



FUMIFUGIUM:

MMXI

ADVANCE WARNING
STOPPING AT THE RED LIGHT
PLEASE REMEMBER
TO STOP AT THE RED LIGHT



John Evelyn was a 17th century writer, gardener and diarist. He is best known for his diaries, and was a contemporary of Samuel Pepys (another noted diarist of the time). Evelyn was a prolific writer, and his publications included works on history, religion, forestry, horticulture, architecture, and law.

Fumifugium is the name that Evelyn gave to a 1661 essay on air pollution in London that he sent to King Charles II. Evelyn was enraged by the heavy smog that often fouled the air in his home city. In *Fumifugium* he aimed to document the impacts of the smog on people's health and the environment. He also put forward some solutions to help resolve the problem.

Credits

Fumifugium was translated into modern English by Anna Gross and Justine Shaw. Environmental Protection UK is indebted to them both for their invaluable assistance with this project.

The document was edited by Ed Dearnley and Loveday Murley at Environmental Protection UK.

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You can visit his website at www.markpaulda.com

Design by Simon Bottrell at 7creative – future positive communications.

The original text of Fumifugium can be read at: <http://www.gyford.com/archive/2009/04/28/www.geocities.com/Paris/LeftBank/1914/fumifug.html>

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A 21ST CENTURY TRANSLATION OF A 17TH CENTURY ESSAY ON
AIR POLLUTION IN LONDON

* SENT TO KING CHARLES II BY THE WRITER JOHN EVELYN *

PUBLISHED BY ENVIRONMENTAL PROTECTION UK



Environmental Protection UK is a national charity that provides expert policy analysis and advice on air quality, land quality, waste and noise and their effects on people and communities in terms of a wide range of issues including public health, planning, transport, energy and climate.

www.environmental-protection.org.uk

The Healthy Air Campaign seeks to increase public awareness and understanding of the health impacts of air pollution and help communities mitigate those impacts and adapt to reduce them. It is led by Environmental Protection UK and supported by a growing coalition of health, environment and transport NGOs.

Get involved at www.healthyair.org.uk

FUMIFUGIUM:

OR

The Inconveniencie of the AER
AND
SMOAK of LONDON
DISSIPATED.

TOGETHER

With some REMEDIES humbly
PROPOSED

By J. E. Esq;

J. Evelyn

To His Sacred MAJESTIE,
AND
To the PARLIAMENT now Assembled.

Published by His Majesties Command.

Lucret. l. 5.

*Carbonumque gravis vis, atque odor insinatur
Quam facile in cerebrum? ———*

LONDON,

Printed by W. Godbid for Gabriel Bethel, and Thomas Collins,
and are to be sold at their Shop at the Middle Temple Gate
near Temple-Bar. M. D. C. L. X. I.

FOREWORD



You may question why Environmental Protection UK is re-publishing in 2011 a book by John Evelyn written in 1661. The simple answer is that the issue Evelyn wrote about in his 'Fumifugium' – air pollution in London – is as much of a problem today as we thought it was in the 17th century. Like Evelyn, Environmental Protection UK understands the enormous impact that air pollution has on our health, and we want to see Government at all levels take the relatively simple actions necessary to resolve the problem.

If we stepped back into Evelyn's London the city would be unrecognisable to us – the grand Victorian buildings and soaring skyscrapers that are so synonymous with London today would be nowhere to be seen, and instead we'd be faced with a rabbit warren of narrow streets, low rise houses, shops and primitive industrial premises. Our eyes wouldn't be the only one of our senses taken by surprise: our sense of taste and smell would also be assaulted by the heavy layer of pollution in the air. In Evelyn's day homes frequently burnt poor quality sea coals in their fireplaces, whilst industry and commerce belched out even more pollution into the city's smoggy air.

London had been suffering smog problems since as early as 1273 but Evelyn was one of the first people to examine the issues. In *Fumifugium* he produced the first serious attempt to document the causes, effects and possible solutions to the problem of air pollution.

Evelyn was not a scientist: he was a prolific writer whose publications included works on history, religion, forestry, horticulture, architecture and law. However his proposals to cure London's air pollution woes were clear, simple and cut straight to the heart of the problem. The first was to use cleaner fuels – the cheap sea coals used in Evelyn's day produced huge amounts of smoke when burnt. The second was to separate polluting industry from the people whose health it affects. These two solutions – using the cleanest technology available and where possible separating the sources of pollution from people – are the bedrock of all efforts to manage pollution today.

