# CLEANING A GREAT CITY.

## How London Is Rendered One of the Healthiest Cities in the World.

## PLAGUES OF THE "GOOD OLD TIMES."

## The Value of City Refuse as a Fertilizer.

## A LESSON FOR NEW YORK.

LONDON, May 12, 1877.

Not many persons, probably, among the hundreds of thousands who hurry daily through the busy streets of this great, overgrown metropolis—this country of houses—pause to remember that beneath their feet the ground is tunnelled for miles and miles by a vast and intricate series of underground works, and that it is their own teeming superabundance within the comparatively limited space where they live and move and have their being that has rendered these extensive and costly works absolutely necessary. How necessary they may at once perceive if they will turn for a moment to the statistics of life and death, the bills of mortality of the days when there was no Metropolitan Board of Works and no "main drainage," and when that fearful spectre, the plague, stalked periodically abroad through the filthy streets, striking down his victims right and left with his malaria-envenomed darts.

It is almost impossible, in the light of modern comforts and conveniences, to imagine the conditions of domestic life in London in the "good old times"—those ages of picturesque squalor, beloved of the artist but abhorred of the sanitarian. Refuse and waste had to be carried away from the houses to certain localities appointed by the city authorities, and of which there were four in London in 1670. It cannot be a matter of wonder, therefore, that disease and death were fearfully rife and frequent.

THE PLAGUE.

"It is to be remembered," says Sir William Petty, in an essay on the growth of London, published in 1682, "that, one time with another, a plague happeneth in London once in twenty years or thereabouts, and it is also to be remembered that the plagues of London do commonly kill one-fifth of the inhabitants;" and, further, "the plague of London is the chief impediment and objection against the growth of the city." In fact, within the century preceding the time when he thus wrote London had been visited by five separate plagues, which had carried off upward of 200,000 persons, the last of the five, the "great plague" of 1665, being responsible for 70,000 out of that number. And it must be remembered that these desolating ravages occurred among a population and in a city much inferior in numbers and extent to those of London of to-day. In 1603, for instance, the deaths from the plague were 3 out of 3.7 from all other diseases, and in 1625 there were eight times as many deaths as there were christenings in the preceding year. Were the same proportion to occur now, in a city which numbers more inhabitants than all Scotland, gathered together on 78,000 acres of ground, the result would be a bill of mortality such as the world has never seen. Thanks, however, to the progress of civil engineering and to the greater value now set upon human life the death roll has ceased to astonish and terrify. The tables have, in fact, been turned upon the king of terrors, and now the mortality bill shows an annual balance at credit, the increase of population amounting, year by year, to about 50,000 souls.

ANCIENT SCAVENGING.

To trace minutely the progress of improvement in sanitary engineering from the time when its principles first began to dawn on the minds of the Londoners would be a too long and somewhat tedious story, but it may be mentioned that it was in the year 1531 that the first "commission" was appointed which had for its especial object the regulation of the gutters and sewers, such as they then were. The parishes themselves were the first organizations for the cleansing of cities; but even in the time of Elizabeth the work was too heavy for the parochial authorities, and the sovereign had to take the matter into his or her own hands, and appointed court or city favorites as commissioners of sewers. These gentlemen were men of more considerable importance, socially and politically, than their modern representatives, and seemed to be vested with absolute control, for the king himself could not clean the avenues leading to his own palace without their authority, and when he did was asked to pay half the costs. For instance, the Commissioners of Sewers in 1663 ordered "that the King's Majesty (Charles II.) bear one-half the charge of the carrying away of the rubbish at the sluice by his said Majesty's bowling green;" and, a hundred years later, King George III. had to obtain the commissioners' leave to make a sewer from the queen's palace in St. James' Park. To judge by the arrangements then in vogue, there was not much difference between the condition of London streets of 1531 and those of two hundred years later. In fact, even after the commencement of the present century the practice of throwing offensive matter into the street was still in the full tide of its popularity, and it was a penal offence to discharge sewage into the sewers! Cesspools were regarded as the proper receptacles for house drainage, and sewers as the legitimate channels for carrying off the surface waters only.

THE SEWER RIVERS OF LONDON.

No summary of the early history of London sewers would be complete without some mention of the streams which formerly flowed through the city and discharged their waters into the Thames, but are now either entirely obliterated or do duty as sewers. On the west (Fleet street was then the west end!) was the Fleet; into it fell the Old Bourne, which with its cockney prefixed aspirate may still be recognized in the name of the familiar street, Holborn. The "Wells" mentioned by the early historian, Fitz-Stephen, as "choice fountains of water, sweet, wholesome and clear," the chief of which were Holy Well, Clerkenwell and St. Clement's Well also fell into the Fleet. Running through the middle of the city was Walbrook, and on the east was the Langbourne. The former was of much importance in early times, for vast quantities of piles were discovered along its course when excavations were being made for new streets, but both it and the Langbourne were gradually bridged over and finally disappeared beneath the street level of the growing city. The Fleet made a longer fight for visible existence, but succumbed at last, in 1732, after having endured much reviling at the hands of the satirists of its last years, Pope having immortalized it as

> The king of dikes! than whom no sluice of mud
> With deeper sable blots the silver flood.

