

BOOK SECOND.--THE INTESTINE OF THE LEVIATHAN

CHAPTER I--THE LAND IMPOVERISHED BY THE SEA

Paris casts twenty-five millions yearly into the water. And this without metaphor. How, and in what manner? Day and night. With what object? With no object. With what intention? With no intention. Why? For no reason. By means of what organ? By means of its intestine. What is its intestine? The sewer.

Twenty-five millions is the most moderate approximative figure which the valuations of special science have set upon it.

Science, after having long groped about, now knows that the most fecundating and the most efficacious of fertilizers is human manure. The Chinese, let us confess it to our shame, knew it before us. Not a Chinese peasant--it is Eckberg who says this,--goes to town without bringing back with him, at the two extremities of his bamboo pole, two full buckets of what we designate as filth. Thanks to human dung, the earth in China is still as young as in the days of Abraham. Chinese wheat yields a hundred fold of the seed. There is no guano comparable in fertility with the detritus of a capital. A great city is the most mighty of dung-makers. Certain success would attend the experiment

of employing the city to manure the plain. If our gold is manure, our manure, on the other hand, is gold.

What is done with this golden manure? It is swept into the abyss.

Fleets of vessels are despatched, at great expense, to collect the dung of petrels and penguins at the South Pole, and the incalculable element of opulence which we have on hand, we send to the sea. All the human and animal manure which the world wastes, restored to the land instead of being cast into the water, would suffice to nourish the world.

Those heaps of filth at the gate-posts, those tumbrils of mud which jolt through the street by night, those terrible casks of the street department, those fetid drippings of subterranean mire, which the pavements hide from you,--do you know what they are? They are the meadow in flower, the green grass, wild thyme, thyme and sage, they are game, they are cattle, they are the satisfied bellows of great oxen in the evening, they are perfumed hay, they are golden wheat, they are the bread on your table, they are the warm blood in your veins, they are health, they are joy, they are life. This is the will of that mysterious creation which is transformation on earth and transfiguration in heaven.

Restore this to the great crucible; your abundance will flow forth from it. The nutrition of the plains furnishes the nourishment of men.

You have it in your power to lose this wealth, and to consider me

ridiculous to boot. This will form the master-piece of your ignorance.

Statisticians have calculated that France alone makes a deposit of half a milliard every year, in the Atlantic, through the mouths of her rivers. Note this: with five hundred millions we could pay one quarter of the expenses of our budget. The cleverness of man is such that he prefers to get rid of these five hundred millions in the gutter. It is the very substance of the people that is carried off, here drop by drop, there wave after wave, the wretched outpour of our sewers into the rivers, and the gigantic collection of our rivers into the ocean. Every hiccough of our sewers costs us a thousand francs. From this spring two results, the land impoverished, and the water tainted. Hunger arising from the furrow, and disease from the stream.

It is notorious, for example, that at the present hour, the Thames is poisoning London.

So far as Paris is concerned, it has become indispensable of late, to transport the mouths of the sewers down stream, below the last bridge.

A double tubular apparatus, provided with valves and sluices, sucking up and driving back, a system of elementary drainage, simple as the lungs of a man, and which is already in full working order in many communities in England, would suffice to conduct the pure water of the fields into our cities, and to send back to the fields the rich water of the cities, and this easy exchange, the simplest in the world, would retain among us

the five hundred millions now thrown away. People are thinking of other things.

The process actually in use does evil, with the intention of doing good. The intention is good, the result is melancholy. Thinking to purge the city, the population is blanched like plants raised in cellars. A sewer is a mistake. When drainage, everywhere, with its double function, restoring what it takes, shall have replaced the sewer, which is a simple impoverishing washing, then, this being combined with the data of a new social economy, the product of the earth will be increased tenfold, and the problem of misery will be singularly lightened. Add the suppression of parasitism, and it will be solved.

In the meanwhile, the public wealth flows away to the river, and leakage takes place. Leakage is the word. Europe is being ruined in this manner by exhaustion.

As for France, we have just cited its figures. Now, Paris contains one twenty-fifth of the total population of France, and Parisian guano being the richest of all, we understate the truth when we value the loss on the part of Paris at twenty-five millions in the half milliard which France annually rejects. These twenty-five millions, employed in assistance and enjoyment, would double the splendor of Paris. The city spends them in sewers. So that we may say that Paris's great prodigality, its wonderful festival, its Beaujon folly, its orgy, its stream of gold from full hands, its pomp, its luxury, its magnificence,

is its sewer system.

It is in this manner that, in the blindness of a poor political economy, we drown and allow to float down stream and to be lost in the gulfs the well-being of all. There should be nets at Saint-Cloud for the public fortune.

