

plough has wearing guards of hardened steel wherever it can touch the edge of the conduit slot; and the shoes are made of soft metal, which takes up all the wear and prevents any injury to the conductors. Two ploughs are used on each car for the sake of absolute reliability.

For suburban lines, or for small cities where the traffic does not justify the employment of the more expensive conduit system, the company furnishes its elevated conductor system. The elevated conductors can be either bracketed off from poles, or hung from wires crossing the street at any desired height above the roadway. Electrical connection between the motor on the car and the elevated conductors is maintained by means of a trolley or contact-brush and a flexible conductor.

The motor and mechanism of a car operate noiselessly, and are entirely concealed from view beneath the bottom of the car. Cars may be stopped as quickly as desired, may reverse at will, and, if derailed, can propel themselves back on the track.

The motor is controlled from either end of the car; and the driver may proceed at any speed, from a slow creep to that of twenty miles an hour.

SCIENTIFIC NEWS IN WASHINGTON.

The Archæology of the District of Columbia. — Our Future Empire. — Science and Psychos.

The Archæology of the District of Columbia.

THE Anthropological Society of Washington consists of four sections, each in charge of a vice-president, but none thus far definitely organized: viz., Section A, somatology; Section B, sociology; Section C, philology, physiology, and psychology; Section D, technology. It has of late become apparent to members interested in archæology (which is included in the last section) that this subject has received inadequate attention during the past year or two, and especially that too little attention has been given to the archæology of the District of Columbia and contiguous territory. In order to strengthen this branch of anthropology, and at the same time to stimulate local investigators, a temporary organization of Section D has been effected. At a meeting of the members of the society interested in local work, called by the vice-president of the section, Dr. O. T. Mason, last week, it was decided to combine efforts and results, with the immediate object of elucidating the history of the aboriginal inhabitants of the Potomac River as recorded in relics and early writings, and with the ultimate object of preparing and publishing a monograph on the antiquities of the District of Columbia. A committee was appointed to prepare *résumés* of existing knowledge on various phases of the subject for presentation at one of the meetings of the society in April next. This committee, which has power to add to its numbers, is as follows: geology in its relations to early man, W. J. McGee of the United States Geological Survey; paleolithic man and his remains, Thomas Wilson, curator of antiquities of the Smithsonian Institution; relics of the later aborigines, S. V. Proudfit of the Interior Department; prehistoric settlements and workshops, Dr. Elmer R. Reynolds of the Pension Office; aboriginal tribes recorded by early explorers, James Mooney of the Bureau of Ethnology.

Our Future Empire.

The event of the sixteenth regular meeting of the National Geographic Society on the 11th inst. was the presentation of an elaborate paper on "The Great Plains of Canada," by Mr. C. A. Kenaston. During several seasons of constant exploration, undertaken with the object of ascertaining the agricultural, pastoral, and other capabilities of the country, Mr. Kenaston became thoroughly acquainted with the vast expanse of plain country stretching from Hudson Bay to the foot-hills of the Rockies, and from the international boundary to the Arctic Circle. The entire tract is one uninterrupted, monotonous, grassy plain, sloping gently to the eastward and northward, diversified only by shallow lakes and broad water-ways in the east, and by shallow but steep-sided cañons of the rivers beginning in the mountains in its central and western portions. The general hydrography, the more detailed topographic features, the flora, the fauna, and the *voyageurs* of the Hudson Bay Company, — the link connecting the aborigines with the white in-

vaders who now possess the land, — were all described at length; and it was pointed out that this region, long the home of the buffalo, the wolf, the badger, and uncounted myriads of wild fowl, is the American wheat-field of the future. In the south-eastern portion of the tract the soil is a dark prairie loam, like that of Minnesota and Iowa; west and north-west of it lie millions of acres of "gumbo" soil, refractory under the first efforts of the agriculturist, but made fruitful by two or three seasons of tillage; while the soil of the northern plains is a fertile yellow loam or boulder drift; and over twenty millions of acres the conditions of soil and climate are alike so favorable to wheat-growing, that only peopling by farmers and the opening of transportation routes are needed to make any part of it successfully rival the famous wheat-fields of Minnesota and Dakota. Already the tract is intersected by the Canadian Pacific and many other railways, the navigable rivers are being supplied with steam-craft, and the lands along railways and waterways are generally sectionized and open to occupation; and the present prospects are that this northern expansion of the Great Plains of America will be overrun by settlement nearly as rapidly as was the part drained by the Mississippi and its tributaries.

Science and Psychos.

On Friday evening last, some thirty or forty scientific men assembled at the residence of Mr. W. A. Croffut, to "assist" at some experiments in hypnotism by that gentleman. Among those present were Professor N. S. Shaler, G. K. Gilbert, Dr. T. N. Gills, A. H. Thompson, W. C. Winrock, Col. Garrick Mallery, Gen. Adam Badeau, Major Powell, and Mr. F. M. Thorn, chief of the Coast Survey, besides several members of Congress. While one of the hypnotized sensitives was personating an aged colored preacher, he was violently seized by Major Powell, denounced as an impostor, and thrust out of the room. He seemed unconscious of the strange interruption, and the stream of his exhortation flowed on unbroken to the end, until Mr. Croffut appeared and recalled him from the trance. Major Powell then made some remarks on hypnotism and the relation of its hallucinations to other states, especially to mental abstraction and heterophemy, and the desirableness of subjecting its phenomena to scientific conditions and observation.

CENSUS OF THE DEFECTIVE CLASSES.

At the suggestion of Senator Eugene Hale, chairman of the census committee of the United States Senate, Professor A. Graham Bell addressed a letter to the committee, in which he refers to some of the results of the census of 1880, especially with reference to the relative increase of the deaf, the blind, the idiotic, and the insane within recent years, as compared with the population in the United States, and to deafness as caused by the marriage of the deaf with the deaf, and makes some suggestions as to the taking of the next census. As this communication is of considerable importance at the present time, when preparations are being made for the next census, we reproduce it here *in extenso*.

According to the census returns, the defective classes have increased 400 per cent in thirty years, while the general population of the country has simply doubled. The following table shows the relative figures at each census since 1850:—

Years.	Total Population of the United States.	Total Blind Population.	Total Deaf-and-Dumb Population.	Total Idiotic Population.	Total Insane Population.
1850.....	23,191,876	9,794	9,803	15,787	15,610
1860.....	31,443,321	12,658	12,821	18,930	24,042
1870.....	38,558,371	20,320	16,205	24,527	37,432
1880.....	50,155,783	48,928	33,878	76,895	91,997

I have examined with care the statistics of the Tenth Census relating to the deaf-and-dumb, and find internal evidence to show that in their case there has been a real increase greater than the increase of the general population, and not simply an apparent