It became the Fleet sewer and vanished forever from the light of day.

Up to the time when the gigantic operations which have made London the best drained city in the world were commenced the system of sewerage adopted was the very simple one of discharging all the main sewers into the Thames where it flows through the city. Most of these sewers, says J. W. Bazalgette, the engineer, "fell into the valley of the Thames, and most of them, passing under the low grounds on the margin of the river before they reached it, discharged their contents into that river at or about the level, and at the time of low water only. As the tide rose it closed the outlets and ponded back the sewage flowing from the high grounds. This accumulated in the low lying portions of the sewers, where it remained stagnant in many cases for eighteen out of every twenty-four hours. During that period the heavier ingredients were deposited and from day to day accumulated in the sewers; besides which, in times of heavy and long continued rains, and more particularly when these occurred at the time of high water in the river, the closed sewers were unable to store the increased volume of sewage, which then rose through the house drains and flooded the basements of the houses.

The effect upon the Thames of thus discharging the sewage into it at the time of low water was most injurious, because not only was it carried by the rising tide up the river, to be brought back to London by the outgoing ebb tide, there to mix with each day's fresh supply—the process of many days' accumulation toward the sea being almost imperceptible—but the volume of the pure water in the river, being at that time at its minimum, rendered it quite incapable of diluting and purifying such vast masses of sewage.

THE SEWER COMMISSIONS.

Prior to 1847 there were eight independent and distinct "commissions" intrusted with the drainage of the metropolis, and these different bodies carried out their work utterly regardless of the drainage of any other district than their own. Each street had its own "system," and large sewers were made to discharge into small ones as frequently as small ones into smaller. The evil became a crying one, and at last the eight commissioners were superseded by one single body called the Metropolitan Commission of Sewers. This corporation patronized the small pipe sewers instead of those of brick, vaulted, and were certainly slow to admit of having abolished 30,000 cesspools in six years. But then, on the other hand, they made a practice of dumping all the refuse of the streets and houses into the river, with what result all who remember what the Thames was and how it looked before the completion of the present system and the erection of the embankment, know too well.

Six years after the original Metropolitan Commission superseded by new commissions, but none of them lived long enough to effect any real good. In 1849 the outcry became loud and general—and no wonder—when it was known that several of the water companies, who then derived their supply from the river, were giving the inhabitants diluted sewage for drinking and cooking, as well as using it for watering the streets. At last, schemes for the purification of the river and of the streets were invited by advertising, and no less than 110 suggestions were submitted and considered. In 1854 Mr., now Sir J., Bazalgette, a civil engineer of Italian origin, was directed to prepare plans to cut off the sewage from the river within the limits of the city and construct a subterranean system of tunnels which would carry the sewage to certain points far down the stream toward the sea at such a distance that there could be no possibility of its returning with the flood tide. The present

METROPOLITAN BOARD OF WORKS

came into existence in 1856, and from that time the problem of drainage for the vast and ever-increasing metropolis has been fairly grappled with. "New lines of sewers, laid at right angles to the old ones and a little below their levels, intercept their contents and convey them to an outfall fourteen miles below London Bridge. As large a proportion of the sewage as practicable is by this means carried away by gravitation, and for the remainder a constant discharge is effected by pumping. At the outlets the sewage is delivered into reservoirs, situate on the banks of the Thames, and placed at such a level as will enable them to discharge into the river at about the time of high water. By this arrangement the sewage is not only at once diluted by the large volume of water in the Thames at high water, but is also carried by the ebb tide to a point twenty-six miles below London Bridge." Such, in the engineer's own words, are the results which years of labor and experiment and the expenditure of millions of pounds have at last secured for the great city, once plague-stricken and fever-ridden, but now, notwithstanding its four millions of densely packed inhabitants, one of the healthiest in Europe. The great work of the Metropolitan Board of Works—the main drainage—has attracted the attention of the governing bodies of all the great cities of Europe.

SEWER STATISTICS.

During the twenty years that have elapsed since the commencement of the present system the authorities have built eighty-one miles of tunnelling and no less than 1,300 miles of arterial sewers. These are constructed of "Gault" clay bricks, sometimes faced with Staffordshire blue lime mortar or Portland cement mixed with lime; but a large proportion of the sewers is laid in cement alone. The tunnels had to be driven through all kinds of soil, under bridges, through marshes, within a few feet of old foundations of buildings still standing and even under railroads. In the construction of these extensive works 320,000,000 bricks were used and 3,500,000 of cubic yards of earth removed. The sewers carry off about sixteen million cubic feet of sewage daily, and are capable of discharging 60,000,000 cubic feet of rainfall—equivalent to emptying a lake of 482 acres three feet deep, every day. The total cost has been about £4,000,000, or about $20,000,000, giving an average of about $6 per head of the entire population of the metropolis. In addition to this immense sum the local bodies of the metropolis, outside the "city" proper, have spent in eighteen years nearly $5,500,000 on the cleansing of the streets. Cleanliness, we have high authority for saying, is next to godliness, and, whether or no the mass of Londoners believe the dictum, they have certainly paid for it as if they thought so!

