

## Washington in 1903

At this point it might be interesting to consider Washington as it was in 1903. The White House was occupied by President Theodore Roosevelt who was swinging his "Big Stick". In a 1904 description of Washington it is described as follows. (1)

"There is only one incomparable residence city in the United States. That is the city of Washington; the city that charms men and delights women at all seasons of the year.

### Trees, Parks, Homes

Countless shade trees and scores of miles of broad asphalted streets would of themselves make Washington worthy of a visit, but they are only two of the many items which go to make up the sum total of urban desirability. Scattered liberally throughout the length and breadth of the city are parks (officially known as Government reservations). Some of these parks are merely grass-planted triangles, contributing to the fascinating geometrical design which caused it to be said that "Washington was modeled after Versailles and Versailles from a spider's web." Others are great squares or circles where streets and avenues converge; a setting of emerald for choice plants and flowers, and frequently sites for statues of soldiers, sailors and statesmen. Still others cover extensive territory. Rock Creek Park contains more than eighteen hundred acres; the Zoological Park has nearly two hundred acres; the Mall stretches from the Capitol to the Potomac. By-and-by there will be another great park. For years man and machinery have toiled to change the once-noisome and pestilential river marshes into a pleasure ground, and the bulk of the work has been done. Inclosed within a strong sea-wall the old riverbed has been transformed into tree-growing soil until there is a vast expanse of high ground which in the near future will be placed in the keeping of landscape gardeners to the end that the public may be pleased, edified and physically bettered.



Suburban Washington is extremely beautiful. It is beautiful even when compared with the city. It abounds in feasts of landscape, in highland sites and woodland retreats, in superb drives, crystal streams, fine travel facilities and the best of good society. From the swift-flowing and disturbed Potomac on the west, over the hills and valleys of the north and east, around to the now broader and majestic river on the south, there is a continuous chain of subdivisions within the links of which the new-comer may find enough of picturesque variety to puzzle him when he desires to make choice. Here is an attractive field for the investor. Washington's growth is no longer a matter of surmise.

Diversity of architecture is one of the reasons why Washington is such a desirable place of residence. Years ago many cities became enamored of certain styles of architecture, and it seemed almost impossible for any considerable number of people to depart from the designs which pleased their fathers and grandfathers. There has never been any such formalism in Washington. No long rows of undistinguishable houses precisely alike in every external and internal detail, and monotonous at all times, destroy Washington's claim to municipal individuality. Architectural independence is the rule and it has worked admirably. Instead of wearisome lanes of red bricks, white doorsteps and green blinds are the esthetic products of modern brains and sympathetic hands. This quality is by no means confined to the great mansions; in fact, it is more common in the less pretentious homes. Household art is a notable Washington characteristic.

#### Vital Figures

Some figures are confusing. Some are untruthful. Some are unattractive. The vital statistics of the National Capital are clear, accurate and gratifying. With a total population closely approximating three hundred thousand, in 1902 the white death rate was 15.92 per thousand inhabitants, the number of that class being about two hundred thousand, five hundred. The colored residents of the District of Columbia numbered then something like ninety thousand and their death rate was 29.13. The whole death rate was 19.99. Small as the rate is - swollen, however, by the much larger mortality of the negro - it lessens steadily. Twenty-four years ago the white death rate was 19.54, while the colored mortality was represented by 40.78. Since that time medical science and education have wrought wonders; not spasmodically, but continuously and solidly. Shallow wells have been filled up, marshes drained and streets cleaned, water-supply increased, milk carefully inspected, food adulterations sought and located, surface drainage stopped and sanitation taught. Countless efforts to defend the public from itself and its hardly less active enemies have brought forth marvelous results. A vigilant and efficient Health Department has so taken advantage of the broad highways and the natural sanitary conditions as to render the inhabitants proof against any scare of an epidemic. In no other city in the country is there less chance for the spreading abroad of any plague-like affliction.