Economically considered, the matter can be summed up thus: Paris is a spendthrift. Paris, that model city, that patron of well-arranged capitals, of which every nation strives to possess a copy, that metropolis of the ideal, that august country of the initiative, of impulse and of effort, that centre and that dwelling of minds, that nation-city, that hive of the future, that marvellous combination of Babylon and Corinth, would make a peasant of the Fo-Kian shrug his shoulders, from the point of view which we have just indicated.

Imitate Paris and you will ruin yourselves.

Moreover, and particularly in this immemorial and senseless waste, Paris is itself an imitator.

These surprising exhibitions of stupidity are not novel; this is no young folly. The ancients did like the moderns. "The sewers of Rome," says Liebig, "have absorbed all the well-being of the Roman peasant." When the Campagna of Rome was ruined by the Roman sewer, Rome exhausted Italy, and when she had put Italy in her sewer, she poured in Sicily,

then Sardinia, then Africa. The sewer of Rome has engulfed the world. This cess-pool offered its engulfment to the city and the universe. Urbi et orbi. Eternal city, unfathomable sewer.

Rome sets the example for these things as well as for others.

Paris follows this example with all the stupidity peculiar to intelligent towns.

For the requirements of the operation upon the subject of which we have just explained our views, Paris has beneath it another Paris; a Paris of sewers; which has its streets, its cross-roads, its squares, its blind-alleys, its arteries, and its circulation, which is of mire and minus the human form.

For nothing must be flattered, not even a great people; where there is everything there is also ignominy by the side of sublimity; and, if Paris contains Athens, the city of light, Tyre, the city of might, Sparta, the city of virtue, Nineveh, the city of marvels, it also contains Lutetia, the city of mud.

However, the stamp of its power is there also, and the Titanic sink of Paris realizes, among monuments, that strange ideal realized in humanity by some men like Macchiavelli, Bacon and Mirabeau, grandiose vileness.

The sub-soil of Paris, if the eye could penetrate its surface, would

present the aspect of a colossal madrepor. A sponge has no more partitions and ducts than the mound of earth for a circuit of six leagues round about, on which rests the great and ancient city. Not to mention its catacombs, which are a separate cellar, not to mention the inextricable trellis-work of gas pipes, without reckoning the vast tubular system for the distribution of fresh water which ends in the pillar fountains, the sewers alone form a tremendous, shadowy net-work under the two banks; a labyrinth which has its slope for its guiding thread.

There appears, in the humid mist, the rat which seems the product to which Paris has given birth.

CHAPTER II--ANCIENT HISTORY OF THE SEWER

Let the reader imagine Paris lifted off like a cover, the subterranean net-work of sewers, from a bird's eye view, will outline on the banks a species of large branch grafted on the river. On the right bank, the belt sewer will form the trunk of this branch, the secondary ducts will form the branches, and those without exit the twigs.

This figure is but a summary one and half exact, the right angle, which is the customary angle of this species of subterranean ramifications, being very rare in vegetation.

A more accurate image of this strange geometrical plan can be formed by supposing that one is viewing some eccentric oriental alphabet, as intricate as a thicket, against a background of shadows, and the misshapen letters should be welded one to another in apparent confusion, and as at haphazard, now by their angles, again by their extremities.

Sinks and sewers played a great part in the Middle Ages, in the Lower Empire and in the Orient of old. The masses regarded these beds of decomposition, these monstrous cradles of death, with a fear that was almost religious. The vermin ditch of Benares is no less conducive to giddiness than the lions' ditch of Babylon. Teghath-Phalasar, according to the rabbinical books, swore by the sink of Nineveh. It was from the sewer of Munster that John of Leyden produced his false moon, and it was from the cess-pool of Kekscheb that oriental menalchme, Mokanna, the

veiled prophet of Khorassan, caused his false sun to emerge.

The history of men is reflected in the history of sewers. The Germoniaie[58] narrated Rome. The sewer of Paris has been an ancient and formidable thing. It has been a sepulchre, it has served as an asylum. Crime, intelligence, social protest, liberty of conscience, thought, theft, all that human laws persecute or have persecuted, is hidden in that hole; the maillotins in the fourteenth century, the tire-laine of the fifteenth, the Huguenots in the sixteenth, Morin's illuminated in the seventeenth, the chauffeurs [brigands] in the eighteenth. A hundred years ago, the nocturnal blow of the dagger emerged thence, the pickpocket in danger slipped thither; the forest had its cave, Paris had its sewer. Vagrancy, that Gallic picareria, accepted the sewer as the adjunct of the Cour des Miracles, and at evening, it returned thither, fierce and sly, through the Maubuee outlet, as into a bed-chamber.

