

Origin of Mechanics Institutions.

A correspondent of one of our daily papers, writing from Toronto, C. W., states that there is a good Mechanics' Institute in that city, numbering 650 members, and "in its reading room there is a fac simile of Dr. Birchbeck's address on laying the foundation stone of the London Mechanics' Institute, A.D. 1823—the first of its kind."

It affords us pleasure to hear that Toronto has such a prosperous Mechanics' Institute, but if the members have obtained a fac simile of Dr. Birkbeck's (not Birchbeck) address on laying the foundation stone of the London Institute, under the impression that it was the first of its kind, then we must tell them they are much mistaken.

The first institution of the kind was opened in Glasgow in 1796, and founded by money bequeathed by Prof. Anderson, who for years previous to his death gave lectures within the College to mechanics and artisans on chemistry, mechanics, and natural philosophy. Dr. Birkbeck was a lecturer in this institution prior to his removal to London in 1804; his successor was Dr. Ure, author of a number of works on art and science. In July, 1823, a number of members left the Anderson Institute and founded a new Mechanics' Institution, whose first lecturer was Dr. Steele, the originator of the New York Mechanics' Institute. The London Mechanics' Institute was formed in October, 1823, with Dr. Birkbeck as President, who delivered the address referred to on that occasion. At that period there were two such institutions in Glasgow; the first, termed the Andersonian institution, is the most perfect and flourishing of its kind in the world; the second is also a good institution, but not equal to the one established in London, we believe, because it has not the same amount of wealth to sustain it.

To Dr. Anderson, of Glasgow, belongs the credit of being the founder and father of Mechanics' Institutes. He was Professor of Natural Philosophy in the college in that city for 40 years, and its doors were opened to admit mechanics and artisans for a very small fee, to attend the lectures. He was a great Republican, and invented that most important arm of warfare, *flying artillery*.

New Tanning Process.

Although a great number of patents have been taken out for tanning processes, both at home and abroad—more than a hundred having been granted—new modes are still being patented and brought before the public.

We learn by the *London Mechanic's Magazine* that an important improvement in the tanning of skins and hides has recently been introduced into that country by M. Funcke, a practical tanner and currier, of Herdecke, Westphalia. It consists in counteracting a too rapid action of the tannic acid upon the surface of the skins. The mode of operation is as follows:—

The un-haired skins or hides are first passed through a weak liquor of the soda of commerce, then hung up to dry. They are then steeped in a common oak, hemlock, or other tanning liquor of the common strength, to which has been added some vinegar. In this liquor the pores of the skins are opened, and thus the tannic acid is admitted to the interior. The next tannic liquor in which the skins are steeped is made a little stronger with the bark, also some more vinegar, and a little dissolved sugar is added. The succeeding liquors to which the hides are subjected, until they are finished, do not differ from those in common use. The vinegar being a vegetable acid, unites with the alkali of the soda in the hides, and its carbonic acid is set free in the pores of the skin; this expands them, and allows the tannin admission to the center of the hides in the first tanning liquor. The sugar in the second tannin liquor, unites with the vinegar, and forms a tannin mixture, it is said, which is of a softening character, imparting elasticity to the leather. The strength of the soda lye used to steep the hides in the first stage, is not above 1°—very weak—and a very small quantity of vinegar is sufficient for the purpose stated. Any other vegetable acid may be used in place of the vinegar, but it is the cheapest.

The expanding of the pores of hides and skins by generating a gas in the tanning liquor by the agency of the carbonate of soda and an acid, such as sulphuric and muriatic, is not new. It has been tried in this country, and is known by the name of the "Hibbard process," but it has not displaced the old methods, and never will. The process of M. Funcke is the same in its nature as that of M. Claussen for splitting the fibers of flax, to produce flax cotton, and which, we think, unless performed with great care, will injure the hides and skins, by tending to separate their fibers, and thus produce more weak, although it may be more thorough and quicker tanned leather. The use of vegetable acids in tanning is certainly more safe than mineral acids.

