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THE LA GUAYRA AND CARACAS RAILWAY.—A RECLAMATION.

In our SUPPLEMENT of Nov. 21, 1885, we gave illustrations of some of the remarkable engineering works pertaining to the above railway, together with a few historical particulars of the origin and progress of the enterprise, which were derived, as there stated, from an English contemporary, *Engineering*. Probably by some inadvertence, the writer omitted to state that the originator and planner of the great work was an American citizen, Mr. John Houston, C.E., well known in engineering circles here, and specially distinguished for his success in mastering difficult situations. We give in another column a letter from Mr. Houston, in which he modestly rebukes the injustice done him by the omission of his name as the real author of the surveys, maps, and plans of the work; and we take pleasure in now rendering to him honor to whom honor is due. Mr. Houston is entitled to the highest credit for his services in laying the foundations for this extraordinary example of engineering.

THE TELEPHONE CONTROVERSY.

Among the most recent and ablest contributions to the literature of the telephone is an exhaustive article by Prof. Edwin J. Houston, of the Central High School, Philadelphia, contributed to the pages of the *Franklin Journal*. He presents with great clearness the invention of Reis, and in his favor as the prior inventor brings an overwhelming array of evidence.

A considerable number of illustrations are given, with descriptions fully explaining the nature of Reis' inventions and those of Bell, Blake, Berliner, and others. Many valuable particulars of the history, experiments with, and practical uses of Reis' telephones are given. The article closes with a series of letters from a number of scientific persons, residing in different parts of the country, in reply to a letter from Prof. Houston, asking them to say whether, in their opinion, Reis was the inventor of a practically operating speaking telephone, and if so, whether or not it worked substantially in the same manner as the Bell telephone. Some twenty responses are given, and the writers, without exception, testify in favor of Reis, and adverse to the pretensions of Bell. Among these witnesses are: Prof. C. A. Young, of Princeton College; Prof. Wm. A. Anthony, of Cornell University; Prof. Francis E. Nipher, of Washington University, St. Louis; Prof. A. E. Dolbear, of Tufts College; Prof. Ogden N. Rood, of Columbia College, New York; Prof. C. F. Brackett, of Princeton; Prof. Charles F. Himes, of Dickinson College, Carlisle, Pa.; Charles M. Cresson, M.D., of Philadelphia; Prof. C. F. Van Dyck, New Brunswick, N. J.; Prof. C. Seiler, Philadelphia; Prof. W. L. Hooper, College Hill, Mass.; Prof. Geo. B. Merriman, Rutgers College, N. J.; Prof. H. C. Buck, Boston, Mass.; Prof. H. S. Carhart, Northwestern University, Evanston, Ill.; Prof. Charles K. Wead, University of Michigan; Prof. H. W. Wiley, Department of Agriculture, Washington; Prof. W. O. Semans, Ohio Wesleyan University, Delaware, O.; Prof. Charles S. Hastings, Yale College, New Haven, Conn.; Prof. John B. De Motte, De Pauw University, Greencastle, Ind.; Prof. Leonard Waldo, Yale College.

If the views of these intelligent examiners are correct, then the original decision of the United States court which awarded to Bell the honor of the discovery of the speaking telephone was an error, and the vast monopoly created under the broad claims of Bell's patent of 1876 is based upon a stupendous fraud.

A suit in the name of the people of the United States is now in progress by the Department of Justice, having for its special object to nullify the patent in case it is proved the claims were unjustly granted. The most strenuous efforts are being made by the supporters of the patent to arrest the progress of this suit; but the general public feeling is greatly in favor of having it pushed forward in the most vigorous manner. If the Bell people, as they claim, are the rightful owners of the exclusive art and apparatus of conveying speech by electricity, their claims will in this manner be settled and confirmed. If, on the other hand, their claims can be clearly proved to be invalid and wrong, then they should be promptly nullified, and the telephone made free to the people.

We publish in another column an interesting reply from the father of Prof. Bell, in answer to the letter we printed a few weeks ago from the distinguished English surgeon, Dr. Tait. The latter stated that Mr. Bell, Sr., and his son were both in Glasgow at the time Reis' telephone was exhibited there, and suggested that Prof. Bell, Jr., might have derived his original telephone knowledge from those exhibitions.