It was quite natural, that those who had the blind-alley Vide-Gousset, [Empty-Pocket] or the Rue Coupe-Gorge [Cut-Throat], for the scene of their daily labor, should have for their domicile by night the culvert of the Chemin-Vert, or the catch basin of Hurepoix. Hence a throng of souvenirs. All sorts of phantoms haunt these long, solitary corridors; everywhere is putrescence and miasma; here and there are breathing-holes, where Villon within converses with Rabelais without.

The sewer in ancient Paris is the rendezvous of all exhaustions and of all attempts. Political economy therein spies a detritus, social

philosophy there beholds a residuum.

The sewer is the conscience of the city. Everything there converges and confronts everything else. In that livid spot there are shades, but there are no longer any secrets. Each thing bears its true form, or at least, its definitive form. The mass of filth has this in its favor, that it is not a liar. Ingenuousness has taken refuge there. The mask of Basil is to be found there, but one beholds its cardboard and its strings and the inside as well as the outside, and it is accentuated by honest mud. Scapin's false nose is its next-door neighbor. All the uncleannesses of civilization, once past their use, fall into this trench of truth, where the immense social sliding ends. They are there engulfed, but they display themselves there. This mixture is a confession. There, no more false appearances, no plastering over is possible, filth removes its shirt, absolute denudation puts to the rout all illusions and mirages, there is nothing more except what really exists, presenting the sinister form of that which is coming to an end. There, the bottom of a bottle indicates drunkenness, a basket-handle tells a tale of domesticity; there the core of an apple which has entertained literary opinions becomes an apple-core once more; the effigy on the big sou becomes frankly covered with verdigris, Caiphas' spittle meets Falstaff's puking, the louis-d'or which comes from the gaming-house jostles the nail whence hangs the rope's end of the suicide. A livid foetus rolls along, enveloped in the spangles which danced at the Opera last Shrove-Tuesday, a cap which has pronounced judgment on men wallows beside a mass of rottenness which was formerly

Margoton's petticoat; it is more than fraternization, it is equivalent to addressing each other as thou. All which was formerly rouged, is washed free. The last veil is torn away. A sewer is a cynic. It tells everything.

The sincerity of foulness pleases us, and rests the soul. When one has passed one's time in enduring upon earth the spectacle of the great airs which reasons of state, the oath, political sagacity, human justice, professional probity, the austerities of situation, incorruptible robes all assume, it solaces one to enter a sewer and to behold the mire which befits it.

This is instructive at the same time. We have just said that history passes through the sewer. The Saint-Barthelemys filter through there, drop by drop, between the paving-stones. Great public assassinations, political and religious butcheries, traverse this underground passage of civilization, and thrust their corpses there. For the eye of the thinker, all historic murderers are to be found there, in that hideous penumbra, on their knees, with a scrap of their winding-sheet for an apron, dismally sponging out their work. Louis XI. is there with Tristan, Francois I. with Duprat, Charles IX. is there with his mother, Richelieu is there with Louis XIII., Louvois is there, Letellier is there, Hebert and Maillard are there, scratching the stones, and trying to make the traces of their actions disappear. Beneath these vaults one hears the brooms of spectres. One there breathes the enormous fetidness of social catastrophes. One beholds reddish reflections in the corners.

There flows a terrible stream, in which bloody hands have been washed.

The social observer should enter these shadows. They form a part of his laboratory. Philosophy is the microscope of the thought. Everything desires to flee from it, but nothing escapes it. Tergiversation is useless. What side of oneself does one display in evasions? the shameful side. Philosophy pursues with its glance, probes the evil, and does not permit it to escape into nothingness. In the obliteration of things which disappear, in the watching of things which vanish, it recognizes all. It reconstructs the purple from the rag, and the woman from the scrap of her dress. From the cess-pool, it re-constitutes the city; from mud, it reconstructs manners; from the potsherd it infers the amphora or the jug. By the imprint of a finger-nail on a piece of parchment, it recognizes the difference which separates the Jewry of the Judengasse from the Jewry of the Ghetto. It re-discovers in what remains that which has been, good, evil, the true, the blood-stain of the palace, the ink-blot of the cavern, the drop of sweat from the brothel, trials undergone, temptations welcomed, orgies cast forth, the turn which characters have taken as they became abased, the trace of prostitution in souls of which their grossness rendered them capable, and on the vesture of the porters of Rome the mark of Messalina's elbowing.

CHAPTER III--BRUNESEAU

The sewer of Paris in the Middle Ages was legendary. In the sixteenth century, Henri II. attempted a bore, which failed. Not a hundred years ago, the cess-pool, Mercier attests the fact, was abandoned to itself, and fared as best it might.

Such was this ancient Paris, delivered over to quarrels, to indecision, and to gropings. It was tolerably stupid for a long time. Later on, '89 showed how understanding comes to cities. But in the good, old times, the capital had not much head. It did not know how to manage its own affairs either morally or materially, and could not sweep out filth any better than it could abuses. Everything presented an obstacle, everything raised a question. The sewer, for example, was refractory to every itinerary. One could no more find one's bearings in the sewer than one could understand one's position in the city; above the unintelligible, below the inextricable; beneath the confusion of tongues there reigned the confusion of caverns; Daedalus backed up Babel.

