the exception, not the rule; and, as before stated, the first in point of time, the primary and most potent energy responsible for the wonderful destruction of buildings in this district, would seem to have been exerted from within outward.

Several newspaper writers have claimed that the twisted trunks of trees in Lafayette Park prove the storm to have been an ordinary cyclone. That there were powerful whirlwinds formed and great numbers of them there is no doubt, but no one who has seen the path of a twister through a forest will liken it to the chaotic condition of the park trees. The axis of a cyclone leaves a narrow and clearly defined trail, which is entirely wanting as regards this storm.

Is it not possible that the atmospheric pressure over an area about a half a mile in circumference and rapidly moving eastward was reduced so largely and so suddenly as to account for it. A reduction of one and a half pounds of atmospheric pressure out of the fifteen pounds to the square inch, if effected instantly, would afford a bursting pressure of two hundred and sixteen pounds to the square foot of internal surface of a roof or wall, provided the inclosed air could not escape. Barometers have recorded such changes in the immediate vicinity of great storms within a very short space of time. May the change not have been almost instantaneous in this case?

The superintendent of the gas works, located on Gratiot Street in the path of the vacuum, when asked to describe what he saw, said that he first noticed the great circular tank "jump up a little way, then bob up and down a little," then the wind struck it, tore apart the great iron girders forming the crown which held together the great boiler iron posts surrounding the tank. These posts fell outward and lay surrounding the tank much like the spokes radiating from the hub of a wheel. As a gas tank is an inverted cup partially filled with gas and floating rim down in a huge cistern of water, it of course rises and falls with changes of atmospheric pressure, like the mercury in a barometer. That the superintendent saw it "bob up" suddenly I can account for in no other way than that the atmosphere was greatly and suddenly rarefied, and had the lower edges of the tank been fastened down, instead of being free to instantly rise through the water, the tank would have burst, just as many strong buildings did.

It would be interesting to note the condition of a self-registering barometer in this vacuum area—if such area there really was—but I have been able to find none. The local office of the weather bureau is a mile to the north. The destruction wrought in what has been termed the vacuum territory can be accounted for upon the theory that atmospheric pressure was here suddenly and violently reduced. The natural laws of pneumatics explain the details. But how could such a large partial void be created? Was there a huge whirlwind at work in the upper strata of the atmosphere which did not, as in the case of previous cyclones, extend downward to the earth? Or are we to look for its cause in the unprecedented splitting asunder and subsequent reuniting of a hurricane?

The path of the storm was widest at the place where the apparent results of a vacuum are noticeable. East of these the path narrows and the direct force of the wind in the direction of the storm's movement was vastly intensified, appearing to have reached its greatest fury about the time it struck East St. Louis. On the east approach of the Eads bridge a pine board was driven through a three-eighths inch iron plate and left sticking there, while equally incredible evidences of the terrific force of the wind in this locality are to be seen on every hand,

If this storm is without precedent let us hope it may remain without parallel. The possibilities for destruction of whole cities by sudden decrease of atmospheric pressure are too appalling to contemplate.

A FLORIDA TREE PALM.

The Oreodoxa regia, or royal palm, is common in Cuba and extends into southern Florida. Our illustration, for which we are indebted to Garden and Forest, represents a young tree of this species near the shores of Bay Biscayne, from a photograph of Mr. James M. Codman, of Brookline, Mass. These trees, according to Prof. Sargent, are often one hundred feet high, with a trunk largest near the middle, but otherwise generally resembling the palms of our southeastern States, and being equally graceful and beautiful. The tree is said to be "the most beautiful of the palms of the United States." It is of an exclusively tropical species, its growth being confined to the shores and keys of the extreme southern part of Florida.

THE ROYAL PALM (OREODOXA REGIA) OF CUBA AND SOUTHERN FLORIDA.

The Oreodoxa, according to Prof. Sargent, is an American genus of about four species. Three are lofty trees, the loftiest, perhaps, of all the American palms, and true princes of the vegetable kingdom, while the fourth is a humble inhabitant of the high slopes of the Andes of Ecuador, only remarkable as one of the most alpine of all palms. The largest species, Oreodoxa oleracea, the cabbage palm of the Antilles, sends up a slender trunk nearly two hundred feet in height, surmounted by a long, green, polished cylinder of petiole sheaths and a crown of long, arching, graceful, pinnate leaves frequently twenty feet long and six feet wide. Its tall, pale stem and beautiful head make this palm a favorite in gardens, and it is planted in all tropical countries and often in long and stately avenues, as in the Botanic Garden of Rio de Janeiro, which owes its fame to its palm avenue. Economically, Oreodoxa oleracea is one of the most useful of the American palms. The bud of young leaves, like that of the palmetto, is eaten as a vegetable; the sheathing bases of the leaf stalks, which are eight or ten feet long, are used by the negroes as cradles, and are split into surgeons' splints; from the inner coat of these sheaths vellumlike paper is made, and mats are manufactured from their fibers. A kind of sago is obtained from the pith of the stem and oil is pressed from the seeds. The long stems are split longitudinally and, freed of the spongy interior, are used as gutters, while from the hard rindlike exterior rim beautiful canes and many small objects are made.

Another genus, Pseudophœnix, is monotypic and confined to two of the southern keys. It is a small and not particularly handsome tree, with long, arching, pinnate leaves and large orange scarlet, usually three lobed, fruits. The flowers of this species, of which there are probably not more than two or three hundred individuals in existence, unless it grows elsewhere than in Florida, are still unknown.

The last of our genera, Thrinax, is exclusively West Indian and Floridian, with a few species of small trees and shrubs distinguished by large, handsome fan-shaped leaves often silvery white on the lower surface, minute flowers, with calyx and corolla confluent into a short cup, and small fleshy or dry fruits. The Florida species are not well known, and there are probably four arborescent species on the keys, although at present no other North American trees are so little known as this group of palms.

THE observations of such a keen observer as Mr. Gladstone are always interesting. An item connected with vegetable physiology has been recently published in a letter by Mr. Gladstone to a correspondent who called his attention to the fact that plants derive most of their nutriment from the atmosphere. Mr. Gladstone, in the course of his remarks, wrote: "Within a hundred yards of my window stood a great beech, now, alas! victim of the gales. Some thirty years ago, an arm, 7 feet or 8 feet from the ground, and about 60 feet long to the end of the twigs, was nearly torn from the branch. I always reckoned that not less than four-fifths of the area which on a clean sawing would have been found to unite it to the tree were torn off; it held on by the remaining one-fifth; but nearly the whole weight of the arm was borne by the ground, on which there lay 12 feet or 15 feet of it, after some stumpy props had disappeared. It never took any sort of root, and the bark remained entire below as well as above. Under these circumstances the leaf came regularly all along the arm for at least twenty-five years, so well that it was not possible to distinguish between it and the tree. I used to look out for signs of failure, but could discern none, and the process might have continued to all appearances without change for a long time."

Reduction of Cost of Copies of Patents.

By a recent act of Congress the Commissioner of Patents is authorized to furnish inventors, solicitors and others with printed copies of patents at a reduced cost. After July first next, where the number and date of a patent are given, this office will supply printed copies of patents at cost of ten cents each.