It is, certainly, an object of importance to prevent the too rapid tanning of hides at the surface, and every process of quick tanning is liable to this evil, by the early closing of the pores, thus preventing the interior of hides from being tanned.

(For the Scientific American.)
Auricles for the Deaf.

My attention has been called to an article in the *SCIENTIFIC AMERICAN*, of August 9th, on the subject of Artificial Ears, which I desire to notice, not for the purpose of calling in question Dr. Byford's views, resulting from his experiments, but to make known to all who are afflicted, and those interested for them, the actual results of my own experiments with the instruments which you kindly allude to in your editorial comment on Dr. Byford's letter.



I have for some time been aware of the various improvements made, in affording relief to the deaf, and early became convinced that they were, in general, extremely defective. The objections were always so prominent, that they seemed rather to repel than invite the unfortunate to use them. First, there is the india rubber tube, with the mouth-piece, carried like a snake coiled around one's hand—the offensive mouth-piece used indiscriminately. Then there was the trumpet to be carried about, compelling, as with the tube, the concentrated energy of the unfortunate brain on one ear. Then we had gutta percha ear fittings, that were too inefficient to impart vibration, and be heard at short distances—having the advantage of the others, by reason of not requiring to be supported by hand, but that was all.

With these radical objections to overcome, I began with the main idea of first securing a strong vibrative power—a power that *must* make an impression, and thus enable the auricular nerves to hear what was addressed to them, and without any special effort of the wearer—that could be worn so as hardly to be felt, and what was of more importance, comely in appearance—that no matter how powerful such vibration might become, it could be controlled and subjected to the various degrees of deafness required.

This was my programme. I avoided india rubber, gutta percha, and all substances not good as acoustic reflectors, and provided prepared metal plates of three varieties for each instrument, and hitting on that peculiar form and bend of a graduated tube, A, as you see in the accompanying engraving, by which the ear is scarcely touched, and the concave sweep of it inside, B, fitting the head and causing it

to be so supported, when adjusted, that no outside pressure can force the tube further than needed. C are small tubes that fit the ear; D are springs connecting the two auricles; the springs slide to suit different heads.

E is a perforated drum or partition intersecting the channel of vibration. By increasing or diminishing the size of the aperture of E, the power of the vibrating sound is controlled to suit the degree of deafness of the wearer.

Since the inauguration of my instruments, I have been reluctant to claim from the public any more attention than an occasional advertisement, which has called out an extent of correspondence that is truly astonishing.—Those who call on me and get fitted, invariably have the story to tell of their many neighbors afflicted in the same manner—with the mournful tale of long and expensive efforts undergone to obtain medical relief—that never succeeded.

I add that the instruments will furnish capital puffs for a lady's toilet; as long as the present fashion exists, deaf ladies could not desire anything more appropriate, as the whole is not affected by being entirely covered.

I ought to remark, in conclusion, that the effect of the circuit, occasioned by the connection of the auricles with each other, by the band, D, passing over the head, is instantaneous, reminding one of the magnetic circuit in telegraph batteries. E. G. HYDE.

[See the inventor's advertisement in another column.]

Harmony of Revelation and Science.

During the past few years much discussion has been elicited in regard to the teachings of geology and their bearing on Revelation.—Some have asserted that the views of geologists respecting the age of the world, and the succession of organic creations, contradict the Scriptures, while others assert the contrary.

The question is one of deep interest, and has engaged, and is now engaging the attention of many men eminent for scholastic and scientific attainments. Various works have been written, *pro* and *con*, on the subject, and numerous controversial papers given to the world through the columns of certain periodicals.

Prof. Taylor Lewis, of Union College, distinguished for his biblical learning, and Prof. Dana, of Yale College, so eminent for his scientific knowledge and ability, have had a discussion in recent numbers of the *Bibliotheca Sacra*, and the question does not seem to be considered exhausted, for Prof. Barrows, of Andover, has gone into it again in the last number of this able review.

In our opinion the question has been brought to a point at which it may truly be said, "argument is exhausted, and further discussion worse than useless." Our reasons for these opinions will be given in a few words.