Sometimes the Paris sewer took a notion to overflow, as though this misunderstood Nile were suddenly seized with a fit of rage. There occurred, infamous to relate, inundations of the sewer. At times, that stomach of civilization digested badly, the cess-pool flowed back into the throat of the city, and Paris got an after-taste of her own filth. These resemblances of the sewer to remorse had their good points; they were warnings; very badly accepted, however; the city waxed indignant

at the audacity of its mire, and did not admit that the filth should return. Drive it out better.

The inundation of 1802 is one of the actual memories of Parisians of the age of eighty. The mud spread in cross-form over the Place des Victoires, where stands the statue of Louis XIV.; it entered the Rue Saint-Honore by the two mouths to the sewer in the Champs-Elysees, the Rue Saint-Florentin through the Saint-Florentin sewer, the Rue Pierre-a-Poisson through the sewer de la Sonnerie, the Rue Popincourt, through the sewer of the Chemin-Vert, the Rue de la Roquette, through the sewer of the Rue de Lappe; it covered the drain of the Rue des Champs-Elysees to the height of thirty-five centimetres; and, to the South, through the vent of the Seine, performing its functions in inverse sense, it penetrated the Rue Mazarine, the Rue de l'Echaude, and the Rue des Marais, where it stopped at a distance of one hundred and nine metres, a few paces distant from the house in which Racine had lived, respecting, in the seventeenth century, the poet more than the King. It attained its maximum depth in the Rue Saint-Pierre, where it rose to the height of three feet above the flag-stones of the water-spout, and its maximum length in the Rue Saint-Sabin, where it spread out over a stretch two hundred and thirty-eight metres in length.

At the beginning of this century, the sewer of Paris was still a mysterious place. Mud can never enjoy a good fame; but in this case its evil renown reached the verge of the terrible. Paris knew, in a confused way, that she had under her a terrible cavern. People talked of it as

of that monstrous bed of Thebes in which swarmed centipedes fifteen long feet in length, and which might have served Behemoth for a bathtub. The great boots of the sewer men never ventured further than certain well-known points. We were then very near the epoch when the scavenger's carts, from the summit of which Sainte-Foix fraternized with the Marquis de Crequi, discharged their loads directly into the sewer. As for cleaning out,--that function was entrusted to the pouring rains which encumbered rather than swept away. Rome left some poetry to her sewer, and called it the Gemoniae; Paris insulted hers, and entitled it the Polypus-Hole. Science and superstition were in accord, in horror. The Polypus hole was no less repugnant to hygiene than to legend. The goblin was developed under the fetid covering of the Mouffetard sewer; the corpses of the Marmousets had been cast into the sewer de la Barillerie; Fagon attributed the redoubtable malignant fever of 1685 to the great hiatus of the sewer of the Marais, which remained yawning until 1833 in the Rue Saint-Louis, almost opposite the sign of the Gallant Messenger. The mouth of the sewer of the Rue de la Mortellerie was celebrated for the pestilences which had their source there; with its grating of iron, with points simulating a row of teeth, it was like a dragon's maw in that fatal street, breathing forth hell upon men. The popular imagination seasoned the sombre Parisian sink with some indescribably hideous intermixture of the infinite. The sewer had no bottom. The sewer was the lower world. The idea of exploring these leprous regions did not even occur to the police. To try that unknown thing, to cast the plummet into that shadow, to set out on a voyage of discovery in that abyss--who would have dared? It was alarming. Nevertheless, some one did present

himself. The cess-pool had its Christopher Columbus.

One day, in 1805, during one of the rare apparitions which the Emperor made in Paris, the Minister of the Interior, some Decres or Cretet or other, came to the master's intimate levee. In the Carrousel there was audible the clanking of swords of all those extraordinary soldiers of the great Republic, and of the great Empire; then Napoleon's door was blocked with heroes; men from the Rhine, from the Escaut, from the Adige, and from the Nile; companions of Joubert, of Desaix, of Marceau, of Hoche, of Kleber; the aerostiers of Fleurus, the grenadiers of Mayence, the pontoon-builders of Genoa, hussars whom the Pyramids had looked down upon, artillerists whom Junot's cannon-ball had spattered with mud, cuirassiers who had taken by assault the fleet lying at anchor in the Zuyderzee; some had followed Bonaparte upon the bridge of Lodi, others had accompanied Murat in the trenches of Mantua, others had preceded Lannes in the hollow road of Montebello. The whole army of that day was present there, in the court-yard of the Tuileries, represented by a squadron or a platoon, and guarding Napoleon in repose; and that was the splendid epoch when the grand army had Marengo behind it and Austerlitz before it.--"Sire," said the Minister of the Interior to Napoleon, "yesterday I saw the most intrepid man in your Empire."--"What man is that?" said the Emperor brusquely, "and what has he done?"--"He wants to do something, Sire."--"What is it?"--"To visit the sewers of Paris."