SEWER FLUSHERS.

Each vestry, or local body, employs its own men for the local sewers, and their number constantly varies. A permanent staff of 130 sewer flushers is employed by the Board of Works, and it is the duty of these men to inspect every day the eighty-two miles of main intercepting sewers. Encased in leather overalls of one continuous piece they descend into the sewers by the man-holes, carrying with them guarded lights, and wade through the horrible stuff until they arrive at the termination of their beat. An occasional rat is the only living thing they see in their gloomy peregrinations—a fierce, uncanny beast is the sewer rat, scarce afraid of the light, and not by any means so civilized as the

> Great rats, small rats, lean rats, brawny rats,
> Brown rats, black rats, gray rats, tawny rats,

of Browning's "Pied Piper." Singularly enough, however, rats can hardly live in the metropolitan sewers, owing to the great flush of water, which drowns them out.

THE SEWAGE RESERVOIRS.

On either side of the Thames, far away from London, are the two immense reservoirs which receive the sewage of the metropolis. On the north bank, at the mouth of Barking Creek, is the Barking Reservoir, which receives the drainage of the three great northern main sewers. This reservoir is 16¾ feet in average depth, and is divided by partition walls into four compartments, covering altogether an effective area of 412,384 superficial feet, or about 9½ acres. The external and partition walls are of brickwork, and the entire area is covered by brick arches, supported upon brick piers, the floor being paved throughout with York stone. The reservoir, being almost entirely above the general surface of the ground, is covered by an embankment of earth rising about two feet above the crown of the arches. The ground over which it is built being unfit to sustain the structure the foundations of the piers and of the walls were carried down in concrete to a depth of nearly twenty feet.

On the opposite side of the river, but further down the stream, is the great southern reservoir and pumping station, which is six and a half acres in extent, is covered by brick arches supported on brick piers, and is furnished with weirs for overflows and with a flushing culvert. Its height, level and general construction are similar to that at Barking Creek. Over the reservoir are built twenty-one cottages, for the engineers and other persons employed upon the works. The sewage from this reservoir is discharged into the river at the time of high water only, but the sewer is at such a level that it can discharge its full volume by gravitation about the time of low water. Its outlet is ordinarily closed by a penstock placed across its mouth, and its contents are raised by pumping into the reservoir, which is built at the same level as that on the north side, and, like it, it stores the sewage, except for the two hours of discharge after high water. The sewage is thus diverted from its direct course to the river into a side channel leading to the pump well, which forms part of the foundation for the engine house; from this well it is lifted by four beam engines, each of 125 horse power, and actuating, direct from the beam, two compound pumps, each having four plungers. The engines are condensing, rotative beam engines, the cylinders being four feet in diameter, with a length of stroke of nine feet.

SUMMARY.

The following figures, relating to the main drainage of London, will be interesting. They are taken from the Chief Engineer's report:—The total cost has been over £4,000,000, and has been raised by loan and paid off by a rate of three pence levied on the metropolis, which produces £180,262 per annum, and the principal and interest of the loan will be paid off in about thirty years. There are about 1,300 miles of sewers in London and eighty-two miles of main intercepting sewers. Three hundred and eighteen millions of bricks and 880,000 cubic yards of concrete have been consumed, and 3,500,000 cubic yards of earth have been excavated in the execution of the main drainage works. The total pumping power employed is 2,330 nominal horse power, and if at full work night and day 44,000 tons of coals per annum would be consumed, but the average consumption is estimated at 20,000 tons.

The sewage on the north side of the Thames at present amounts to 10,000,000 cubic feet per day, and on the south side to 4,000,000 cubic feet per day, but provision is made for an anticipated increase up to 11,500,000 on the north side and 5,750,000 on the south side, in addition to 28,500,000 cubic feet of rainfall per diem on the north side and 17,250,000 cubic feet per diem on the south side, or a total of 63,000,000 cubic feet per diem, which is equal to a lake of 482 acres, three feet deep.

UTILIZATION OF THE SEWAGE.

