

THE WOODS ELECTRIC VEHICLES.

Among the exhibits at the automobile show are some interesting vehicles shown by the Woods Motor Vehicle Company, of Chicago and New York. This company has recently put upon the market a number of entirely new designs, and we illustrate two of them. The motor vehicle proposition is one which, in its broadest sense, involves in addition to public transportation the equipment and maintenance of hundreds of thousands of gentlemen's private stables with fine carriages in all variety of styles rather than the creation of a machine which will transport a man from town to town, or on long country tours, and this company has aimed to supply the wants of the former class. Electrical propulsion being clean and almost noiseless recommends itself specially for private conveyances. The carriages we show are an open electric landau and a country club wagon, both of which are useful and handsome vehicles. For many practical reasons the company has entirely abandoned the use of wire wheels, pneumatic tires and tubular construction, and are now confining themselves strictly to such carriage design and construction as is well known in the art, which makes them susceptible of repairs, so far as the carriage part is concerned, by any carriage manufacturer in the country, and the electrical parts have been so standardized and simplified that any electrician employed by an electric light company or plant in any city can successfully make any inspection and repairs that may be necessary from time to time, in all of which their object has been to provide resources independent of factory, by which the purchaser can give his vehicle proper care and attention in his own city or town. The moving parts are provided with ball bearings interchangeable in their details, and the entire construction of the vehicle is one in which efficiency and durability are alone considered. There are three or four speeds controlled by the same lever that applies the brake, so that only two points of attention are necessary for the entire management of the vehicle. They run backward or forward, and the removal of key from the reversing switch locks the vehicles when not in use. Their running capacity is 50 to 75 miles per day, subject to recharging facilities or duplication of the batteries.

The Selenides of Nickel.

M. Fonze-Diacon, who has lately made a number of interesting researches, has succeeded in forming a series of new compounds, namely, the selenides of nickel. The experimenter describes his method in a paper recently presented to the Académie des Sciences. The only previous work in this direction is that of Little, who found that the vapor of selenium reacts, at a red heat, upon powdered nickel, giving a crystalline mass appearing to consist of crystals of the cubic system. The series of selenium compounds prepared by M. Fonze-Diacon is quite extensive, and is analogous to the corresponding sulphides; among others he has obtained the protoselenide of nickel in well marked cubical crystals. It is prepared by bringing the selenium vapor, very diluted in a current of nitrogen, upon plates of nickel brought to a red heat. The plates are seen to become covered with crystals having the appearance of moss or of long prisms. If the selenium vapor brought by the nitrogen arrives in greater proportion, the nickel plates become covered with crystals which are much more distinct, resulting from the fusion of the first crystals formed. If the operation is stopped at this moment, to avoid the complete fusion of the crystalline layer, this is seen to be formed mainly of double tetrahedrons, right and left combined. The crystals are very distinct, having a gray color with bluish reflections and corresponding to the formula, Ni_2Se . The protoselenide of nickel thus appears to belong to the cubic system.

To obtain the sesquiselenide, the anhydrous chloride of nickel is heated to redness in a current of hydrogen selenide; it gives rise to products corresponding, according to circumstances, to Ni_2Se_3 or Ni_3Se_4 . A gray crystalline product was especially obtained, which

presented forms derived from the cubic system, whose formula approaches Ni_2Se_3 , but is not quite free from a product less rich in selenium. The biselenide of nickel, corresponding to the formula $NiSe_2$, is obtained by the reaction of hydrogen selenide upon anhydrous chloride of nickel, heated to a temperature of about $300^\circ C$. It has the appearance of a friable mass of a dull grayish black. The same result is obtained by using nickel oxide. The preceding compounds, heated to whiteness in a current of hydrogen, lose selenium by degrees, and there results a melted mass of a yellow bronze color with a metallic fracture. This product, powdered and submitted again at a high temperature to the action of hydrogen during six or eight hours, is transformed into a sub-selenide of nickel, Ni_2Se , having the appearance of melted masses of a golden yellow. The oxyselenide of nickel has also been obtained. The experimenter wished to form the sub-selenide, analogous to the sub-sulphide which has



COUNTRY CLUB WAGON.