This man existed and his name was Bruneseau.

CHAPTER IV--BRUNESEAU.

The visit took place. It was a formidable campaign; a nocturnal battle against pestilence and suffocation. It was, at the same time, a voyage of discovery. One of the survivors of this expedition, an intelligent workingman, who was very young at the time, related curious details with regard to it, several years ago, which Bruneseau thought himself obliged to omit in his report to the prefect of police, as unworthy of official style. The processes of disinfection were, at that epoch, extremely rudimentary. Hardly had Bruneseau crossed the first articulations of that subterranean network, when eight laborers out of the twenty refused to go any further. The operation was complicated; the visit entailed the necessity of cleaning; hence it was necessary to cleanse and at the same time, to proceed; to note the entrances of water, to count the gratings and the vents, to lay out in detail the branches, to indicate the currents at the point where they parted, to define the respective bounds of the divers basins, to sound the small sewers grafted on the principal sewer, to measure the height under the key-stone of each drain, and the width, at the spring of the vaults as well as at the bottom, in order to determine the arrangements with regard to the level of each water-entrance, either of the bottom of the arch, or on the soil of the street. They advanced with toil. The lanterns pined away in the foul atmosphere. From time to time, a fainting sewerman was carried out. At certain points, there were precipices. The soil had given away, the pavement had crumbled, the sewer had changed into a bottomless well; they found nothing solid; a man disappeared suddenly; they had great

difficulty in getting him out again. On the advice of Fourcroy, they lighted large cages filled with tow steeped in resin, from time to time, in spots which had been sufficiently disinfected. In some places, the wall was covered with misshapen fungi,--one would have said tumors; the very stone seemed diseased within this unbreathable atmosphere.

Bruneseau, in his exploration, proceeded down hill. At the point of separation of the two water-conduits of the Grand-Hurleur, he deciphered upon a projecting stone the date of 1550; this stone indicated the limits where Philibert Delorme, charged by Henri II. with visiting the subterranean drains of Paris, had halted. This stone was the mark of the sixteenth century on the sewer; Bruneseau found the handiwork of the seventeenth century once more in the Ponceau drain of the old Rue Vielle-du-Temple, vaulted between 1600 and 1650; and the handiwork of the eighteenth in the western section of the collecting canal, walled and vaulted in 1740. These two vaults, especially the less ancient, that of 1740, were more cracked and decrepit than the masonry of the belt sewer, which dated from 1412, an epoch when the brook of fresh water of Menilmontant was elevated to the dignity of the Grand Sewer of Paris, an advancement analogous to that of a peasant who should become first valet de chambre to the King; something like Gros-Jean transformed into Lebel.

Here and there, particularly beneath the Court-House, they thought they recognized the hollows of ancient dungeons, excavated in the very sewer itself. Hideous place! An iron neck-collar was hanging in one of these cells. They walled them all up. Some of their finds were singular; among

others, the skeleton of an ourang-outan, who had disappeared from the Jardin des Plantes in 1800, a disappearance probably connected with the famous and indisputable apparition of the devil in the Rue des Bernardins, in the last year of the eighteenth century. The poor devil had ended by drowning himself in the sewer.

Beneath this long, arched drain which terminated at the Arche-Marion, a perfectly preserved rag-picker's basket excited the admiration of all connoisseurs. Everywhere, the mire, which the sewer men came to handle with intrepidity, abounded in precious objects, jewels of gold and silver, precious stones, coins. If a giant had filtered this cesspool, he would have had the riches of centuries in his lair. At the point where the two branches of the Rue du Temple and of the Rue Sainte-Avoye separate, they picked up a singular Huguenot medal in copper, bearing on one side the pig hooded with a cardinal's hat, and on the other, a wolf with a tiara on his head.