It is scarcely credible that this immense body of matter is not utilized in any way, but goes absolutely to waste, lost forever in the waters of the Thames. In respect to the utilization of sewage, although the subject has received much attention from scientific men, England has as yet much to learn, being surpassed by the Chinese in their appreciation of the value of town refuse. The solid refuse of Paris has for many years been separated and removed for agricultural manure, but London remains as backward in this respect as the ancient Jews, who kept a furnace called "Gehenna," or "Hell fire," constantly burning in the Valley of Hinnom, into which the refuse of Jerusalem was daily cast. Upon the question of the disposal of town sewage, to which, of course, there are two sides, a recent meeting of the Sanitary Institute of Great Britain affords some interesting particulars. Sir Joseph Bazalgette, the Engineer of the Main Drainage, himself opened the discussion. As to the difficulties of the pollution of rivers, he said there were three modes proposed for overcoming them—first, by separating the sewage or decomposing matter from the water at the outfall of the sewer, before being discharged into the river, by chemical agents; second, causing the sewage to flow over land, and so cultivate the land and purify the sewage, allowing the effluent water to pass into the river; and third, preventing all decomposing matter entering the sewer by keeping it in a solid form and disposing of it upon land. All who advocated these processes aimed at obtaining a valuable manurial product. Sir Joseph quoted the opinion of the committee on the above points, and himself added that he was of opinion that the purification of sewage should only be adopted in exceptional cases. For London, as much as 40,000 acres, or sixty square miles, would be necessary for a sewage farm; and, therefore, he thought it was not possible to find land in sufficient and suitable quantity, free from residences, near to the large towns, which might be so dealt with. He contended that town sewage could be utilized only at considerable cost, and that, therefore, it was better for towns situated on tidal estuaries to turn the sewage into the sea. He might be told that that was a serious waste of money—that it was pouring millions of money into the sea; but he thought it was much better to spend a million of money in this way than two millions in attempting to utilize sewage, which would only fetch one million when sold. London affords the best example of the disposal of sewage on the principle of carrying it away by the water-carriage system into the out sea. In London the expenditure, including the interest on capital borrowed for the construction of the main sewers, and including the annual cost of pumping 136,000,000 of gallons daily in dry weather thirty five feet high, and the cleansing and maintaining, has been at the rate of £1 per head per annum. Had London obtained sixty square miles for a sewage farm, and adopted a process of purification, it would have led to a great failure and costly debt. He then compared the systems adopted in London and Paris, drawing conclusions favorable to the former city; and, having given several instances of the difficulty of disposing of town sewage when made into manure, concluded that there was no one system for the disposal of town sewage which could be advocated for all places.—*The Manchester System.*

Mr. C. F. Garnier (Ashbourne) explained in detail the method of treating town sewage which had been recently adopted at Manchester, and said that the manure which was produced from the town sewage was sold at 12s. 6d. per ton, and the farmers were only too glad to get it at the price. He had received communications in praise of the quality of the manure, and the farmers in his neighborhood had taken up the question warmly, and had written to him to obtain manure for them, expressing their willingness to pay, in addition to the 12s. 6d. per ton, 5s. 4d. for carriage. If such a large town as Manchester could thus utilize its sewage, why could not other towns do so? As to the idea that there was no sale for the manure, he was in possession of a letter from Dr. Lee (the medical officer of Manchester), in which that gentleman stated that they had only 1,000 tons left from last year.

In the evening Professor Austed read a paper in the same institution, entitled "The Treatment of Town Refuse and Sewage, as recently introduced at Manchester and previously tried at Salford," in which he said that that process was well worthy of consideration and trial, for it professed (1) to manufacture charcoal in an available form from part of the town refuse; (2) to burn off as fuel a quantity of otherwise useless material, in order to feed furnaces employed to manufacture charcoal, thus disposing of another part; (3) to utilize much, if not all, the products of combustion of such manufacture; (4) to utilize the waste heat of the furnaces in evaporating of part of the water from the liquid contents of pails, and reducing that material to a thickening fluid having a definite manurial value, and (5) to produce an available manure by deodorizing and disinfecting the fecal matter and decayed animal matter, and mixing them with charcoal and the thickened urine. The author of the paper then described the nature and extent of the sewage works at Manchester, and explained the methods adopted to produce the above mentioned results.

General Scott, C. B., who presided, believed the subject was of very great importance to the country, because—although he was quite certain that a majority of the English people would, as far as their personal comfort was concerned, continue to use the water-closet if they could get it—no doubt there was a very large population distributed throughout the country who saw that the conveniences of the Manchester system were of the highest importance.

Mr. Hope said that the question was not to be solved so easily by the simple adoption of the system described; for the real difficulty of the sewage question was the fact that there was and always would be in every town a large volume of water coming in every day clean at one end and going out dirty at the other—the great difficulty being that it got dirty in going through the town. Whether the solid matter was extracted before or after it entered the sewers was of little consequence; there still remained the dirty water to be dealt with. Any attempt to deodorize it by any chemical process was a physical and almost a chemical impossibility. It could only be purified by being applied to the land. Chemistry lay at the root of the whole question, and it was only the chemist who could tell the real facts of the case. There existed in town sewage certain elements which had a certain market value; but there was not a single instance of a town which had utilized its sewage with profit. The negative result, however, was due to the mismanagement and ignorance of the local boards of health of those towns—the members of the boards being totally ignorant of agriculture. Persons must not run away with the idea that the sewage difficulty could be solved simply by combustion.

