

oriental household. We are presented in the same manner, with two small cups of unsweetened and unstrained coffee, and then the attendants retire, and I open my business.

Everything, of course, goes upon wheels. Sir Palaver Tweedledum himself could not make things pleasanter than the Pasha. If I wanted his signet ring (upon which he has just breathed, and has used on the spot to sign an official document I have requested of him) I might have it. If I asked for the best horse in his stable, for the loan of the wonderful fur dressing gown, or any possible thing under the moon, I might have it. Never mind. We must try the more earnestly to ask nothing incompatible with the strict principles of justice and good feeling; we must be the more fully aware of the solemn responsibility which rests at this moment upon every British public servant in Turkey. Let us turn the conversation. Let us tell the Pasha all sorts of stray odds and ends of news from Europe which he asks after so thirstily. Let us listen in return to his ideas on things in general, and on politics in particular. You and I, and Smith and Thompson, all think the same way: I would not give a button to hear any of you, I might as well talk to myself; but the Pasha has quiet ideas of his own stowed away in sly corners of his mind, such as might make the hairs of common men to stand on an end.

Well, we shall go chatting away very pleasantly for an hour or two, smoking chibouques, and laughing in our sleeves, until his Excellency has quite a colour with the invigorating exercise. Then I shall go. Again the Pasha will get up and lead me by the hand to the doorway, and then he will draw his gallant figure up to its full height, and take leave of me with the air of a prince and the cordial smile of an honest man. And tomorrow, or the day after, a gorgeous apparition of arms and gold embroidery will appear at my house, and ask when I will receive the Pasha, and I also shall answer, at once. Then the Pasha will come on horseback, with running footmen and pipe bearers beside him; and the folding doors of my little cottage will be thrown wide open to receive him. The neighbourhood will assemble with a mixture of awe and admiration. There will be a clattering of arms in the hall; and the Pasha, with his sword on his thigh, will stride through with the mien of a king. My Greek servant, who has been sent to borrow some coffee cups next door, and who has a talent for getting things in a pickle, will enter behind him, and, as I step forward with a smile and a bow to welcome my grand acquaintance, I shall see Demetri, coffee cups and all, tripped up by a cavass's sword, and falling with a mighty crash. But the Pasha never turns his head; he knows very well what a European household is in Turkey.

There is but one thing more to be noticed, and that is, that whereas I gave but thirty shillings as the official present to the Pasha's servants, I learn, when he has departed, by the exultation of Demetri and the statelier joy of Hamet, that his excellency has given mine two pounds.

PROGRESS.

ALL victory is struggle, using chance
And genius well; all bloom is fruit of death;
All being, effort for a future germ;
All good, just sacrifice; and life's success
Is rounded-up of integers of thrift
From toil and self-denial. Man must strive
If he would freely breathe or conquer: slaves
Are amorous of ease and dalliance soft;
Who rules himself calls no man master, and
Commands success even in the throat of fate.
Creation's soul is thrivance from decay;
And nature feeds on ruin; the big earth
Summers in rot, and harvests through the frost,
To fructify the world; the mortal Now
Is pregnant with the spring-flowers of To-come;
And death is seed-time of eternity.

SMOKE OR NO SMOKE.

WHY do a vast proportion of the inhabitants of London, and other dense towns, die of diseases of the lungs? Why does the spruce linen that starts pure and spotless every day from Camberwell, Camden Town, and other suburbs, reach the City and public offices smudged and grimy? Why do the Londoners pay above a million sterling a year more to their laundresses than washing costs provincials? Why do the pictures in the National Gallery constantly require to be cleaned, and (according to Cunningham and Moore), destroyed? Why are foreigners made to believe that our oldest public edifices are built of coal, and our statues carved in ebony? Why do flowering shrubs and young children transplanted from the country to within the bills of mortality, sicken and die? Why cannot the cultivators, upon back-window-sills, of drooping mignonnette and limp wall-flowers, gather a stalk without defiling their hands? Why do the sheep in the parks wear the livery of woe and appear in perpetual half mourning? Why is a smoky house placed first in the list of domestic tortures; even before a scolding wife? Why have smoke, and chimney sweepers, and chimney sweeping cost the legislature almost as many Acts of Parliament as Game, or the National Debt. Why? Because the eight hundred thousand domestic chimneys, and the uncounted factory chimneys of London are not made to consume their own smoke, in spite of Lord Palmerston.