The most surprising encounter was at the entrance to the Grand Sewer. This entrance had formerly been closed by a grating of which nothing but the hinges remained. From one of these hinges hung a dirty and shapeless rag which, arrested there in its passage, no doubt, had floated there in the darkness and finished its process of being torn apart. Bruneseau held his lantern close to this rag and examined it. It was of very fine batiste, and in one of the corners, less frayed than the rest, they made out a heraldic coronet and embroidered above these seven letters: LAVBESP. The crown was the coronet of a Marquis, and the seven letters

signified Laubespine. They recognized the fact, that what they had before their eyes was a morsel of the shroud of Marat. Marat in his youth had had amorous intrigues. This was when he was a member of the household of the Comte d'Artois, in the capacity of physician to the Stables. From these love affairs, historically proved, with a great lady, he had retained this sheet. As a waif or a souvenir. At his death, as this was the only linen of any fineness which he had in his house, they buried him in it. Some old women had shrouded him for the tomb in that swaddling-band in which the tragic Friend of the people had enjoyed voluptuousness. Bruneseau passed on. They left that rag where it hung; they did not put the finishing touch to it. Did this arise from scorn or from respect? Marat deserved both. And then, destiny was there sufficiently stamped to make them hesitate to touch it. Besides, the things of the sepulchre must be left in the spot which they select. In short, the relic was a strange one. A Marquise had slept in it; Marat had rotted in it; it had traversed the Pantheon to end with the rats of the sewer. This chamber rag, of which Watteau would formerly have joyfully sketched every fold, had ended in becoming worthy of the fixed gaze of Dante.

The whole visit to the subterranean stream of filth of Paris lasted seven years, from 1805 to 1812. As he proceeded, Bruneseau drew, directed, and completed considerable works; in 1808 he lowered the arch of the Ponceau, and, everywhere creating new lines, he pushed the sewer, in 1809, under the Rue Saint-Denis as far as the fountain of the Innocents; in 1810, under the Rue Froidmanteau and under the

Salpetriere; in 1811 under the Rue Neuve-des-Petits-Peres, under the Rue du Mail, under the Rue de l'Echarpe, under the Place Royale; in 1812, under the Rue de la Paix, and under the Chaussee d'Antin. At the same time, he had the whole net-work disinfected and rendered healthful. In the second year of his work, Bruneseau engaged the assistance of his son-in-law Nargaud.

It was thus that, at the beginning of the century, ancient society cleansed its double bottom, and performed the toilet of its sewer. There was that much clean, at all events.

Tortuous, cracked, unpaved, full of fissures, intersected by gullies, jolted by eccentric elbows, mounting and descending illogically, fetid, wild, fierce, submerged in obscurity, with cicatrices on its pavements and scars on its walls, terrible,--such was, retrospectively viewed, the antique sewer of Paris. Ramifications in every direction, crossings, of trenches, branches, goose-feet, stars, as in military mines, coecum, blind alleys, vaults lined with saltpetre, pestiferous pools, scabby sweats, on the walls, drops dripping from the ceilings, darkness; nothing could equal the horror of this old, waste crypt, the digestive apparatus of Babylon, a cavern, ditch, gulf pierced with streets, a titanic mole-burrow, where the mind seems to behold that enormous blind mole, the past, prowling through the shadows, in the filth which has been splendor.

This, we repeat, was the sewer of the past.

CHAPTER V--PRESENT PROGRESS

To-day the sewer is clean, cold, straight, correct. It almost realizes the ideal of what is understood in England by the word "respectable." It is proper and grayish; laid out by rule and line; one might almost say as though it came out of a bandbox. It resembles a tradesman who has become a councillor of state. One can almost see distinctly there. The mire there comports itself with decency. At first, one might readily mistake it for one of those subterranean corridors, which were so common in former days, and so useful in flights of monarchs and princes, in those good old times, "when the people loved their kings." The present sewer is a beautiful sewer; the pure style reigns there; the classical rectilinear alexandrine which, driven out of poetry, appears to have taken refuge in architecture, seems mingled with all the stones of that long, dark and whitish vault; each outlet is an arcade; the Rue de Rivoli serves as pattern even in the sewer. However, if the geometrical line is in place anywhere, it is certainly in the drainage trench of a great city. There, everything should be subordinated to the shortest road. The sewer has, nowadays, assumed a certain official aspect. The very police reports, of which it sometimes forms the subject, no longer are wanting in respect towards it. The words which characterize it in administrative language are sonorous and dignified. What used to be called a gut is now called a gallery; what used to be called a hole is now called a surveying orifice. Villon would no longer meet with his ancient temporary provisional lodging. This net-work of cellars has its

immemorial population of prowlers, rodents, swarming in greater numbers than ever; from time to time, an aged and veteran rat risks his head at the window of the sewer and surveys the Parisians; but even these vermin grow tame, so satisfied are they with their subterranean palace. The cesspool no longer retains anything of its primitive ferocity. The rain, which in former days soiled the sewer, now washes it. Nevertheless, do not trust yourself too much to it. Miasmas still inhabit it. It is more hypocritical than irreproachable. The prefecture of police and the commission of health have done their best. But, in spite of all the processes of disinfection, it exhales, a vague, suspicious odor like Tartuffe after confession.

Let us confess, that, taking it all in all, this sweeping is a homage which the sewer pays to civilization, and as, from this point of view, Tartuffe's conscience is a progress over the Augean stables, it is certain that the sewers of Paris have been improved.