Mr. Rawson spoke of the results of seven or eight years' practical experience of the A B C process of dealing with town sewage, and for that process he claimed that it could make manure from town sewage that would sell at a price which would cover the whole expense of treatment; that it would make an effluent which would be fit to go into any river, and that the latter could be done without the slightest nuisance in any part of the operation. He said that the result of a nine days' trial of the system at Leeds, with some of the worst possible description of refuse and sewage, was thoroughly satisfactory to the Rivers Pollution Commissioners. It was an entire and wicked mistake, he said, to aver that it was impossible to make a paying manure from town sewage. If the precipitation process were used and care were taken not to injure the manurial qualities of the sewage the neighboring farmers would have an opportunity of sending their carts to the nearest market town and obtaining a manure at £3 10s. per ton—a price which would amply pay the town.

# THE NEW CAB COMPANY.

THE STOCK BOOKS TO BE OPEN ON TUESDAY—PROSPECTS OF SUCCESS—VIEWS OF MESSRS. TOWNSHEND AND SHEPARD.

The interest taken by capitalists in the proposed organization of the Manhattan Cab Company (limited), gives great encouragement to the promoters of the enterprise. The active spirits in the work anticipate no difficulty in placing the stock as soon as the books are opened on Tuesday at the banking house of the company. Mr. Frank Kavanagh, the representative of the English stockholders, left the city last evening to spend the Sabbath at Niagara Falls with friends, but will return on Tuesday. With a view of ascertaining what was thought of the prospects of the enterprise some of its friends were visited and interviewed.

MR. TOWNSHEND'S VIEWS.

John Townshend, counsel of the company, was found to be very enthusiastic and sanguine of the final success of the scheme. Next to rapid transit what the masses of our people want, he said, is cheap transit, and we propose to educate the people of New York up to riding in comfortable cabs instead of in crowded stages and cars. For instance, a lawyer desires to go from his office in Wall street to the City Hall. For twenty-five cents he can go quickly and cheaply, without risking his life in a congregation of trucks and wagons in the effort to reach the stage. A man and his wife desire to go to the theatre or make a social evening call. They would rather, I take it, pay twenty-five cents for a cab than stand on a street corner, in the rain or cold, waiting for the arrival of a street car, only to find when it does arrive that they must cling to straps to their journey's end. A gentleman, hurrying down town in the morning to his place of business, can for fifty cents ride from Thirty-fourth street comfortably. The service will be beneficial to all classes who require quick and easy transportation throughout the city, and will be especially a great boon to ladies who have calls to make and shopping to do. The company is incorporated under the laws of 1875, entitled "An act for the reorganization and regulation of business corporations, passed June 21, 1875," which provides that the shares shall not be less than $25 nor more than $100. Our company propose to fix the shares at $100 each and the capital stock at $250,000, which is considered ample. I do not anticipate any difficulty in placing the stock. Indeed, I fear that we will be perplexed to apportion stock to all who have expressed a desire to subscribe when the books are opened. Under the act above referred to not less than five persons must apply to the Secretary of State for authority to open subscription books. Our application was signed by sixteen corporators and the Secretary of State has appointed commissioners to open the subscription books. As soon as one half the stock is subscribed the stockholders will meet for permanent organization. We propose to start one hundred cabs to begin with and will increase the number as people come to appreciate the value of the service and necessity demands such increase. Each vehicle will be provided with an ingenious invention, arranged with dial and watch works, by which the occupant of the cab will be able to register the time he employs it. This appliance also registers the number of trips made during the day, so that it will be impossible for the drivers to appropriate to their own use any of the receipts unless they contrive to break the register. Speaking of the financial prospects, Mr. Townshend stated that careful estimates, based on similar service in European cities, indicated a profit of $1 50 per day on each vehicle, or twenty-seven per cent per annum on the nominal capital of $250,000. This, however, might be a too high estimate.

MR. SHEPARD'S VIEWS.

Mr. Elliott F. Shepard stated that he had not taken an active part in the details of the company, merely confining himself to preparing the necessary legal papers to effect the organization. Yet from the success attending similar companies in Paris and London and the very high rates charged for cabbing in this city he felt sanguine of the success of this attempt to relieve the people of the annoyance of vexatious delays in going from one part of the city to another. Mr. Kavanagh is very familiar, said he, with cabbing in Europe, and in a general way I think his theories are correct. I don't see why it should cost $1 50 to go from Union square to the HERALD office. Whether the stockholders will reap profitable dividends depends largely upon the demand for that kind of transportation. The demand for safe and quick transportation increases with the growth of the population. The crowded state of our city cars shows any careful observer that we have not near enough facilities for rapid transportation. Indeed there would be a greater demand for such mode of conveyance if people could move about quickly and cheaply. Many persons now transact business by letter, whereas if they could go to a given point quickly and at a moderate rate of fare they would transact it in person. Relative to the ability of the company to place their stocks, Mr. Shepard said he thought no difficulty would be experienced. A number of the livery stable keepers had expressed a desire to subscribe, as well as a number of wagon manufacturers. Among the latter is the firm of Abbott, Downing & Co., of Concord, N. H., and a large New Haven firm. One of the advantages of the company is that the stockholders are only liable for the amount of their stock. The word "limited," on all their signs, in their legal contracts, &c., gives them, under the law, this protection, and the omission of that word only affects that particular contract. Mr. Shepard stated that he understood that the old cab company of last year, of which Vermilye & Co. are the bankers, are disposed to come in and join interests with the Manhattan Company.

