hills, supporting them, were unmoved; ashes and ejected scoriæ were spread upon their declivities, and thus, aided by subsequent rains and a tropical sun, has unburied the hidden bones of various animals in the water-ways. While those of the mastodon are also exhumed, their compeers of Siberia await for a distant future to regain a tropical sun. Which of the two is the older? That any lived after the disappearance here of the glaciers, proves nothing. With proper surroundings, they might exist to-day.

I desire to state clearly that the Rev. Stephen D. Peet's assertion that Dr. Brinton makes out on my own testimony that the foot-prints did not belong to eocene times, is in error, and needlessly so, as he had received from me an explicit denial of any connection of sand with the shells. The leaves, or dust of leaves, if any were with the shells, came from trees growing around the lake. No volcanic force has disturbed the location, at least in historic times. The sandal, or some covering to protect the feet, the Rev. Mr. Peet knew was ascribed to an impression sent to Harvard, from a location forty miles distant from those at the quarry, to the south-west, and on the other side, of the range of extinct volcanoes.

I never said that the "molten streams of lava found their way into Lake Managua." There is nothing of the kind found there on the lake border. Layers of tufa, made up of volcanic detritus, is the formation of all the district we speak of; and at Masaya, Juotepi, etc., the Tiscapa lava flow spoken of by Levy must have occurred to that gentleman in his dreams. If Dr. Brinton had not quoted Levy in connection with my attempt to explain the history of the impressions I sent him, no such erroneous data would have gone forth in regard to the outbursts of lava that occurred. The mountain of Masaya, between Nindri and Managua, is the only notable locality. It passed over the old tufa. Monobracho also ejected lava, and it spread over the plain to the south-west of Granada. These mountains were in action long subsequent to those mentioned.

The Rev. Mr. Peet's assertion that Harvard and the National Museum have only slabs with impressions of feet to judge from, is also incorrect. If he will re-peruse his own *Antiquarian*, he will find there bitter complaints, on my part, in regard to the lack of care in the examination of fossils found with and separate from them, which alone would identify their geological age. His aim is undoubtedly to keep up the controversy. Truth is certainly not obtained by making direct denials of phenomenal occurrences that Dr. Brinton and Mr. Peet never saw or investigated. The "big-toe" argument will not apply to an arched instep. A long *os calcis* and a flat-footed race have the big toe perfect. Let us wait until one of the fossil feet are found. Before belittling finds of the class mentioned they should be compared with similar ones occurring under volcanic formations in other countries whose geological examination has been determined by competent men. "The great volcanic outburst that overran northern and central California," says Dr. L. G. Yates of Santa Barbara, "covered the relics of a race who were there, and lived there, previously, whose implements were found under Table Mountain, a bosaltic formation, two hundred feet in thickness. These relics are unique, and were made, and covered by lava, so long ago, that the river bed down which the lava ran (and where it still lies, forming the summit) is now high above the surrounding country, forming the Table Mountain, and where the mountains which were on either side of the old river-bed have been washed away, and their places now occupied by valleys and river-beds, and since which time the whole surface of the country has been changed, with a new surface soil, a new vegetation, and a new fauna."

Facts of this nature, by men of Dr. Yates's character, should not be ignored. No sceptic can doubt that man existed there in as remote times as here in Central America. I have often reported that there was a resemblance in the geological finds of the two. California has no greater variety of minerals; gold, silver, tin, lead, bismuth, platinum, nickel, zinc, iron, etc., are among the metals.

I want to call the attention of scientists to this neglected spot in Nicaragua, and convince them that man existed here long prior to the glacial era. Will some of the scientists in the United States do me the favor to look over the few shells sent by me to the National Museum. These specimens will tell the exact time (geologically) when man lived here in the caves, and subsisted on the very oysters (i.e., from the shells). The specimens may be seen among those I forwarded a few years ago, and which are now in some part of the National Museum.

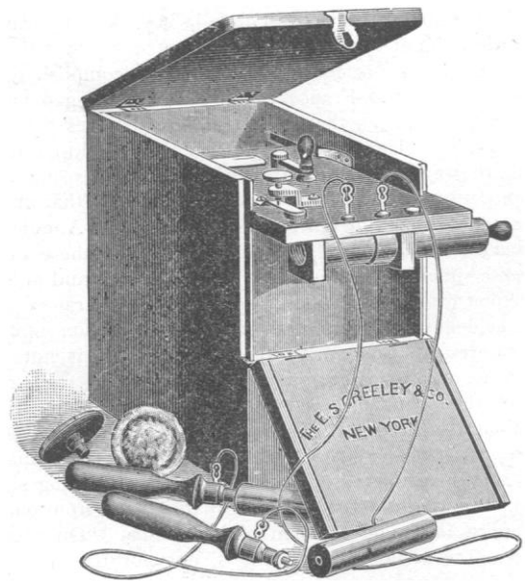
Science Text-Books.

IS there to be found a really good "Physics" for lads of twelve to fifteen, as good as Shaler's "Geology" and Packard's "Zoology"? Several firms publish and manage to "introduce" a lot of old rubbish as science text-books. It is a scandal that ought to be ventilated. I have just opened a "History" sent out by a firm that professes to patronize and popularize science, and my boys are promptly told, "For the history of the Creation, Deluge, and Dispersion, the reader is referred to the Scriptural narrative." It needs some patience to get through this *Aufklavüng* from stuff to real science. P.

INDUSTRIAL NOTES.

New Electro-Medical Apparatus.

AN improved form of Laclanche Faradic battery for the use of physicians and surgeons, is shown in the accompanying illustration. In this battery the exciting fluid is a simple and inexpensive solution of sal ammoniac and water, which will last without renewal from six to twelve months. The zinc element is a pencil of pure metal, the position of which is never disturbed, whether the battery is in action or not. It usually lasts over a year, and is replaced at slight expense. The carbon element does not require renewal, as a rule, oftener than once in two years.



The battery has a handsomely polished hard-wood case, opening at the top and at the front. It is provided with a metallic handle, which, together with all the metallic parts of the machine itself, is nickel-plated. The case measures nine and a quarter inches high, five inches and a half wide, and seven inches and a half long. In the case is a commodious electrode pocket containing a pair of interchangeable electrode handles, a pair of nickel-plated hand electrodes, and a sponge electrode. The battery cell is inclosed in an inner compartment, which, while it is closed up and completely separates the cell from the rest of the apparatus, is arranged with a sliding cover to give convenient access to it whenever required.

A feature of special importance is the fact that the cell and all its working parts are mounted on a polished ebonized slide, with automatic electrical contacts beneath its surface. The act of pulling out this slide a short distance serves to start the machine, and closing it up cuts out the cell and stops the action. This makes it impossible to close the case without cutting out the cell. This battery is manufactured by E. S. Greeley & Company of this city.