It is more than progress; it is transmutation. Between the ancient and the present sewer there is a revolution. What has effected this revolution?

The man whom all the world forgets, and whom we have mentioned, Bruneseau.

CHAPTER VI--FUTURE PROGRESS

The excavation of the sewer of Paris has been no slight task. The last ten centuries have toiled at it without being able to bring it to a termination, any more than they have been able to finish Paris. The sewer, in fact, receives all the counter-shocks of the growth of Paris. Within the bosom of the earth, it is a sort of mysterious polyp with a thousand antennae, which expands below as the city expands above. Every time that the city cuts a street, the sewer stretches out an arm. The old monarchy had constructed only twenty-three thousand three hundred metres of sewers; that was where Paris stood in this respect on the first of January, 1806. Beginning with this epoch, of which we shall shortly speak, the work was usefully and energetically resumed and prosecuted; Napoleon built--the figures are curious--four thousand eight hundred and four metres; Louis XVIII., five thousand seven hundred and nine; Charles X., ten thousand eight hundred and thirty-six; Louis-Philippe, eighty-nine thousand and twenty; the Republic of 1848, twenty-three thousand three hundred and eighty-one; the present government, seventy thousand five hundred; in all, at the present time, two hundred and twenty-six thousand six hundred and ten metres; sixty leagues of sewers; the enormous entrails of Paris. An obscure ramification ever at work; a construction which is immense and ignored.

As the reader sees, the subterranean labyrinth of Paris is to-day more than ten times what it was at the beginning of the century. It is

difficult to form any idea of all the perseverance and the efforts which have been required to bring this cess-pool to the point of relative perfection in which it now is. It was with great difficulty that the ancient monarchical provostship and, during the last ten years of the eighteenth century, the revolutionary mayoralty, had succeeded in perforating the five leagues of sewer which existed previous to 1806. All sorts of obstacles hindered this operation, some peculiar to the soil, others inherent in the very prejudices of the laborious population of Paris. Paris is built upon a soil which is singularly rebellious to the pick, the hoe, the bore, and to human manipulation. There is nothing more difficult to pierce and to penetrate than the geological formation upon which is superposed the marvellous historical formation called Paris; as soon as work in any form whatsoever is begun and adventures upon this stretch of alluvium, subterranean resistances abound. There are liquid clays, springs, hard rocks, and those soft and deep quagmires which special science calls moutardes.[59] The pick advances laboriously through the calcareous layers alternating with very slender threads of clay, and schistose beds in plates incrustated with oyster-shells, the contemporaries of the pre-Adamite oceans. Sometimes a rivulet suddenly bursts through a vault that has been begun, and inundates the laborers; or a layer of marl is laid bare, and rolls down with the fury of a cataract, breaking the stoutest supporting beams like glass. Quite recently, at Villette, when it became necessary to pass the collecting sewer under the Saint-Martin canal without interrupting navigation or emptying the canal, a fissure appeared in the basin of the canal, water suddenly became abundant in the subterranean tunnel, which was beyond

the power of the pumping engines; it was necessary to send a diver to explore the fissure which had been made in the narrow entrance of the grand basin, and it was not without great difficulty that it was stopped up. Elsewhere near the Seine, and even at a considerable distance from the river, as for instance, at Belleville, Grand-Rue and Lumiere Passage, quicksands are encountered in which one sticks fast, and in which a man sinks visibly. Add suffocation by miasmas, burial by slides, and sudden crumbling of the earth. Add the typhus, with which the workmen become slowly impregnated. In our own day, after having excavated the gallery of Clichy, with a banquette to receive the principal water-conduit of Ourcq, a piece of work which was executed in a trench ten metres deep; after having, in the midst of land-slides, and with the aid of excavations often putrid, and of shoring up, vaulted the Bievre from the Boulevard de l'Hopital, as far as the Seine; after having, in order to deliver Paris from the floods of Montmartre and in order to provide an outlet for that river-like pool nine hectares in extent, which crouched near the Barriere des Martyrs, after having, let us state, constructed the line of sewers from the Barriere Blanche to the road of Aubervilliers, in four months, working day and night, at a depth of eleven metres; after having--a thing heretofore unseen--made a subterranean sewer in the Rue Barre-du-Bec, without a trench, six metres below the surface, the superintendent, Monnot, died. After having vaulted three thousand metres of sewer in all quarters of the city, from the Rue Traversiere-Saint-Antoine to the Rue de l'Ourcine, after having freed the Carrefour Censier-Mouffetard from inundations of rain by means of the branch of the Arbalete, after having built the Saint-Georges

sewer, on rock and concrete in the fluid sands, after having directed the formidable lowering of the flooring of the vault timber in the Notre-Dame-de-Nazareth branch, Duleau the engineer died. There are no bulletins for such acts of bravery as these, which are more useful, nevertheless, than the brutal slaughter of the field of battle.