A common community weakness is boastfulness as to the local climate. Washington does not boast of its climate, but it extracts a great deal of quiet satisfaction from the fact that in the summer it is much cooler than are many cities to the north of it. Southern breezes of which so many centers of populations complain during the summer season reach Washington cooled by a thousand miles of intimacy with the Atlantic Ocean and more than two hundred of miles of close communion with the Chesapeake and the Potomac. Even when the days are really hot the sun's heat has not that deadly effectiveness which is common in more northern cities. The local record of sun-strokes and heat prostrations shows almost entire immunity from fatal cases; a record which contrasts strongly with that made in the densely inhabited and narrow streets of such cities as New York, for instance. There have been times, too, when Washington has luxuriated in warmth while regions much nearer the equator have shivered in the clasp of the ice king. There is probably no place in all the eastern portion of the United States where the temperature is more equable than in the District of Columbia. Many invalids come to Washington during the fall and remain until it is time to visit the mountains or the seashore. The fact that Washington is situated in the great peach-growing belt is proof conclusive as to the mildness of its climate.

#### The Best School In The Country

As an educational center Washington has many advantages over other American cities. One in every five hundred of its inhabitants is a scientist of more than local repute. Nowhere in all the Western Hemisphere can there be found such a vast store of educational material. Here is the only place where the study of the Government of the great republic is possible. Here is the machinery which accomplishes so much. Here, all the year around, the executive branch puts in operation the plans committed to its keeping by that body which directly represents the people. Years might profitably be spent by students in observing the methods of presidents, cabinet officers, chiefs of bureaus clerks and even the holders of humbler positions. Here Congress meets and affords ample opportunity for the careful investigator into our legislative methods. Hither come the politicians, the seekers after office, the manipulators of the "pulls", the statesmen without visible means of support, the claimants, the men who hope to be but never are.

Object lessons, however, are not the only lessons taught in Washington. Here is the great Library of Congress, housed in a magnificent structure the decorations of which are the admiration of the art world; a library that seems to lack little of comparative completeness. Here are the government departments, each rich in material for study. Here is the Smithsonian Institution and National Museum. Here is the Corcoran Gallery of Art, a great collection splendidly sheltered. Here are universities and colleges and schools in profusion. A public library, only recently established, will soon, it is hoped, be sufficiently developed to supply the literary demands of this more than ordinary intelligent community. The building in which this library has its home is a notable contribution to architectural Washington.



Washington has strong social tendencies, and these, combined with the refined cosmopolitan character of Washington's population, add largely to the city's attractiveness as a place of residence. Here may be found the best representatives of European, Asiatic and American civilization; some of them prominent in the official world, others conspicuous in business affairs; still others content only on enjoying the fruits of their toil and the remnant of their days.

Official Washington is notable. While Congress is in session there can not possibly be complaint of dullness. There are banquets at the Executive Mansion; Presidential receptions to the Supreme Court, the Diplomatic Corps, the Houses of Congress, the Army and Navy, and the general public; weekly receptions by members of the Cabinet; Diplomatic Corps "at homes"; dinners galore; all the varieties of teas; theater parties without number; and a judicious sprinkling of opportunities to be at once fashionable and charitable. It should be understood, however, that Washington society is not wholly official nor is it altogether open to the possessor of any place in the Blue Book. Non-official Washington has a social circle in which may be found many delightful people whose qualities are solid and enduring; the best elements of all social life and worthy representatives of the men and women who have made the city what it is -- a Capital of which the Nation is justly proud.

Washington is well equipped with places of rational amusement. There are first-class theaters and second-class theaters and even third-class theaters. In the summer time there are continuous trolley excursions to glens and groves and lakes; river excursions many times a day; railroad trips to fresh brackish or salt water; and gardens devoted mainly to the sale of liquors which in certain seasons of the year are supposed to have cooling properties.

