monument, during thunder-storms. The apparatus used consists of a large insulated collector, a modified Mascart electrometer, and Mascart insulators and the necessary adjuncts. As the thunder-clouds approach, the electrometer-needle becomes very active, and, after considerable oscillation, begins to move steadily in one direction (generally negative), until a deflection indicating, for example, a potential of three thousand volts, is reached, when, simultaneous with a flash of lightning, occurs a quick drop to zero, to begin again slowly to increase, and then more rapidly, until the next flash of lightning. So perfect is this correspondence, that the lightning can be timed as accurately from the indications of the electrometer as by direct vision. If at this time a finger be held out towards the collector, sparks are given, with the accompanying crackling and hissing, and the tingling sensation in the finger. In such a case, the observer is simply grounding the insulated charged collector. The greatest sparking distance, in our experience thus far, as determined by direct measurement, was a little under four millimetres. I have never found any difference (as one of your correspondents intimates) in the sparking distance, depending on the finger. The potential of the air, however, as shown by the electrometer readings, is constantly fluctuating, often very rapidly, and at certain times the potential of the air is zero. Of course, a finger presented at such a time, fails to draw a spark.

To imitate more closely the conditions of the mountain-side, the previous arrangement was reversed, and the observer insulated by standing on a Navajo blanket folded several times. This is but poor insulation, though it answered the purpose. Standing close to the open window of the monument, the results were as anticipated. My hair stood on end, and, on presenting a knuckle to the iron framework, a spark passed. I should remark that these effects were only experienced during a thunder-storm. I tried the experiment at other times, without success.

There are two further points of interest to which attention is called. Professor LeConte has instanced (*Science*, ix. No. 205) the case of the survey party on one of the San Juan mountains, where "a sudden cessation of the distressing electrical effects was experienced whenever there occurred a flash of lightning." This is confirmed by what precedes; and our electrometer readings make it certain that every lightning-flash relieves the electrical tension, and gives us also the means of estimating the electromotive force producing the disruptive discharge, and the electric strength of the air, under natural conditions. The second point of interest is the effect of electrification upon the water-particles present. Lord Rayleigh has shown how the character and direction of a fine stream of water may be altered by electrical influences; for example, a stick of sealing-wax, when rubbed, distorting a fine jet of water. Effects of the same character I noticed in the jet of water issuing from the nozzle of the collector. When the collector was 'grounded,' the stream would preserve a certain even, rounded character, breaking into drops some four inches away from the place of issue. Removing the ground connection, the stream would twist and split into sprays with the increasing electrification. Simultaneous with a flash of lightning, this distortion ceased, and for the moment the stream resumed its first character, only to be again distorted, and repeat the same operation with the next lightning-flash.

Alexander McAdie.

Cambridge, May 25.

Railway jubilee, Paris, 1887.

I am requested by the executive committee in Paris to ask the favor of appealing through your columns for the loan of any objects, books, medals, drawings, etc., relating to the history of railways, and means of transportation generally, both ancient and modern, in this country.

I am directed, also, to say that all expenses of forwarding and returning the same to the lenders, packing and unpacking, will be defrayed by the executive, that each object will be insured for the value the lender may put upon it, and that special attendants will be told off for their safe custody.

All communications on the subject may be addressed to M. G. Senechal, 8 Faubourg Montmartre, Paris, or to Mr. George L. Fowler, M.E. (of New York City), commissioner in charge for the United States, Palais de l'Exposition, Bois de Vincennes, Paris, France. By addressing communications direct to Paris, much valuable time will be saved.

John W. Weston.

Chicago, Ill., May 23.

The maxillo-palatines of Tachycineta.

With respect to what your correspondent says in regard to a drawing of mine, I can only say that the skull of T. thalassina from which it was made is a perfect one, and my copy correct in all particulars. This is more than I can say for the reproduction of it (*Science*, No. 223, fig. 1); but however this may be, it at least affords me now the opportunity to yield gracefully to my critic, for I am free to confess that the maxillo-palatines of that skull are 'imperfect' and 'broken off' — on paper — by Mr. F. A. Lucas; as any one may see who cares to compare my drawing in the Proceedings of the Zoölogical society of London (Dec. 1, 1885, p. 899, fig. *F*) with his copy of it in *Science*, to which I refer above.

R. W. Shufeldt.

Fort Wingate, N.Mex., May 20.

No parietal foramen in Tritylodon.

Dr. George Baur of the Peabody museum, New Haven, has been recently studying the fossil vertebrates in the British museum of natural history. At my request he has kindly made a careful study of the skull of Tritylodon, and finds that Professor Owen's observation of a foramen between the parietal bones is incorrect. He writes (London, May 8), "Ich habe Tritylodon hier genau untersucht, ein Parietal-Foramen existirt *nicht;* es ist wenigstens keine Spur desselben nachweisbar." This contradicts, without question, the suggestion I made in a recent number of *Science*, upon the strength of Professor Owen's observation, that there was probably a pineal eye of considerable size in Tritylodon. I hasten to make the correction, before the suggestion goes any further. Although it has proved incorrect, I think any one who will examine Professor Owen's figure and description of the Tritylodon skull (*Quart. journ. geol. soc.*, 1884) will admit that there was sufficient ground for this conjecture.

Henry F. Osborn.

Princeton, N.J., May 26.