distinction between the mechanic and the mere labourer. A kit of tools made by the mechanic himself is a recommendation of the mechanic. Few intelligent foremen sneer at this professional pride, or ridicule its visible products. And the possession of a kit of his own tools, made by himself, is not only an evidence of the honourable pride of the workman, but is frequently a guaranty of his ability. A workman who can make a good kit of tools, who can shape a cold-chisel, construct a gauge, hang a hammer, or fashion an elegant and handy scratch-awl, and do other good jobs, evidences a pride in his own handiwork that will not be satisfied with half-done jobs.

The desire of the mechanic to have *his own* tools made, or at least adapted, by himself, is perfectly natural. With the knowledge of the fact that individuals differ, comes the evidence that what suits the mass is not adapted to the one; that what is for all is not for this particular one. How many machinists are at home in handling a strange hammer? How often the workman drops a hammer he has picked up in haste, and delays an instant until he can reach for, or go for his own! This is not foolish fastidiousness; for those who most stick to their own tools are old, experienced workmen, who have outgrown the false pride which would make them insist on their way as the only right way. The fact is that the workman is the best judge of the adaptability of a tool, for

himself, and if he does not make and fashion his own, he at least chooses and modifies those produced by others.

This necessity, or the advantage of adaptability, received an illustration recently, when a smith, an expert forger of iron and steel, with 20 years' experience, showed the writer a hammer with a split handle, saying, "This is the best hammer in the shop to finish off a forging handsomely." The fact was that he had dared to shave down the hickory small enough in the neck of the handle to give it the "feeling" spring to his hand, for fear of breaking it in use, when a foul blow in the hand of an apprentice split the handle, and made it the *handiest* one in the shop.—*Exchange.*

THE FOSSIL MAN.

Prehistoric archæology, the latest-born of the sciences, like her elder sister, geology, has lived through the successive stages of scornful denial, doubt and unwilling assent, and has finally won for herself substantial recognition. The "antiquity of man" is now an established fact. Even its most strenuous opponents are forced to concede that there are proofs of his existence during a lapse of time far exceeding the limits of the previously approved chronology. For somewhat of the suspicion with which this result has been received, certain of its advocates may have themselves to blame. Where absolute chronological determinations were of necessity impossible, and where, even at the present stage of the investigation, only general approximation can be reached, it was at least injudicious to startle received opinions, and to arouse prejudices, by asserting for mankind an antiquity of hundreds of thousands of years. Moreover, the great name of Cuvier was held up as a barrier in the path of those who claimed to have discovered proofs of man's existence under geological conditions different from the present. Cuvier, however, never denied the possibility of finding "the fossil man;" he only questioned the sufficiency of the evidence of his existence which had been brought under his notice, and with great reason, in view of the numerous instances in which pretended fossil bones had turned out to be those of animals, or even merely natural formations.—*H. W. Haynes, in Popular Science Monthly.*

RANSOME'S SLAG CEMENT.—Our contemporary, *London Engineering*, devotes some space in a late issue to an account of the experiments for Mr. Frederick Ransome's new process for producing hydraulic cement of very superior qualities from blast-furnace slag with suitable mixtures. Our readers will recall the general features of Mr. Ransome's process from our recent references to the subject in this department. Mr. R., it now appears, has obtained even better results by modifying his process by the employment of slags containing a high percentage of alumina, the product given even better results as to strength than in his earlier experiments. The inventor has proceeded on the theory of MM. Frey, Ruot, and Chatony, that "aluminates of lime is the principle hydraulic agents in cements;" and that the setting of a hydraulic cement is due to two causes: (1) To the hydration of aluminates of lime; and (2) to the action of hydrate of lime upon the silicate of lime and the silicate of alumina and lime which exist in all cements, and in this case act as puzzolanas. Our contemporary states that the results arrived at by Mr. Ransome fully corroborate these views, and by attaching full importance to the presence of alumina, the invention in question has succeeded in greatly increasing the strength of the new cement. Samples, it is added, show remarkable hardness and closeness, and the material promises to become an exceedingly valuable one. By the employment of blast-furnace slag-sand (Mr. Wood's process), the greater part of the refuse involved in the production of the clinkers used in the ordinary process of cement-making is avoided, the cost of fuel and grinding is reduced, and a application is made of what has been a practically useless material.

The Engineer says that two Germans have made a new form of machine for separating the turnings and borings of brass and copper from those of iron and steel. The mixed metals falls upon a magnetized drum, to which the iron and steel adhere, leaving the copper and brass to fall into a special reservoir below. There are two cylinders rotating in the same direction, so that the iron which escapes from the first cylinder is retained by the second. The surface of the cylinder is formed by flat bands or strips of soft iron, alternating with strips of copper, and each of the iron bands is in contact with a row of horse-shoe magnets. The adherent metal is removed by revolving brushes.