Light manufacturing could not find a more congenial home than in or in the immediate vicinity of the District of Columbia. At this time the enormous water-power of the Potomac is unused, but the day of such extravagant and inexcusable wastefulness is rapidly passing. A company is now planning to convert into electrical force the rushing torrents of the river at Great Falls and to convey that same force into the city for illuminating and propulsive purposes. That breach will probably result in the downfall of the wall which has until now shut out the industrious who have long grieved at their inability to turn to money-making use the hundreds of sites available for the less objectionable varieties of manufactures. There is a big local market for almost any kind of a factory product. Coal is brought directly by canal from the mines in the Cumberland district, and there is ample rail and river transportation.

Steam communication with the north, south, east and west is maintained by the Pennsylvania Railroad, the Baltimore & Ohio Railroad, the Atlantic Coast Line and the Seaboard Air Line. Electric railroads operate as far south as Alexandria, Va.; north to Rockville, Md.;



east to Laurel, Md., and west to Cabin John Bridge, Md. All the prominent suburbs are electrically connected with the city. Steam-boat service is constant. Three of the finest of river boats are run between Washington and Fortress Monroe, Norfolk and Newport News. Other good boats run to Mount Vernon, Marshall Hall, River View, Glymont, Chapel Point, Colonial Beach, Piney Point, all the other Potomac Landings in Maryland and Virginia, and up the Chesapeake to Baltimore.

### The Republic in Miniature

Washington's future is assured. The day of doubtings, of fears, and of little things, has departed forever. President Noyes, of the Washington Board of Trade, put that very happily when he said "The ward of the nation will never again be starved and ill-treated by its guardian, once contemptuous, now grown proud and affectionate. In the present partnership of nation and nation's city the former has endorsed the latter's promise to prosper as well as to pay. The swelling prospects of other places that attract men may collapse, mineral deposits may fail, tariff changes may ruin the business of a manufacturing town, fickle commerce may flow in other channels, but the fortune of the republic and its capital are inseparably interwoven, and, while the States of the Union endure and flourish Washington as the nation's city will show forth the republic in miniature, responding in its own growth to the national development and prosperity."

(1) From the Washington Electrical Handbook published by the local Branch of AIEE.

Compare the preceding description of Washington with that found in a leaflet issued by the Washington Board of Trade in 1950. It reads as follows:

### "Washington --- First City of the Land

Built upon the historic past, vibrant with the tempo of the present, Washington is a city actively molding the future -- for the United States and the World. Today, more than ever, beautiful Washington is the center of history in the making.

Not only a diplomatic crossroads -- its stately buildings, broad tree shaded avenues and verdant parklands make it the fairest city of America the Beautiful -- a "must" when you see America first.

The incomparable architecture of imposing administrative buildings leaves the visitor with a sense of massive strength, of the immensity of far flung government in action. Magnificent embassies and legations of every nation in the World are here, peoples of every land live in this thriving international metropolis.



But in whatever state your home may be, you'll find here the same familiar town square and courthouse -- for the entire nation. And in that alone, the city is a sincere tribute to the American way of life. Every American should avail himself of an opportunity to visit his Nation's capital -- Washington, D. C.

Where else will you find --

The steady progress of this growing nation as carefully preserved as in these great museums .

These world-famous art galleries that contain collections rivalling the most renowned in Europe.

The accumulated writings of a library world as gathered into these monumental libraries.

During three centuries of "Manifest Destiny" the peoples of many lands have become one people -- Americans -- and crossing together frontier after frontier there was born a culture, an art, a way of living unique to the world. Here in Washington today is available the finest exhibition of their struggles and their triumphs, their most memorable accomplishments preserved like footsteps in the sands of time for all who appreciate their significance.

Washington welcomes you in every season --

Cultural and historical benefits are available summer, and winter, spring and fall. Then too, there's spring tonic in colorful cherry blossoms around the tidal basin, and nature provides summer's delight in shaded picnic parks. This city so filled with trees becomes a bright palette of fall red and orange and winter's sparkle adds greater brilliance to its proud buildings."