The first and most important of the questions asked above is answered by all the others: the great destruction of life from pulmonary disease is due to the

fact that the soot which smudges the collars and chitterlings of our citizens, that ruins our finest paintings, that blackens our public buildings, that suffocates our country-born babies, that kills our plants, that fleeces our sheep of their whiteness, that blackens our faces, and buries our whole bodies in palls of fog, is also constantly passing into our lungs; and, as the cells of that organ were not intended to act as soot-sifters, any more than Sam Slick's watches were made to be bruised under sledge-hammers, they soon become the "vile prisons of afflicted breath;" and, stopping it altogether, add mournful entries to the books of the Registrar General of Deaths.

By Lord Palmerston's Smoke Abatement Act, all furnaces in London must, after the first of August next, be so constructed or altered as to consume their own smoke; but it has been stated that compliance with the Act will be next to impossible. To test the accuracy of this prediction let us see not only whether smoke is destructible, but whether it cannot be converted into fuel. In order to solve the problem, look at a gas-light: see how brightly and clearly it burns, yet the carburetted hydrogen which feeds the flame may have been smoke as dense and as black as that which the river steamers pour over you whenever you have occasion to cross London Bridge; for, every addition of coal that is made in the retort (or still) at the gasometer first gives off smoke, which becomes inflammable gas by the action of increased heat, just as the smoke of a domestic fire which is generated when first coal is put on, becomes flame when there is a bright fire. Smoke, therefore, which on cooling becomes soot, becomes, when heated to more than six hundred degrees of Fahrenheit, inflammable gas. Every wreath of smoke that curls up a chimney is so much wasted fuel; and, when we know that in the regular manufacture, one pound of coal suffices to make four cubic feet of luminiferous gas, we can easily believe Count Rumford's statement that five-sixths of the ordinary heat of an English fire goes up the chimney.

The way to destroy smoke, then, is simply to burn it; and the heat required to do this being very great, it seems easier to destroy smoke in a furnace than in a grate. Among the most effectual plans hitherto adapted to furnaces, are those by Messrs. Jucke, Hall, Hazeldine, and Lee Stevens. Three of these systems are based upon the effectual expedient of not putting on too much coal at a time; and the supply of fuel in small quantities is so regulated by machinery, that it becomes almost instantly heated to the non-smoking degree. The other plan is that of projecting a streaming wall of hot atmospheric air against the smoke in its passage from the fire to the chimney, and so converting it into an inflammable gas. At the back of the fire a plate

of iron faced with fire-brick is so placed nearly upright, as to reach from the ashpit to the crown of the furnace, at the back of it, but in front of the mouth of the chimney. This plate eventually becomes intensely heated; and the air, rushing under the bottom edge of the plate in the ashpit (where a space is left for it to enter), becomes inconceivably hot before it reaches the top, where it meets the dense gases passing over the upper edge of the plate. The oxygen contained in this heated air attains, by expansion, a great affinity for the carburetted hydrogen and other combustible gases that are flowing off from the fire; and, by this means, such of the carbonic gases as would otherwise pass wastefully away in volumes of opaque smoke, are perfectly united, and completely perform the function of fuel by burning in clear, white, and elongated flame, whose caloric is rapidly absorbed by the heating surface of the boiler, copper, pan, still, or other boiling, steam-producing, or evaporative vessel to which it is applied. This is Mr. Lee Stevens's plan, and it has the great advantage of requiring no machinery; so that no inattention or unskilfulness of the stoker can affect its action. We have witnessed and tested its efficacy at the office of the Times newspaper, at the famous blacking mart of Day and Martin, and at the great sweetmeat factory of Hill and Jones. With necessary attention the other inventions perform their functions thoroughly, and we have seen them also in such effectual operation as to leave no doubt that the smoke nuisance from factories and steam engines can be utterly abated.

But, supposing the Act of Parliament to be complied with by all the tall chimneys of the metropolis, before we can count upon a clear atmosphere, there will be an enormous balance of short chimneys belonging to some eight hundred thousand domestic houses, to deal with. And here we turn to Dr. Arnott; whose simple and ingenious improvement upon Cutler's grate we can verify is even more efficient for domestic use than the expedients we have described are for steam furnaces. We have already explained that smoke is generated when coal is first put on, from imperfect combustion. Dr. Arnott never puts coal on, and therefore his fire never smokes. He pushes it up. He does not smother the fire by pouring fuel upon the top, but causes fuel to ascend from the bottom. Neither is his a new grate; but simply a receipt for making old grates and chimneys smokeless: take out the bottom of your grate, fix close under the void an open iron box, six or eight inches deep, with a moveable bottom; let the bottom of the box be supported by a piston-rod, fastened to the hearth, so that, by means of the poker, it may be pushed upwards at will: fill the box with coal enough to last the whole day—say from twenty to thirty pounds' weight—then light your fire in the ordinary manner, upon the