# "BREAD WINNERS."

The parties who had charge of the late mass meeting of workingmen at Cooper Institute have issued a stirring appeal to the workingmen of the city. In the address the two political parties get their heads knocked together, as follows:—

We call upon you to organize. You must take your own interests in your own hands. You must have a party of your own, based on a platform that will not ignore the great, the one issue of the day—resumption of labor.

If in the present condition of business you cannot accomplish this by political action through your governments, then you cannot achieve the purpose of our constitution; you cannot secure to yourselves life, liberty and the pursuit of happiness. But you can do it, and we propose to tell you how to do it. Of the two great parties, under the leadership of statesmen, which were once such powerful agents in the development of our moral and material progress, nothing to-day remains but the Custom House and Tammany. Three times since the crisis of 1873 burst upon us you went to the polls and gave fat offices to the most honest men of those two political machines. What have they done? They talked of liberty on the stump and sold us to monopolies in the lobby. They talked of economy and voted away the people's money to their partners in jobbery. But where is an act, a measure of our federal, State or municipal governments calculated to revive our prostrate industries? Men and things have lost all values. No demand for labor. No market for the product of labor. Employer or employé—he that works or would work either lists or starves. The official and the bondholder are safe in their idleness.

# RELIGIOUS INTELLIGENCE.

## Programme of Church Services To-Day.

## CHAT BY THE WAY.

## Ordination of Priests at Seton Hall and Troy.

At the Greek Russian Chapel Pentecostal services will be held this morning by Rev. N. Bjerring.

Dr. A. A. Willetts, of Philadelphia, will preach in Dr. Burchard's church this morning and evening.

In the American Free Church this morning the Rev. C. P. McCarthy will celebrate the first anniversary of the church and his pastorate with it by the review of "One Year's Struggles." In the evening he will speak of "Our First Birthday."

In the Academy of Music, Brooklyn, the Rev. Fred. Bell will speak this morning about "The wise and foolish virgins," and in the evening will give another singing sermon.

"What the law could not do" will be told in Asbury Methodist Episcopal Church this morning by Rev. A. P. Lyon. In the evening Mr. Lyon will consider "Joseph, the man of varied fortune."

"Light that cannot be hid" will be made manifest in Chickering Hall this afternoon by Rev. S. Colcord. Preaching there in the morning also.

The Rev. John Johns will preach in the Free Tabernacle Methodist Episcopal Church at the usual hours to-day.

"Abraham's family worship our model" will be demonstrated in Willett Street Methodist Episcopal Church to-day by Rev. John E. Searles.

Mrs. Nellie Brigham lectures for the Spiritualists at No. 55 West Thirty-third street to-day. J. V. Mansfield will address the Spiritualists in Harvard Rooms to-day. A Spiritualist entertainment will be given at No. 1,679 Broadway this evening.

Edith O'Gorman, the converted nun, will relate her religious experience in Bleecker Hall this evening.

In the Church of the Messiah the Rev. W. R. Alger will preach this morning on "The Causes and the Abolition of War."

The Rev. E. C. Sweetser will preach this morning in Bleecker Street Universalist Church. In the evening Rev. J. M. Pullman will preach.

"Christian Motherhood" will be discussed this evening by Rev. S. H. Tyng, Jr., in the Church of the Holy Trinity. Sermon also in the morning.

The closing service of the Young Men's Christian Association of Yorkville will be held this afternoon in Parepa Hall. The Rev. W. T. Sabine will deliver an address.

In the Church of Our Saviour this morning the Rev. J. M. Pullman will weave "A wreath of remembrance for soldiers' graves."

In the Church of the Resurrection the Rev. J. W. Trimble will preach this morning and Dr. Henry C. Potter, of Grace Church, this evening. Bishop Potter will administer the rite of confirmation there on Wednesday evening.

Dr. Deems will preach for the Church of the Strangers this morning, and in the evening will speak about Eli's "Trembling for the Ark."

"Former Days" and "Sincerely Wrong" are the themes on which the Rev. N. L. Rowell will speak to-day before the Free Baptist Church.

This morning the Rev. W. T. Sabine will preach in the First Reformed Episcopal Church, and in the evening the Rev. Mason Gallagher will repeat, by request, a sermon preached by him before the late Reformed Episcopal Council on "The Reformed Episcopal Church the legitimate successor of the Church of Cranmer, Latimer and Ridley."

Dr. Armitage will tell the Fifth Avenue Baptist Church this morning how "Gentleness Makes Men Great," and this evening he will present "Jesus, the World's Light."

The Rev. J. S. Kennard will preach for Grace Baptist Church at the usual hours to-day.

"The Believer's Security in Christ" will be discussed by Rev. William Lloyd this morning in Madison Avenue Reformed Church, and in the evening "Christ Stilling the Tempest" will be reviewed.