Despite Evelyn's well reasoned thinking London's leaders failed to act on the problem, and heavy smogs continued to grip the capital up until the second half of the 20th century. At this point something happened that forced our political leaders into action: the Great Smog of 1952. During the Great Smog conditions in London became so bad that theatre goers couldn't see the stage and people frequently became lost in the streets. In the shadow of the smog over 4000 people died, with the city's most vulnerable inhabitants suffering disproportionately from its impacts.

The public outcry following the Great Smog resulted in the Clean Air Acts of the 1950s and 60s which, combined with the advent of clean burning North Sea gas, removed the problem of coal smoke from the city's air.

Unfortunately though while the problem of coal smoke was declining a new hazard in the air was growing, one that is largely invisible to our eyes. This was pollution from vehicle exhausts, which grew as a problem with the expanding number of cars, lorries, taxis, vans and buses using the city's streets. Traffic remains the greatest source of air pollution in the city today. In 2010 the Mayor of London produced a study on the health effects of long term exposure to air pollution in the city. The study concluded that over 4000 deaths in London are attributable to air pollution annually, a number that eerily chimes with the number of victims of the Great Smog of 1952.

Environmental Protection UK and its partners are therefore still fighting the battle that Evelyn began, both in London and across the rest of the UK. Compared to Evelyn the tools at our disposal are far, far better. Modern scientific methods allow us to analyse the precise causes of air pollution, whilst the technical and policy tools of our modern industrial society mean that it is entirely feasible to have clean, healthy air for all to breathe in London. However, just as it was in Evelyn's time, the naysayers still say this is impossible. Tackling air pollution is too hard and expensive they say; breathing air that significantly shortens your life is just an inevitable consequence of living in an urban area.

Evelyn was not a pessimist. He wasn't just 'against' smoke: he was passionately 'for' clean air, green trees, the colour

*‘Men could hardly discern
one another for the Cloud,
and none could
support, without
m a n i f e s t
Inconveniency’*



and perfume of flowers and all the delights that urban life could give us. And urban life can indeed be delightful. London is one of the most exciting and culturally diverse cities in the world, with both a booming economy and leisure opportunities unparalleled anywhere else in the UK. But too often the residents of London and other big cities feel they need to get out of the city to enjoy a clean, healthy environment. In the 21st century this really shouldn't be the case.

Next year the eyes of the world will fall upon London as the city hosts the 30th Olympic Games. Elite athletes more than anyone else need clean air to breathe – oxygen from the air is a fundamental building block of athletic performances that push the very boundaries of human achievement. With the final countdown to the Olympics underway, now is the time for our political leaders to implement John Evelyn's vision of a city rid of the menace of air pollution. To do so they need to put a modern spin on Evelyn's simple solutions by using the cleanest technology available, separating pollution from people and finally encouraging people to make the simple changes to their behaviour that can reduce their impact on the environment. It is for this reason that we invite them to read this republication of 'Fumifugium', and take stock of the fact that Evelyn's words have as many lessons for us today as when he first put pen to paper 350 years ago.

James Grugeon

Chief Executive
Environmental Protection UK

August 2011

A note on 'Fumifugium'

Readers are reminded that Fumifugium is a 17th century document, and some of the views commonly held at the time may now be considered offensive. This modern translation of Fumifugium is in no way representative of the views of Environmental Protection UK.

TO
THE KINGS MOST SACRED
MAIESTY.

SIR

IT was one day, as I was
in Your MAJESTIES
at White-Hall
The (sometimes the he
my self with the Sight of Your Ill
rious Presence, which is the
Your Peoples hearts) that a
tuous Smoake issuing from one
Tunnels near Northumberland-House,
and not far from Scotland-yard, did so
invade the Court; that all the Rooms,
Galleries, and Places about it were
fill'd and infest'd with it; and that to
such a degree as Men could hardly



TO THE MOST SACRED MAJESTY, THE KING

Sir,

One day, while I was walking in your Majesty's palace, where I sometimes come to enjoy the sight of your magnificent presence, I saw a ghastly billow of smoke coming from one or two tunnels between Northumberland House and Scotland Yard. It was so thick that the rooms, galleries and palaces were completely filled with it and people could hardly see each other for the cloud. Indeed, they struggled to even stand up. At that time I was not aware of all the things which have since absorbed my attention and concern, but I was angered to think of the great problems it would cause your sacred Majesty, as well as the possible hazard it would be to your health. This anger is what led me to write these papers.