black coal which now forms the bed of the grate. As the fire burns down, lift up the bottom of the box by the application of the poker to certain holes or catches in the piston, and you will enjoy a clear, bright, smokeless fire until the bottom is pushed up into the fire, to denote that the box is empty; which, in well-regulated families, will not happen until bed-time. When you want to put the fire out, remove most of the red-hot lumps; for, by this improvement, the smallest coal cakes into lumps. When you don't want to put it out, and to keep it gently alive all night, do nothing. Even after nearly all the coal which is surrounded by the fire bars has been consumed, the air will dive into the coal-box and keep the fire there gently alight—like a torch burning from the top downwards—until almost all the fuel is consumed, and thus the fire will remain burning for a whole day or night, without stirring or attendance, yet it is ready to burn up actively at any moment when the piston is raised. The fire never need be let out all the winter, and that with a considerable economy of fuel.

It will be perceived that no air can pass through the fire from the bed of the grate—a defect as respects draught, but a merit in preventing the body of coal in the reservoir from igniting before it reaches above the lower bar. The defect is converted into a merit, in the chimney, which is gradually contracted and fitted with a throstle-valve having an index outside, by which the size of the orifice inside can be regulated so as to increase or diminish the draught. Any grate can be fitted with Dr. Arnott's expedients for from twenty-five to thirty shillings, and any person who may have the good sense to wish to adopt them, had better procure the Journal of the Society of Arts for the twelfth of May last, and read a report of the full, clear and easily understood explanations, which Dr. Arnott publicly and most liberally gave at a meeting of the Society, without reserving to himself any sort of patent right or advantage whatever.

Mr. Julius Jeffries, another leader of the legions of smoke-haters, has made a proposition, which must be mentioned. He says, remove all the gas-factories to a distance from London, bring up the carburetted hydrogen in pipes, and use it to heat coke in your grates. That is to say, take your lumps of coal to the gasometer; extract the gas (which send travelling per pipes), send it up to London in the form of coke, and then burn the two together, to make a cheerful fire. Dr. Arnott and Mr. Jeffries differ only in this: the former manufactures his coke and cheerful fire all at once on the premises, while Mr. Jeffries puts his combustibles out to make.

There is no reason whatever why the atmosphere of London, and other great towns, should not be as clear, the public buildings

as white, and the linen a great deal cleaner than the air, the monuments, and the linen of Paris, or Munich, or St. Petersburg.

TATTYBOYS RENTERS.

THAT gregarious tendency common to men, as well as to the inferior orders of animation, that leads the devouring lion to howl in company with the Leo vorans, minnows to flow together into the net of the snarer, herrings to be taken in shoals of thousands, blacklegs to horde with blacklegs, lords with lords, children with children, birds of a feather, in fact, human as well as ornithological, to flock together—has brought a considerable number of eccentric parties together in Tattyboys Rents. For the Rents being decidedly eccentric of themselves as Rents, it was but natural and to be expected that at least one party of eccentric character should, in the first instance, come to reside in them. After this it was not of course surprising, carrying out the birds-of-a-feather theory, that other eccentric parties should come and join party number one; and the glorious and yet natural result has been, that we possess in Tattyboys Rents perhaps as queer a lot of parties as you could find (though we are perfectly solvent) out of Queer Street.

I strove so hard, remis atque velis, in the first instance, to give you as sufficient an idea of the Rents, architecturally speaking, that I had little space to dilate on the characteristics of the inhabitants. You might have been able to discern something like eccentricity in Miss Tattyboys, but I cannot bring her forward with anything like certainty as a character: she is so unsubstantial, so mythic. As it has been often and bitterly complained of by her tenants—you don't know where to have her. But the Rents can boast other characters about whom there is no mistake, who stand out in bold and well-defined relief, and who, whether tradesmen or dealing at one another's shops, are emphatically rum customers. Will you allow me to introduce you to a few? You will? Mumchance, stand forth!

Right up at the further end of the Rents, where the thoroughfare is blockaded by the high frowning walls of Smelt and Figg's foundry, dwells, in a house—one of the dingiest, shabbiest, queerest houses in Tattyboys Rents—P. R. Mumchance. Would you know for what stand the initials P. R. For Peter Robert, haply? For Peregrine Reuben, or Pietro Rolando, or Paul Ralph? Not at all. Mumchance's father (commonly known as Old Nutcrackers, from the strong development of his facial muscles) was a great admirer—some say friend and creditor—of that virtuous, illustrious, and magnanimous prince, the penultimate possessor of the British throne; and young Mumchance, now of that ilk, being born about the year eighteen hundred and eleven, was christened, in a moment