

entire area of the swamp, which is estimated at between 800 and 1,000 square miles. The principal trees are those which are tolerant of water about their roots. These are the bald cypress, juniper and black gum. There are also canes and mosses in great variety.

The reputation of Dismal Swamp is that of a gloomy and impenetrable region, filled with fever and malaria, and infested with snakes and noxious animals.

John Boyle O'Reilly, who spent some time in exploring the swamp, says: "The Dismal Swamp is an agony of perverted nature. It is Andromeda, not waiting for the monster, but already in its grasp, broken and silent under the intolerable embrace."

The lake was discovered in 1775, by a Scotchman named Drummond, and after the Revolution, George Washington purchased the swamp and organized the Dismal Swamp Company, which still exists. It was Washington's idea to reclaim the swamp, and for this reason he cut the canal described herein.

There are a large number of species of animal life in the swamp, bears being abundant. Deer are now rare, but are still occasionally shot, and wild horned cattle are found within the limits of the swamp. These cattle feed upon the tenderer shoots of the canes, and dwell in considerable herds. Bird life is abundant, and the number of serpents is extraordinary at certain seasons of the year. Various ditches have been dug for draining the canal, and at present access is obtained to Lake Drummond by Jericho Ditch, 12 miles long, 15 feet wide and 3 feet deep. The first section of the swamp is comparatively open, having been burnt off. Gradually the cane brake becomes thicker and the reedy growth resembles bamboo or papyrus, the banks of the ditch are for the most part very marshy; the growth of young canes, holly and mistletoe is notable. The water is of a deep sherry color, and, strange to say, it is said to be healthy to drink, probably owing to the infusion of juniper. The "Black Gum Swamp," two miles from Lake Drummond, is most impressive, the trees being tall and set close together.

#### Paris Exposition Notes.

Those who are familiar with Exposition work state that the Paris Exposition will not be in full working order until June 15, although it will probably be sufficiently advanced one month from the opening, namely, May 14, to satisfy visitors.

Arrangements, for admission to the Paris Exposition have now been made. Tickets will cost one franc each, and may be purchased in many places all over Paris. Between the hours of eight and ten in the morning two tickets will be required for admission, and from ten to six one ticket only will be required, but after six o'clock two tickets must be presented. When there are spectacles or exceptional attractions three to five tickets will be required.

The American Section will, so far as possible, be closed on Sunday. Considerable effort was required to obtain this concession. A by-law compels the opening of all the exhibits on the seven days of the week, and even gives the French authorities power to remove the coverings over the exhibits. The same rule applies to machinery. The Director-General of the Exposition has, however, given special permission to close the American Pavilion on Sunday.

There is an evidence of a great advance in prices during the Exposition, both in hotels and pensions. First-class accommodations within a reasonable distance from the Exposition are going to be very expensive. An ordinary boarding house which usually charges seven francs a day has now made arrangements to charge thirty francs. Those who are to spend some weeks at the Exposition will do much better by living a short distance outside of Paris. The railroad communications are excellent and trains will be run directly to the entrances. In fact, it is a question if it will not be more comfortable to live in this way than to use the crowded means of communication in the city proper. The scarcity of cabs and carriages will be very great and the omnibus and tramways are allowed to carry only a certain designated number of passengers.

The regulations under which photographers may pursue their pastime within the precincts of the Exposition have, at last, been formulated. The use of hand cameras will be permitted at all times, free of charge or restriction, but the use of apparatus standing on a tripod will be allowed only up to one o'clock. In addition, photographers of this class must obtain written permission from the Commissioner General and pay the tax, which has been fixed at five francs for one day or two hundred for the period of the Exposition. No exhibit may be photographed without the written authorization of the exhibitor and the interested persons must also obtain from the foreign Commissioner-General or Concessionaries, authorization to reproduce their palaces or pavilions. They assume all responsibility for reproductions they may make and guarantee the Administrator of the Exhibition against all claims. These rules are certainly wise and liberal and are in a marked distinction to the unfortunate conditions of affairs at our own Exhibition in 1893.

#### Solidification of Hydrogen Gas.

A year ago Prof. Dewar liquefied hydrogen; he has now gone a step further and produced hydrogen as a solid. In an interesting series of experiments made before an audience at the Royal Institution on April 6, he showed how the gas could be solidified. He surrounded the tube containing it with liquid air to prevent the increase of heat and then applying a powerful air pump to the liquid hydrogen he transformed it into a white opaque solid. The New York Sun, which cabled over an account of the experiments, says that in discussing the question of the utility of solid hydrogen in scientific research, Prof. Dewar said that the mere fact that its transformation from gas is interesting because it is the elementary body of the lowest atomic weight. One of its uses was in the solidification of oxygen, and it could also be used in the separation of mixed gases.

#### THE NEW ASSISTANT COMMISSIONER OF PATENTS.

As we announced two weeks ago, Walter H. Chamberlin, Esq., of Chicago, was nominated as Assistant Commissioner of Patents to succeed Arthur W. Greeley, Esq., who resigned. There were many aspirants for the position, but the matter of a successor to Mr. Greeley was left to Commissioner Duell, the President considering that in view of the intimate relationship between the offices the head should be consulted. Mr. Chamberlin was well known to Commissioner Duell, and he was satisfied of the latter's fitness for the position.