The sewers of Paris in 1832 were far from being what they are to-day. Bruneseau had given the impulse, but the cholera was required to bring about the vast reconstruction which took place later on. It is surprising to say, for example, that in 1821, a part of the belt sewer, called the Grand Canal, as in Venice, still stood stagnating uncovered to the sky, in the Rue des Gourdes. It was only in 1821 that the city of Paris found in its pocket the two hundred and sixty-thousand eighty francs and six centimes required for covering this mass of filth. The three absorbing wells, of the Combat, the Cunette, and Saint-Mande, with their discharging mouths, their apparatus, their cesspools, and their depuratory branches, only date from 1836. The intestinal sewer of Paris has been made over anew, and, as we have said, it has been extended more than tenfold within the last quarter of a century.

Thirty years ago, at the epoch of the insurrection of the 5th and 6th of June, it was still, in many localities, nearly the same ancient sewer. A very great number of streets which are now convex were then sunken causeways. At the end of a slope, where the tributaries of a street or cross-roads ended, there were often to be seen large, square gratings with heavy bars, whose iron, polished by the footsteps of the throng,

gleamed dangerous and slippery for vehicles, and caused horses to fall. The official language of the Roads and Bridges gave to these gratings the expressive name of Cassis.[60]

In 1832, in a number of streets, in the Rue de l'Etoile, the Rue Saint-Louis, the Rue du Temple, the Rue Vielle-duTemple, the Rue Notre-Dame de Nazareth, the Rue Folie-Mericourt, the Quai aux Fleurs, the Rue du Petit-Muse, the Rue du Normandie, the Rue Pont-Aux-Biches, the Rue des Marais, the Faubourg Saint-Martin, the Rue Notre Dame des-Victoires, the Faubourg Montmartre, the Rue Grange-Bateliere, in the Champs-Elysees, the Rue Jacob, the Rue de Tournon, the ancient gothic sewer still cynically displayed its maw. It consisted of enormous voids of stone catch-basins sometimes surrounded by stone posts, with monumental effrontery.

Paris in 1806 still had nearly the same sewers numerically as stated in 1663; five thousand three hundred fathoms. After Bruneseau, on the 1st of January, 1832, it had forty thousand three hundred metres. Between 1806 and 1831, there had been built, on an average, seven hundred and fifty metres annually, afterwards eight and even ten thousand metres of galleries were constructed every year, in masonry, of small stones, with hydraulic mortar which hardens under water, on a cement foundation. At two hundred francs the metre, the sixty leagues of Paris' sewers of the present day represent forty-eight millions.

In addition to the economic progress which we have indicated at the

beginning, grave problems of public hygiene are connected with that immense question: the sewers of Paris.

Paris is the centre of two sheets, a sheet of water and a sheet of air. The sheet of water, lying at a tolerably great depth underground, but already sounded by two bores, is furnished by the layer of green clay situated between the chalk and the Jurassic lime-stone; this layer may be represented by a disk five and twenty leagues in circumference; a multitude of rivers and brooks ooze there; one drinks the Seine, the Marne, the Yonne, the Oise, the Aisne, the Cher, the Vienne and the Loire in a glass of water from the well of Grenelle. The sheet of water is healthy, it comes from heaven in the first place and next from the earth; the sheet of air is unhealthy, it comes from the sewer. All the miasms of the cess-pool are mingled with the breath of the city; hence this bad breath. The air taken from above a dung-heap, as has been scientifically proved, is purer than the air taken from above Paris. In a given time, with the aid of progress, mechanisms become perfected, and as light increases, the sheet of water will be employed to purify the sheet of air; that is to say, to wash the sewer. The reader knows, that by "washing the sewer" we mean: the restitution of the filth to the earth; the return to the soil of dung and of manure to the fields. Through this simple act, the entire social community will experience a diminution of misery and an augmentation of health. At the present hour, the radiation of diseases from Paris extends to fifty leagues around the Louvre, taken as the hub of this pestilential wheel.

We might say that, for ten centuries, the cess-pool has been the disease of Paris. The sewer is the blemish which Paris has in her blood. The popular instinct has never been deceived in it. The occupation of sewermen was formerly almost as perilous, and almost as repugnant to the people, as the occupation of knacker, which was so long held in horror and handed over to the executioner. High wages were necessary to induce a mason to disappear in that fetid mine; the ladder of the cess-pool cleaner hesitated to plunge into it; it was said, in proverbial form: "to descend into the sewer is to enter the grave;" and all sorts of hideous legends, as we have said, covered this colossal sink with terror; a dread sink-hole which bears the traces of the revolutions of the globe as of the revolutions of man, and where are to be found vestiges of all cataclysms from the shells of the Deluge to the rag of Marat.