Your Majesty, who adores magnificent architecture, gardens and art, must wish to be free of this monstrous annoyance as nothing can appear splendid or beautiful when it is around. Remember also that the Princess, your sister, complained about the effects of the smoke on her chest and lungs while staying in your palace. I can only guess that you, who is used to the fine air from other countries, must share her dislike of this evil epidemic which brings danger to your people and dishonours your Imperial position.

In this short text I'd like to suggest a means of removing this nauseating smoke. This will make your palace and this city one of the sweetest and most splendid places to live in the world and can be done with almost no cost to you. If the plantations around the town are improved, they will produce greenery which will lend its wonderful scent to your palaces and make them seem like they have been magically transported to the happy parts of the Arab world which lie amongst shrubbery and precious spices.

Any person who has noticed the scent of orange-flowers on the Genoan shores, the rosemary blossoms from the coast of Spain, or the scent of fragrant roses which travels from Fontenay all the way to Paris, will agree to my suggestion. I can list many plants which are common to our country and climate whose wonderful fragrance would be thoroughly enjoyed by our senses whilst also greatly improving the quality of the air in London. This can be achieved without inconveniencing the landowners in surrounding areas. I shall go into greater detail about this later in these pages if God permits me to finish them. I will not continue further on these matters therefore, and only ask you to forgive me for taking up so much of your time

SIR,

Your Majesty's ever loyal, most obedient subject and servant.

J Evelyn

* 'To the Reader'

I do hope you receive this message kindly, as it is your happiness and health that I have in mind. I am, and often have been, very unhappy with the English public services that seem to be of a far worse standard than our neighbouring countries. However, now that our generous and public-spirited King has, by the grace of God, been returned to us we can look forward to our country being restored to its old splendour, and to enjoying the same health care as our neighbouring countries. I have made this proposal for refining the quality of air in London because I believe that we should do whatever we can to enhance the honour of our nation that is capable of such greatness. It troubles me that the health and happiness of so many people should suffer from the greed of a few in a city that contains enough to make its people the happiest on Earth. Money has blinded people to the thing which keeps them alive and which can, for their own sake, be improved so easily. True happiness can only be achieved through a cheerful and healthy life, not riches. Non est vivere, sed valere vita: It is not to live but to be strong in life. It seems absurd that men, who owe their lives to air, are not able to breathe it freely, but instead are allowed to live in misery. The people of London are haunted in their daily business by a dreadful smoke that causes many health problems. And yet they do nothing.



*'That this Glorious and Antient
City, which from Wood might be
rendred Brick, (like another Rome)
from Brick made Stone and Marble;
which commands
the Proud Ocean
to the Indies, and
reaches to the farthest
Antipodes, should
wrap her stately head
in Clouds of Smoake
and Sulphur; so full of
Stink and Darknesse,
I deplore with just
Indignation.'*

It fills me with righteous indignation that this glorious and ancient city, which could rival Rome itself in grandeur, and whose influence can be felt from India to the furthest stretches of this world, should choose to engulf itself in clouds of noxious smoke and sulphur. In particular, attention needs to be paid to the overly extravagant, misshapen and congested buildings, and to the streets which, like a labyrinth, are narrow and hard to use in the busiest areas. The uneven paving and excessive guttering that soaks the streets after rain must also be addressed; the monstrous piles of wood, coal, boards and other coarse materials which clutter the beautiful and noble areas of the city ought to be removed to the riverside, before being transferred to the areas that need them. Additionally, embanking the river would reduce erosion on the London side, making it both healthier and more useful. These are the problems which our great city contends with every day.

And yet it is possible to see the glimmer of a brighter future. Things can improve with the help of a King who is willing to be a father to this country, and with the aid of a government that follows his advice and is only interested in the public's good. No other policy will make their legacy glow brighter and it is this alone that will ensure our future happiness. Medals and inscriptions have immortalised those who have helped the public in the past, either through the repairing of a dilapidated bridge, or through paving the roads or draining the marshes. Their fame has been long lasting and has been passed from generation to generation. But through following this advice it is you, our dignified King Charles and our noble statesmen that will outlast them all, for you will live in the eternal and everlasting record of our hearts.

The Inconveniences
of LONDON

PART I:

ency of the Smoak
dissipated, &c.







It is not without reason that several philosophers have described air as the 'Vehicle of the Soul' as well as of the Earth. It is clear that our bodies are frail and dependent upon air not only for the respiration that motivates our organs, but also to heighten the spirit to religious reverence. However, we will not look too closely at this divine reverence, preferring instead to examine the problem of air pollution as it affects us in our daily lives and specifically in relation to London and its surrounding areas.