In 1904 the National Bureau of Standards occupied one Building and a second one was under construction. Congress had appropriated \$25,000 for the site, \$325,000 for two buildings and \$225,000 for apparatus and equipment. The larger building was called the Physical Laboratory and the other the Mechanical Laboratory. The Act establishing the Bureau provided for fourteen positions at an aggregate salary of \$27,140.00. The next year (1902-3) the number was increased to 24 at an aggregate salary of \$36,060.00. The third year (1903-4) the number was increased to 58 with an aggregate salary of \$74,700.00. In the 1904-5 fiscal year there were altogether in the Bureau 71 positions with an aggregate salary of \$85,780.00.

The staff of the Bureau was as follows:

<u>Division I</u>	<u>Division II</u>	<u>Division III</u>
Prof. S. W. Stratton	Prof. E. B. Rosa	Dr. W. A. Noyes
L. A. Fischer	Dr. F. A. Wolfe	Dr. H. N. Stokes
(Col. Univ.)		
L. G. Hoxton	Dr. G. W. Middlekauf	Dr. Waters
R. Y. Ferner	C. R. Thurman	



Division I

N. S. Osborne  
L. L. Smith  
G. W. Eastman  
Dr. C. W. Wardner  
Dr. G. K. Burgess  
H. C. Deckemon  
Dr. R. G. Nutting  
F. J. Bates  
B. J. Spencer  
A. A. Merrill  
Henry D. Hubbard  
D. E. Douty  
Oscar G. Lange

Division II

Dr. K. E. Guthe  
C. M. Jansky  
Dr. N. E. Dorsey  
F. W. Grover  
Dr. M. G. Lloyd  
H. B. Brooks  
C. E. Reed  
F. S. Durston  
E. P. Hyde  
F. E. Cady  
C. F. Sponsler

The Bureau of Standards in Washington as it is today is shown in the airplane picture on another page.

Potomac Power Company - now known as the Potomac Electric Power Co. In the description given in the Handbooks we noted the following:

"The two phase system of distribution is gradually being displaced (1904) by the three phase system, current for which is furnished by 1 - 2000 kw turbo-generator of the Curtiss type which was recently installed in the plant at 14th and B Street, N. W. For comparison purposes on another page is shown an interior view of this plant and a view showing two turbogenerators of the new Potomac River Plant.

Government Printing Office - (Taken from the Washington Electrical Handbook.)

Apparently the writer on the electrical installation was quite proud of the switchboard which is described as follows:

SWITCHBOARD

The main features of the boiler, engine and generator equipment having been considered, it is time to speak of the other not less important parts of the plant, such as the switchboard, which itself constitutes a striking element of the ensemble. It will have been gathered from what has been said that the Printing Office is one of the show places of Washington, and the powerhouse is a part which visitors always take in. The handsome skylighted room is very light, not only because of the glass monitor roof, but on account of the interior lining of glazed white brick to a height of 9 feet, with red-faced brick above. The gallery floor and that of the engine room in front of the switchboard and around the side is of marble mosaic in figured panels; while within the brass railing around the generating units the floor is composed of cast-iron plates. The roof trusses and the traveling crane are painted in an agreeably cool shade of



green, and the total effect of the room is excellent, the machinery and the switchboard being set off in artistic relief. The crane is an electric one of 25 tons capacity and supported by columns of 6-inch heavy wrought-iron pipe filled with concrete set about 14 feet apart. The girders are braced to the structural framework of the building, and these lateral braces support the steam header in the room.

