believe that there is no physical cause in action by which the subject has an inkling of the drawings he is to make, or an indication whether he is going right or wrong. This incredulous tendency will be greatly strengthened if the assistance of spiritualistic performers is called in. S. Newcomb.

RADIANT MATTER IN AN EDISON LAMP.

In the Edison exhibit at the Electrical exhibition was shown a phenomenon that deserves careful investigation at the hands of physicists. Midway between the two wires which carry the current to the carbon filament of an ordinary incandescent lamp, a third wire is inserted, which terminates in a thin strip of platinum extending up midway between the branches of the loop with its faces turned towards them, and ending about half an inch below the crown of the loop. When the lamp was in action at its ordinary state of incandescence, if a circuit was closed through a galvanometer between the insulated terminal of the platinum strip and either terminal of the carbon filament, it showed a current flowing across the vacuum of the lamp, between the platinum and the carbon, in opposite directions, according to which pole of the carbon was connected, but much stronger — forty times stronger — when the platinum was connected to the positive pole of the incandescent carbon; this through a galvanometer of about twenty ohms resistance. Moreover, this current was increased when the current through the lamp was increased, so as to heat it much beyond its normal temperature.

After the lamp has been in use for some time, the stronger, positive-platinum, current becomes weaker, and finally changes direction. By letting the lamp rest, the experiment may be repeated. The same currents were obtained *through the glass* when either terminal of the carbon was joined to a small piece of platinum stuck anywhere on the *outside* of the lamp; the same effects were also obtained when the bulb was drawn out into a long tube and the connection made at its end, and when this tube was packed in ice to cool it down; but when the tube was bent round into a loop, no current was obtained, probably from the cutting-off of rectilinear radiation from the carbon.

It would seem as if here were a field for extending Crookes's experiments on radiation.

H. M. Paul.

THE AMERICAN ORNITHOLOGISTS' UNION.

The second congress of the American ornithologists' union was held in the American museum of natural history in New York, Sept. 30 and two following days. Dr. Philip Lutley Sclater, Mr. Howard Saunders, and the Rev. E. P. Knubley, of the British ornithologists' union, were present, and took part in the proceedings. A large number of new members were elected.

The report of the committee on the revision of the nomenclature and classification of North-American birds was presented by Dr. Elliott Coues. The work of the committee had been divided; Messrs. Ridgway, Brewster, and Henshaw being charged with determining the status of species and sub-species, while Mr. Allen and Dr. Coues were to formulate the canons of nomenclature and classification. Dr. Coues read at length the report of this last sub-committee, the reading occupying about an hour and a half, after which Mr. Ridgway presented the report of the other sub-committee, which emphatically and unanimously indorsed the employment of trinomials for the designation of sub-species.

The report of the committee on bird-migration was presented by Dr. C. Hart Merriam. This committee had been very industrious, and had been greatly helped by the public press; so that, by the distribution of nearly six thousand circulars, the committee finally secured nearly seven hundred observers, in addition to the keepers of lights. The observers are distributed as follows: Mississippi valley district (Prof. W. W. Cooke, superintendent), 170; New-England district (John H. Sage, superintendent), 142; Atlantic district (Dr. A. K. Fisher, superintendent), 121; Middle-eastern district (Dr. J. M. Wheaton, superintendent), 90; Quebec and the maritime provinces (Montague Chamberlain, superintendent), 56; district of Ontario (Thomas McIlwraith, superintendent), 38; Pacific district (L. Belding, superintendent), 30; Rocky Mountain district (Dr. Edgar A. Mearns, superintendent), 14; Manitoba (Prof. W. W. Cooke, superintendent), 10; British Columbia (John Fannin, superintendent), 5; North-west territories (Ernest E. T. Seton, superintendent), 5; Newfoundland (James P. Howley, superintendent), returns not yet received. Migration-stations now exist in every state and territory in the union, excepting Delaware and Nevada.

The committee was fortunate in obtaining the co-operation of the Department of marine and fisheries of Canada, and of the Lighthouse board of the United States. By this means it secured the free distribution of upwards of twelve hundred sets of schedules and circulars to the keepers of lighthouses, light-ships, and beacons, in the United States and British North America.

The returns thus far received from observers were exceedingly voluminous and of great value; they were so extensive, indeed, that it was utterly impossible for the committee to elaborate them without considerable pecuniary aid.