The Rev. George T. Dowling, of Syracuse, will preach in the Pilgrim Baptist Church this morning and evening.

"The Flower Charity" will be treated of this morning in Masonic Temple by Mr. O. B. Frothingham.

"The Ministry of Angels" and "The Cripple at Lystra" will receive the consideration of Rev. George H. Hepworth and the Church of the Disciples to-day at the usual hours.

Drs. Howard Crosby and T. W. Chambers will occupy the pulpit of the Collegiate Dutch Church, Forty-eighth street and Fifth avenue, to-day.

"A Perfect Man of God" will be presented this morning to the Laight Street Baptist Mission Church by Dr. H. W. Knapp. He will consider "Too Busy to Save" in the evening.

Dr. George W. Woodruff, in Allen street Methodist Episcopal Church, will inquire this evening "What difference if any there is between a real Christian and an honest man of the world?"

The Rev. G. S. Plumley will speak of "The Christian's Faith" and "God's Covenant" to-day before the North Dutch Church, Fulton street.

Dr. Isaac Wescott will speak in Plymouth Baptist Church this morning on "The Decoration of Soldiers' Graves," and in the evening will preach a sermon to young men on "Temperance."

Reformed Episcopal Church services are held at the regular hours in Hager's Building by Rev. George Howell.

"The hidden manna and the white stone" and "Melchisedec" will occupy the attention and thought of Rev. A. H. Moment at Spring street Presbyterian Church to-day.

In Stanton street Baptist Church the Rev. S. J. Knapp will preach this morning on "Jesus Watching," and this evening on "Better and Better."

In the Tabernacle Baptist Church the Rev. Robert B. Hull will preach on "Their Rock and Our Rock" this morning, and on "A Successful Life" this evening.

The Revs. Stephen Thomoff, of Bulgaria, and M. L. Banerjea, of India, will address the congregation in St. Luke's Methodist Episcopal Church this evening on "Turkey and India as affected by the present war."

In West Twenty-third street Presbyterian Church Dr. E. N. White will preach at the usual hours to-day.

"The Patriotism of Peace" will be presented for consideration this evening by Rev. Carlos Martyn to the Reformed Church in West Thirty-fourth street. Sermon also in the morning.

## CHAT BY THE WAY.

A man cannot see the sun except by the light of the sun. Neither can a man understand religion except he be taught by religion.

When a man dies the world asks, "How much did he leave?" but the angels ask, "How much did he bring with him?"

It is a little curious that onions and religion have the same effect on human nature. Of the onion Barry Alden sings:—

> But then call on a lady:
> Why is her smile so grim?
> Before a word is spoken,
> She knows you've been with him [i. e., the onion].

And if you have anything in the shape of a true religion everybody will discover it, not by the breath, as with the onion, but by the life.

It is quite necessary to have some general idea of the Bible if you travel. An old lady, who had just been told that a certain monument was of malachite, exclaimed, "Why, I thought Malachite was one of the prophets." She could see how Lot's wife might be converted into a monument, but it seemed to her tender nature a kind of vandalism to perform the same operation on Malachi, and declared that he must have petrified after he died.

Economy has its funny side. A simple minded man was told that if any one who smoked two cigars a day would smoke only one and save the money for the other he would after a few years have enough to buy a small farm. After long meditation he determined to learn to smoke the two cigars a day in order that he might economize in the manner above mentioned, and even now he is puzzled to know why he is out of pocket.

It is a sad matrimonial fact that many a man who had his own way when he led his wife to the altar had it on that occasion for the last time.

A woman is an intricate conundrum, which every man delights in guessing, and which he is never willing to give up.

It is said that music has charms to chase away all evil thoughts. This is not always true, however, for in nearly every one's back yard there is a Thomas orchestra which excites the nervous system and causes anything but a placid state of mind. Adjectives and missiles are hurled in great abundance; but the feline motto, "No surrender until the concert is over," is strictly adhered to in almost every case.

The Moody and Sankey hymns have something in them to fit almost every temperament. We thought one of them very suggestive the other morning, when at five o'clock we got up to take an observation and arrange with Old Prob for a pic-nic day, and heard the cheery voice of the milkman sing, "We will gather at the river."

The Baptists have had a trying time in translating the Bible into Japanese. They determined that there should be no ambiguity about the doctrine of immersion. Our version reads, "Repent and be baptized," and for centuries we have been bothered to find out exactly what baptize means and how much water is required in the service. In the Japanese Bible the matter is put beyond a doubt. It reads "Repent and be soaked." By this shrewd strategem the Baptists have got the theological lead, the right of way, so to speak, in Japan.

A man may be a minister and yet never preach. The business man who holds his own in these hard times and pays his debts delivers a sermon on honesty more emphatic than the logic of some clergymen. Let us make no mistake in this matter. A gentleman who was educated for the ministry concluded to go into business. Some one said to him, "Ah, you have turned back after putting your hand to the plow!" He parried the thrust by replying, "No, I have only taken another plow, that is all."