The new Assistant Commissioner was born February 9, 1866, at Detroit, Mich. He selected law as a profession and was taken into the office of the late Wells W. Leggett, a son of the former Commissioner of Patents, and a recognized attorney in the patent world. After graduating from the law course he was admitted to the



ASSISTANT COMMISSIONER OF PATENTS  
WALTER H. CHAMBERLIN.

bar in Chicago in 1890 and at once began the practice of his profession. He continued in practice up to the present time, making patent law a specialty. He was endorsed for the position which he now holds by the leading patent lawyers of Chicago and elsewhere. Mr. Chamberlin favored the appointment of Mr. Duell as Commissioner of Patents in 1897, and both he and the Commissioner have been warm friends for some years, and the Commissioner considers that his new assistant will be very helpful to him for carrying out the policy which he had adopted. Mr. Chamberlin has already entered upon his new duties. We wish him every success in his new office.

#### Remarkable Metallurgical Experiments.

Some interesting experiments were carried on in the laboratory of Mr. T. A. Edison, at Orange, N. J., on April 7, by the agent of a German chemical concern who exhibited a new process of attaining great heat in an almost incredibly short time by the combustion of a secret chemical compound used in connection with powdered aluminium. A cupful of the chemical was placed in a crucible, a small amount of powdered aluminium was added, and then a wrench about half an inch thick and six inches long, was placed in the crucible. A match was touched to the compound and violent combustion took place. It is estimated that the temperature was not far from 3000° C. At first sight these statements seemed almost impossible, but Mr. Edison writes us, "The process works well."

#### The Rotation of Venus.

A telegram has been received at the Harvard College Observatory from Prof. Kreutz, at Kiel, stating that he has information from Prof. Backlund, Director of the Observatory at Pulkowa, Russia, that, from an examination of spectrograms, Belopolsky has found the time of rotation of Venus to be short.

#### Automobile News.

Steam omnibuses are used to a considerable extent in Algeria.

The Acting Secretary of the Treasury has ruled that an automobile is not free of duty as a personal effect, but is free of duty as a household effect if used abroad by the owner one year or more.

An interesting use of the motor carriage is in delivering newspapers in long, straggling country districts, where it has proved invaluable. Two of the London journals have tried the plan with great success.

Horseless carriages proved very successful in Boston, during the heavy snows of last winter, the only difficulty was after the snow began to melt, the drifts near the curb making it troublesome getting near to and away from the sidewalks.

The Automobile Club of America has issued a pamphlet of fifty-six pages in the interest of good road agitation. It contains a list of officers of the club and the various addresses delivered before that body. The pamphlet is almost entirely devoted to the improvement of the highways of the State of New York.

The Paris Exposition authorities have appropriated 100,000 francs toward the expense of the automobile section. This will be some 30,000 francs short of the estimated deficit. The Automobile Club of France has agreed to carry out the programme practically in its original form.

The principal factor of agitation in Tokio at present is street railways; applications have been sent in for permission to put down about 200 miles in all in the city. The system proposed is electrical. Whether the scheme will get beyond the regions of talk or not in the very near future is more than one can say. The proposed cost of installation is 15,000,000 yen. The French have shown a good deal of enterprise in trying to introduce French-made vehicles in Japan. About a year ago a Frenchman brought a motor street carriage to Tokio; after showing it off in the streets of the city for about a month or so, and finding no purchaser, he suddenly packed it up and took it back to France. This gentleman is now in Tokio again with a "Serpellet" street railway car, and has shown what can be done with it. The local papers speak well of the machine, but I expect nothing but electricity will find favor with the city authorities.

The new automobile service in the Soudan, between Kayes and Bamako, on the Niger, has been recently inaugurated, and a communication from Kayes, dated the third of February, states that Governor Chaudié had just returned from a voyage in which he had laid out certain new territory, and in the course of which he inaugurated the new automobile system for the transportation of passengers and merchandise between these two points. The governor and party left from Bamako on the 22d of January and arrived in two days at Kiti, making about 90 kilometers per day on a six hours' run. From this point he passed to Toukouto, and finally arrived at Kayes on the 27th of January, the whole trip taking thus about five days. Upon his arrival the governor expressed himself as greatly pleased with the rapidity and facility of the new system, and recalls the fact that on a former trip to the Niger it required fifteen days to cover the same route. By this system the Senegal is brought into connection with the Niger, the district passed through being one which had not been reached heretofore by water or by railroad, on account of the rapids of the Senegal and the mountainous mass called Fouta-Djalon, which separates the Senegal from the Niger. The automobiles for this system were constructed by a Paris firm, and were installed under the direction of M. Felix Dubois.

#### The Current Supplement.

The current SUPPLEMENT, No. 1268, is opened by an article on the Pan-American Exposition, accompanied by engravings of a number of views in the grounds and also of the buildings. "Power Consumption and Comparative Costs of the Automobile Delivery Wagons," is by Prof. George F. Sever. "Educational Values," is by Prof. W. Le Conte Stevens. "One Hundred Years of Achievement of American Glass Manufacture," is by C. A. Tatum. "The Neolithic Epoch in Ancient Egypt," is an interesting and fully illustrated article. "Earthquake-Sounds," is by Charles Davison.

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