ELECTRIC LANDAU OPEN.

been prepared by Arfoedson by reducing the sulphate in a current of hydrogen. The seleniate of nickel previously dried was accordingly heated in a current of dry hydrogen; in the beginning water vapor is formed with sublimation of selenious anhydride, as the temperature rises, the hydrogen reacts upon the salt with incandescence. The operation is then stopped, and a dark green powder is found, which dissolves partly in dilute hydrochloric acid without disengagement of gas, and entirely in the concentrated acid, giving off hydrogen selenide. This body proves to be an oxyselenide of nickel, or rather a mixture of oxide and selenide of nickel, whose proportions vary according to the rapidity with which the reducing temperature has been obtained. The properties of the selenides of nickel have been studied by the experimenter. Hydrochloric acid, even concentrated, attacks them but slightly; in the gaseous form it transforms them at a high temperature to nickel chloride. Nitric acid oxidizes them and forms selenites; chlorine displaces the selenium at a moderately high temperature. When

heated in a current of oxygen, they give the green nickel oxide and selenious anhydride.

The Ruins of Eridu, 2400 B. C.

About the mound is a wall some 20 feet in height, pierced by three openings, the remains of the gateways, says Biblia. Nearly the entire inclosure is filled with a brick platform, equal in height with the surrounding wall. The southern part of the mound contains a few imposing ruins, but on the northern edge stands the temple, a pyramidal-shaped building, reaching 70 feet above the platform. Two of its stories are still to be seen. A peculiar feature of the temple is a marble stairway 15 feet broad and 70 feet in length, leading up to the exterior. The polished marble slabs which served as steps are still scattered among the ruins, attesting to the extreme richness of the building, and along the two edges of the stairway are balustrades; at the foot of the stairway the bases of two large pillars remain, the object of which is uncertain. The peculiar shape of the bricks, plain cones, cylinders, innumerable fragments of pottery, pure gold-leaf, and stone implements abounding in great profusion, are the distinguishing features of this ruin. Unlike most other Babylonian temples, that at Eridu was built partly of stone, for the architects here had access to the neighboring sandstone ridges, and the plain to the south abounds in great boulders of black granite. The statement frequently made that the huge stones from which the Telloh statues were hewn were quarried at Sinai must now be modified, for the quarries about Eridu supplied the material. Mr. Taylor, speaking of the mound, says that as one approaches it he will see "blocks and pieces of marble, rough and polished, of different colors of the most beautiful hues; fragments of bowls, vases and coffins, in crystal, marble, and alabaster; gilt-headed nails, curious bricks, and tiles of original shape and composition, and lastly, and the most curious and interesting, the clay hatchets and hammers, the flint knives and styles, stone and clay nails, and a hundred other objects so palpably denoting a remote period and one of the earliest stages of civilization." One may imagine the desire which the excavator has to reveal the treasures buried in this ruin.

Another Railway in China.

The Russian government in China is contemplating the construction of another railway in China. The course of the new line, as at present projected, will run from Samarkand to Hankow, via Chodschend, Margitan, and through one of the Pamirs. Should this route be ultimately followed, it will involve the boring of a tunnel through the Koshgor Mountains. Koshgor is the center of the transit trade between Russian Central Asia and East Turkestan, and the new overland route will either run to Chatan, thence to Tschortschen, and Tschorjolyk at the Lobnor Lake, or it will traverse the Tarim Valley. From the Lobnor Lake the line will stretch through one of the passes in the Altyn Mountains to the Tsoidam Plateau, thence along the Semenow Mountains through the Hoango Valley, to Lau-tschow. This town is the capital of the province of Kamsu, which possesses a population of 11,000,000 persons, so that the railroad will serve a very thickly populated country. After leaving Lau-tschow the railway will extend to the province of Shensi and thence through the Hankiang River valley to Hankow. The railway, if constructed on these projections, will prove of immense service to Russia, since it will enable the products of Russian Central Asia to be carried and marketed at the great center of Chinese trade. Then again Hankow is in steamer connection with the rich province of Szechuan, which boasts a population of 46,000,000.

The American Bridge Company has secured a contract from the North German Lloyd Steamship Company for the erection of a foundry building and a blacksmith shop at Bremen. The contract calls for 800 tons of structural steel and was secured in competition with German concerns.