The switchboard is of a pinkish gray Tennessee marble, 82 feet long and 9 feet high, standing about 6 feet from the wall and accessible from both ends. There are two sets of bus-bars, one for light and one for power, and this subdivision of service is maintained throughout the building, although the generating switches are double-throw, so that any generator can take care of either set. These switches are also double-pole, the equalizer switches being separate. A 5,000 ampere tie-in switch has also been provided of the circuit-breaker type without the automatic tripper, for connecting the two sets of busses together. There is likewise a large single-pole, single-throw switch for connecting together the light and power equalizer busses, in case two generators should be operating one on light and the other on power with the tie-in switch closed. Each of the feeder switches is double-pole, double-throw, so that they can be independently thrown on either set of bus-bars. The board is virtually in two sections, the latest section, for control of supply in the new building, consisting of nine panels, with a length of 34 feet -- two generator panels and seven feeder. Here the feeder switches are in two rows. One set of busses extends along the middle of the panels in the rear of the board, with connections to feed both rows of switches, the upper ones when the switches are in the down position and the lower ones when the switches are in the up position. The other group of bus-bars is subdivided into two sets, one for the upper position of the upper row of switches and the other with less copper being installed only as a safety provision for the lower position of the lower row. All the feeders are protected by circuit-breakers mounted on marble panels at the rear of the board, and the generators also are protected by circuit-breakers behind the board, which can be thrown by means of push buttons on the front of the board. These breakers consist of two 5,000-ampere double-pole circuit-breakers; 28 double-pole breakers of 300 amperes; and 28 double-pole 600-ampere breakers. The contract on the new board called for the two 5,000-ampere, double-throw knife switches; two 5,000-ampere double-pole single-throw knife switches; one 5,000-ampere, single-pole, single-throw, and 56 600-ampere double-pole double-throw knife switches, all of which are of special design, hand finished, while the clamping nuts, bus connections, etc., have ground contacts.

The new section alone of the board carries about 25,000 pounds of copper exclusive of the measuring instruments, which include two illuminated dial voltmeters 0-150 volt; one illuminated differential voltmeter; two illuminated ammeters 0-6,000 amperes; one illuminated ammeter, 0-5,000 amperes; 20 round pattern ammeters, 0-500 amperes;



and 8 round ammeters 0-750 amperes. The leads of the two large generators are also brought out to two Thomson recording wattmeters, each with a capacity of 5,000 amperes, at 125 volts. A tell-tale panel of all wattmeters is placed also in the office of the chief electrician, who has spacious quarters, with filing cases and other adjuncts, on one of the main floors near by. A daily log is carefully kept of current output, based on 15-minute readings, and checking up each branch of supply. Some idea of the work done can be formed from the fact that the recent daily load in December, when the new building had hardly got into shape, has been from 8,200 to 8,900 kilowatt-hours daily, and that during November the total output was not less than 167,000 kilowatt-hours.

The board itself is bound by handsome heavy copper moulding, with iron framework, and angle-iron braces, cable carriers, etc., all of which were given two coats of the best asphaltum paint. Every detail of the board has been most carefully planned out for safety and perfect finish. No electrolytic copper was allowed, all being pure Lake rolled hard-drawn, or soft-drawn, according to the part. Bolts used in making the electrical connections are made from hard-drawn brass rod, with solid heads, and all flanged nuts are of pure cast copper. All finish on the front of the board, of switches, brackets and connections, is "drawn file finish;" all surface contacts are made with ground joints, and all edges are chamfered 3-64 inch. Standard requirements in every respect pushed to their limit have been deemed none too good for the board and its accessories, in view of the imperative necessity of maintaining service at all times under all contingencies.

Back of the board extends a rubber-covered walk and a ladder drops down to the engine room basement, where the system of distribution from the board may be said to begin.

#### Special Events

In 1904 the Branch played host for a day to a large group of foreign engineers who were attending the International Electrical Congress held in St. Louis on September 12, 1904. For the use of the visitors a special book entitled "Washington Electrical Handbook" was printed.

1904 - The pages of the Washington Star give the following account of the visit of foreign engineers who stopped off in Washington after their attendance to the International Electrical Congress.

The latter city being reached at 11 o'clock tonight. The several groups during the afternoon will be under the care and guidance of local members of the Electrical Institute.

The Washington hosts have prepared a handbook for the visitors, telling of the various points of interest in the Capital City, and containing articles dealing with the following local or national institutions: "Electrical Development in the United States".