

#### Increase of Population in France.

The late Census, which is taken at the end of every five years, shows that the population of the 89 French departments amounts to 37,382,225 inhabitants, to which are to be added 90,000 troops employed in foreign countries. The previous census set down the population for the 86 departments of which France was then composed, at 36,039,364 inhabitants. Deducting 669,052 inhabitants for the provinces annexed to the Empire, the increase of the population since the previous census 673,802 inhabitants, or 1.96 per cent. The increase from 1846 to 1851 was only 382,684, or 1.8 per cent. This may be accounted for by the revolution of 1848, which produced an unfavourable effect on the general prosperity of the country. The deficient harvests likewise during that period were unfavourable to the increase of population.

#### The Inside of a London Sewer.

The *Daily News* furnishes the following description of the remarkable works now in course of completion for carrying off the sewage matter of the metropolis:—The grand reservoir, which is in course of construction, is six acres in extent, and connected with it are three series of channels, one above the other, the lowest one bringing down sewage from the sewer to the pumping well; the upper channel conveys it, after being pumped up, into the reservoir, and the middle one carries the sewage from the reservoir into the river. The visitors were first conducted down many steps to a long arcade of brick, well lighted with candles, and this is intended to carry off the storm waters, in the event of an overflow, direct into the river. It is eight feet below low water. Passing from this another arcade was reached; this is the main culvert; taking the sewage to the east pump, and there is a similar one going to the west pump. These culverts, as they are called, are sufficiently large for a railway train to run through, and a regiment of Life Guards might canter through them easily. Following the labyrinth we next come to an immense portcullis of iron, which opens on massive hinges secured in solid masonry. These are to act as sieves or strainers for the sewage before it reaches the pump well. Dead dogs and cats, and all the coarse and miscellaneous kind of refuse which find their way into the large sewers, will be arrested at these massive portals, and will be deposited in a large stone prison, the bottom of which is scooped or curved. Within these stone wells a huge wheel filled with buckets, will constantly revolve, acting as a dredging apparatus to drag up out of this dark abyss, called the "filth hoist," all the sediment and arrested particles brought down by the sewer. They will be deposited by the revolving buckets in the "filth chamber," whence they will pass into the river at low tide. Passing the gates we enter the pump-room, the bottom of which is 17ft. below low-water mark. Here will be four engines of 125-horse power each, which will pump continuously into the reservoir. A portion of iron work for the reception of these engines is placed in position. Following the course of the culverts, we next pass into the reservoir which is to hold the sewage water until it can be discharged into the river. This, as we have just

stated, covers an area of six acres. It will have a roof formed of brick arches, resting upon brick piers, and its floor is Portland stone. These six arches of immense cellarage, when full, will contain twenty millions of gallons. It is not yet roofed in, but the piers are nearly all completed, and they stand in long rows, crossing and intersecting each other, a perfect forest of brick-work. Twice in the day the outlet from this vast receptacle will be opened to the river, and for two hours at the ebb after high water the contents will flow into the river. Though the pumps will send in continuous streams of sewage, the reservoir will only be cleared out twice in the day. With a view of preventing any sediment accumulating in the bottom, there is a large tunnel on the land side, which, when the reservoir is full, will also be filled with water, and as soon as the reservoir has poured its contents into the river, the flood-gates of this tunnel will be opened, and its waters rushing out will wash away the deposit. We may add that the reservoir will be divided into three compartments, so fitted with sluices, and penstocks, and other contrivances, as that each may be used separately as well as together, and afford facilities for repairs when needed. Passing to the next stage, we proceed along another road of similar size to that already traversed, brick sides with iron girders carrying the brick roof, and which forms the main culvert delivering the sewage from the reservoir into the river, through a series of arched openings of about four feet in height.

#### Uninflammable Stuffs.

On this important subject the French Academy of Sciences have received a report from MM. Payen, Velpean, and Rayer, in which M. H. Chevalier's Paper sent into the Academy on the 25th of January last, is discussed. From this report it appears that only three salts have hitherto been found that may be successfully applied to the purpose in question, viz., that of preventing ladies' dresses from catching fire. There are many other salts that would do the same, but not without spoiling the dye, or the gloss, or the texture of the stuff, &c. Of the three in question, the sulphate and phosphate of ammonia have the inconvenience of being decomposed by the heat of a smoothing-iron; but they are applicable in those manufactures where stuffs are stiffened by the action of hot air or cylinders heated by steam. They exercise no action upon either the thread or the colour of the stuff. The phosphate of ammonia may be mixed with half its weight of hydro-chlorate of ammonia. To obtain an efficacious solution, 20 per cent. of this mixture must be dissolved in water. A solution of 7 per cent. of sulphate of ammonia produces the same effect, and is therefore the most economical salt that the trade can employ. But in those cases in which the smoothing-iron cannot be dispensed with, as in linnen, for instance, a solution of 20 per cent. of tungstate of soda should be preferred. To obtain the desired effect, all these solutions must be applied to the stuffs after they have been stiffened and dried, because starch is always used in a weaker solution than that required for these salts. Acid tungstates destroy the thread of cotton stuffs, like borax, alum, and other substances previously recommended. The tungstate