The Scriptures and the science of geology teach us that this earth was at one period in a state or condition without a living thing upon it—no plant, no flower, no insect, bird, beast, or man. Both teach us that the successive acts of creation described in the first book of Genesis are in exact accordance with the revelations of the book of nature. There is no difference of opinion between the teachings of Revelation and Science on these points.

One class believe that the *days* mentioned in the first chapter of Genesis mean epochs of time, and may be so interpreted, and thus accord with the teachings of geology; the other class believe that the *days* referred to cannot be so interpreted; that they mean solar days; and thus they assert that this science as generally taught, is contradictory to Revelation. Thus the main question stands, but not involving, we conceive, the least contradiction between science and revelation, for the question of controversy is one only relating to *TIME*.

Moses, who certainly was ignorant of geology, has described the successive acts of creation in that specific order which accords with the science of geology. It is reasonable to suppose that an ignorant man, in describing the order of nature, as unfolded by the successive fiat of the great Jehovah, would

have presented only a confused and contradictory effusion; but instead of the first chapter of history being of this character, it vibrates in unison with the discoveries of the most modern science, thus proving that the pen of its author was directed by the Author of Creation. The question of the harmony of revelation and science, as it relates to the "orders of creation," stands upon a grand and impregnable basis.

Benefits of Machinery.—Mechanical Engineers.

A great meeting of Mechanical Engineers was recently held in Glasgow, and Mr. Joseph Whitworth, of Manchester, (who was Commissioner to our World's Fair in 1853) President, delivered an appropriate introductory address. He referred with approbation to the new process for the manufacture of iron; and as an illustration of the value of the invention, mentioned that when employed in making rifle balls for the Government, one of the greatest difficulties with which he had to contend in endeavoring to secure accuracy of flight was defects in the composition of the iron itself. He next referred to the importance of securing greater nicety of measurement, and directed attention to a machine he had invented, by means of which the one-millionth part of an inch could be measured. He advocated the decimalizing of weights and measures, deprecating the carriage duty as a tax on mechanical industry, and concluded by making a comparison of the extent of the industrial production of the country at the present time with what it was at the period when hand labor was more employed. As one of the most striking contrasts which occurred to him, he mentioned that in the article of lace, one man with a machine could turn out as much work as at one time would have employed 8000 operatives; and the chipping and planing of a square foot of cast-iron, which once cost 12s., was now accomplished by machine labor at a cost of 1d. And not the least benefit of the general introduction of machinery were the larger wages earned by the operative under the improved system.

Messrs. Craig & Righter, of Newport, Ky., have contracted with the Engineering Bureau of the War Department to keep the South-West Pass and the Outer Pass, of the Mississippi River, open to a depth of 20 feet and width of 100 yards, for five years, for the sum of \$330,000.

Useless Inflated Life Preservers.

During the great gale on Long Island Sound on the night of the 16th ult., when the steamboat *Connecticut* came near being lost, it was found that most of the flexible inflated life-preservers were totally useless. The Steamboat Inspectors condemned the use of such life-preservers at their annual meeting last year, and yet they continue to be kept on board of some steamboats as a hypocritical fulfilment of the new Steamboat Law.

The U. S. Astronomer.

The *Boston Traveller* states that George P. Bond, first assistant at the Astronomical Observatory of Harvard University, has declined the appointment recently tendered him by the President of the United States, of Chief Astronomer, under the act of Congress of August 11th, 1856, to carry into effect, the first article of the treaty of June 10th, 1846, between the United States and Great Britain, by running the boundary line between the United States and British Oregon. The appointment was made without any previous consultation with Mr. Bond.

Removing Incrustations from Culinary Vessels

MESSRS. EDITORS—In answer to A. J. B., of Mass., in No. 3, in relation to removing incrustations from culinary vessels, if he will boil a few potatoes in such vessels they will produce the desired effect. This is the method used here in the West, where we have none but hard water. I. A. HOXIE.
Cooksville, Wis., Oct., 1856

Present to an American Inventor.

Louis Napoleon has presented Jos. Francis of this city, with a gold snuff-box, as a mark of satisfaction, after witnessing some experiments with his life boats and military wagons.