Prof. Bell, Sr., however, explicitly denies that he or his son Alexander ever saw the Reis telephone while in Glasgow, and his statement will be accepted as conclusive.

A recent number of the *Electrical Review*, London, contains a long letter from Prof. Alexander Graham Bell, addressed to Attorney-General Garland, in which he expresses the deepest indignation at the charges of fraud in various forms which he alleges are made against him by the Department of Justice in the docu-

ments pertaining to the suit before mentioned. Prof. Bell says, referring to his 1876 patent: "When I filed my application, I asserted that I was the first inventor of that art. I believed so then; I know so now."

In this letter Prof. Bell also pays his respects to Prof. Elisha Gray, and shows the allegation that he, Bell, derived information from Gray's caveat is without foundation. The men who have been active in fomenting the present suit are also shown up in this letter, and handled without gloves. We must say we sympathize with Prof. Bell, in view of the mass of stuff thrown at him by all the various parties, and all at once, as it were. We regret our space prevents us from publishing his letter in full.

One of the ablest newspaper articles on the telephone controversy is that recently contributed to the *Evening Post* by Mr. Frederic H. Betts, of the New York bar. We subjoin a portion only of his summary of facts:

"The controversy has turned upon the right of Bell to control the whole art of the electric transmission of speech by means of his patent of 1876. As bearing upon this latter proposition, the facts that we have above narrated are important, and they may be summarized as follows:

"1. Reis had described what he called a 'telephone' as early as 1861.

"2. With that instrument he had transmitted not only musical tones, but human speech, to the extent of individual words, at least, though not 'with a distinctness sufficient to every one.' He had also transmitted the inflections of the voice as in interrogation, exclamation, surprise, calling, etc. His instruments were capable, therefore, of reproducing to some extent the quality of sound as well as its pitch.

"3. Bell had never, up to the date of his patent, transmitted a single articulate word, or any 'quality' of sound.

"4. In a statement made by him a few days before his application for the patent of 1876, he had admitted, expressly, that his instrument transmitted 'the varying pitch of the voice' only, but 'not the quality.'

"5. The best that can now be done with the instruments described in the Bell patent is that, under exceptionally favorable circumstances, a few words can be intelligibly transmitted. This may be due in part to the increased cultivation of the ear since the practice of using telephones has been introduced.

"Mr. Watson, Professor Bell's assistant, has testified of experiments made at 40 State Street, in 1879, with reproductions of the original instruments:

"The reason why the results were better, at 40 State Street, is in my opinion due to the fact that we were in a very quiet place, and that we were more practiced in listening for faint sounds than in 1875."

"6. No such instruments as Bell described and illustrated in his patent of 1876 have ever been used for any practical or commercial purpose, without modifications of form and further patented improvement in material.

"It must also be added that Bell was not the first person to use, in a system of telegraphy, the undulatory current of electricity. A system of telegraphy founded upon the use of an undulatory as distinguished from intermittent or pulsatory current is described in the patent of Thomas A. Edison dated August 12, 1873, No. 141,177."

Protection of American Birds.

The annually increasing destruction of American birds for purposes of fashion, and the consequent startling decrease in the numbers of many of the choice varieties, have aroused the American Ornithologists' Union to form a Committee on the Protection of North American Birds. The secretary, Mr. E. P. Bicknell, announces the objects of the committee to be the gathering of all possible information on the subject of the destruction of birds and the steps necessary for their preservation in future; the diffusion of this information among the people in order to create a sentiment in favor of the birds, the formation of bird associations and other protective measures, and in time the framing of a suitable statute, for enactment in the several States and Territories, which shall give the same protection to the smaller birds that the game laws afford the larger.

Most people do object, in an abstract sort of way, to the wholesale slaughter of these pleasing little visitors for either sport or bonnets, and they do deplore the cruelty of nest robbing, but the committee realizes the fact that unless this sympathy takes a more active form, there will shortly be nothing to lament, for the birds will all be gone. Prompted either by their usefulness in checking the increase of insects harmful to vegetation, or simply by their cheery presence, we certainly owe these little songsters a friendly protection. A very pretty little sermon on the preservation of these feathered friends will be found in "The Birds of Killingworth," told by Longfellow in his "Tales of a Wayside Inn." The secretary of the committee invites communications and information from any people interested in its objects. His headquarters are at the Museum of Natural History, Central Park, New York.