How many people pray that God will do what they know they ought to do themselves. They deliver a sing-song petition that the good Lord will take care of all forlorn people, but they wont send even the remains of the dessert to them themselves. The best thing you can do is to pray not by the side of your own well filled table that God wont let poor people starve to death, but when you have a basket full of good things on your arm which you are carrying to a needy family. Don't pray that the poor may have potatoes while your own bins are heaped full.

> And would you, who hear this simple tale,
> Pray for the poor, and praying, "prevail?"
> Then preface your prayers with alms and good deeds;
> Search out the poor, their wants and needs;
> Pray for peace and grace and spiritual food;
> For wisdom and guidance, for all these are good,
> But don't forget the potatoes.

It is said that in Sweden, when a spinster dies, a looking-glass is put into the coffin. The reason is only hinted at, not given. She couldn't think of going even into glory without seeing that the curls were all right and the spectacles at the proper angle.

At the recent meeting of "advanced" women the fact of advancement was clearly demonstrated. And yet they have not reached that point where they can tolerate the peculiarities of Dr. Mary Walker, who insists on wearing bifurcated garments like any other man. The English language was, however, used with considerable effect, and most of the choice epithets were hurled with feminine venom at that masculine tyrant commonly known as a husband. Mrs. Spencer said that in a conversation with Senator Logan she gave him a terrible "lambasting." What this is exactly we cannot tell without a dictionary, but the way in which it was said shows it to be the direful vengeance of an enraged woman. She told him further that when the feminine part of our great country did get the ballot they would "lay him so flat and cold that he would be the last person heard of on resurrection day." Life has become entirely undesirable to the Senator since that threat, and if, after reflection, he finds that the ballot is likely to be given to women, he proposes to commit suicide just for the sake of getting ahead of them on the important day above mentioned.

Some one said, sarcastically, that if your religion is simply Moody religion it is not enough. Unless your religion is the result of conviction, and not of a mood, you had better go back and be converted all over again. There are so many people who remind us of the conversation of two colored Christians that we will give it for the public benefit:—"W'y, brudder Remus, you ain't done gone and unjined yourse'f from de Church, have you?" The answer was somewhat evasive:—"Not in perticler, brudder Rastus; I ain't 'zactly unjined, but I've jest kinder drawed out, you know." Well, the tinted brethren are not the only ones who "jine," and then after a while "kinder draw out, you know."

Blue glass is doing a great deal of injury in certain directions. A milkman the other day asserted that he was above the use of water, and that he presented his customers with milk from cows that had never even been allowed to stand out of doors when it rained. Over a pan of this natural product was placed a pane of blue glass, and in sixty minutes a lily pad had made its appearance, and after a couple of days a two pound trout was discovered. The question which naturalists are now trying to solve is whether the milkman was strictly truthful, or whether it is possible for the cow to imbibe the protoplastic element of lily pads and trout when she meditates on the edge of the river. The latter must be the true solution since, every milkman carries the hatchet of General Washington as the symbol of his honor.

A good excuse is worth everything to a man sometimes. We heard the other day of a poor fellow who said in prayer meeting, and with great effect on the unconverted, that he had lately a very wonderful escape. He fell from a third story window, and, while falling, thought of all the evil in his life and promised the Lord that if he wasn't killed he would reform and become a Christian man. Just at this point a brother arose and said, "Mr. Jones, after that I expect you to pay me the $2 you owe me." This was making religion a practical and personal matter, and what to do about it the speaker hardly knew. At last, however, a bright idea struck him and he answered, "'Tis true, Brother Thomas, that I wasn't killed, but before I pay you that $2 I am going to wait to see the ultimate effect of that fall on my nervous system. I may die yet, and I've got to wait and see."

There is nothing like definiteness in prayer. A simple minded old lady who had been told that she would get all she asked for, after she was converted, determined to make a trial. She took pencil and paper, wrote down what she wanted, and then went on her knees. "O Lord, look down on me, a hard working woman. Give me to-day my daily bread—viz., one pound salt pork, half ditto salt beef, three pounds of sugar and a good strong pair of hand-sewed winter boots." Well, she may not have been so far wrong after all. This simple petition may have been as acceptable as some of the more stately utterances, which have not half the old lady's faith as lifting power.

## THE CATHOLIC PRIESTHOOD.

CARDINAL M'CLOSKEY ORDAINS SEVEN PRIESTS AND CONFERS THE OTHER HOLY ORDERS ON EIGHTY-FOUR CANDIDATES.

Nothing could be more impressive than the ceremonies of the past two days at the Troy Ecclesiastical Seminary. Cardinal McCloskey, accompanied by his Secretary, Rev. J. M. Farley, journeyed to Troy on Thursday and on Friday morning at the eight o'clock mass conferred minor orders upon fifty-nine of the students. The first of these "orders" is called "ostiariorum," or doorkeeper, an office of no mean dignity in the early days of the Church. The arch-priest calls those by name who are to receive the order, and each one