It could be claimed to be a great paradox that air itself is a potent force of rebellion - indeed if you examine the northern regions of Europe where the air is thickest you will find they are very easily influenced in both religious and state matters. This will be clear from a simple exercise: place the foot of a compass on the North Pole and then extend the arm to 50 degrees latitude and then create a circle. Examine the histories of the countries enclosed in that circle and you will find proof of the previous assertion. If you contrast the character of the inhabitants of this area with that of the people who live nearer to the tropics, where the air is of a purer and more delicate quality and the weather is less changeable, you will see the contrast.

But it is not my desire to produce a treatise on the effect of different air on the temperaments of the inhabitants of different areas. Whether air is cold, warm, humid or perfectly temperate is of little consequence in relation to the purity of the element. I am more concerned with the pollutants in the air, how they come to be in the air, and the effect of them on the people that survive upon that air.

Nevertheless, it may be useful to describe air that is comparatively pure. Air that is clear, fluid, sweet smelling and has a gentle breeze can be seen to be good and pure air. Similarly it should be not so hot as to produce sweating or faintness, nor so cold as to cause shivering and stiffness, it should neither dry out and wrinkle, nor drench or soften. Although warmth can be seen to sharpen the wits it also has a weakening and trivialising

effect. Thus it is that Hippocrates declares people from Asia to be cowardly and effeminate although of an imaginative nature. If the air is cold and sharp, as in the Scandinavian countries, it creates a hard and robust body, although the heat of their bodies is compounded and heightened by the cold air of the atmosphere, creating fierceness and stupidity. In general air that is drier is more beneficial to the health as it is neither too hot nor too sooty, neither of which aid long life, (as Avicenna has shown in the short-lived Ethiopians). Moist air is just as bad as hot or sooty air, as it has an overly high content of water making it equally susceptible to pollution and, therefore, damaging to health. Although moist air does tend to produce fairer and softer skinned people who tend to live longer, it is not as beneficial as a drier climate where the people are healthier in general. However, the dirty and stagnant air that arises from marshy places is, of all types of air, the most vile and deadly¹.

However, in all these different airs *Mores Hominum do Corporis temperamentum Sequi*: The behaviour of men is influenced by their physical natures, is for the most part so true an observation that it would be possible to produce a whole catalogue of proofs, even if the fact were not so commonly accepted as to have become proverbial. It is clear that the air that we breathe can affect or cloud our sensibilities making us obnoxious. This led the legendary physician Hippocrates to shrewdly term a clear, pure air 'The interlocutor and interpreter of Prudence.' Our heavenly spirit can be greatly affected by the air that surrounds us all; for although air, in its essence cannot be destroyed, it is susceptible to infinite mutations that can both improve and worsen its quality, leading to an almost incalculable number of unforeseen effects.

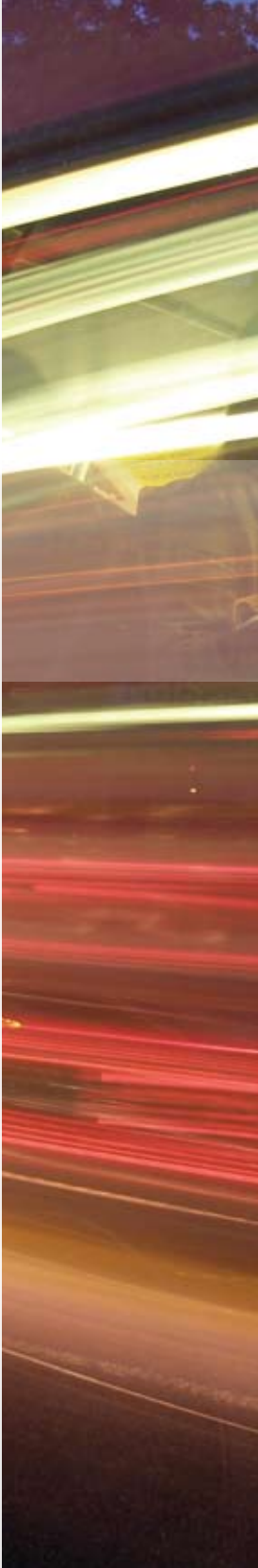
Additionally, it is vital to recognise that we feed our body food at certain times and stated periods of the day, but the air that we breathe and the elements in that air are perpetually flowing into our body whether we are awake or asleep - Est enim in ipso Aere occultus vitae cibus: For the food of life is concealed in the very same air we breathe.

[16.] FUMIFUGIUM: MMXI





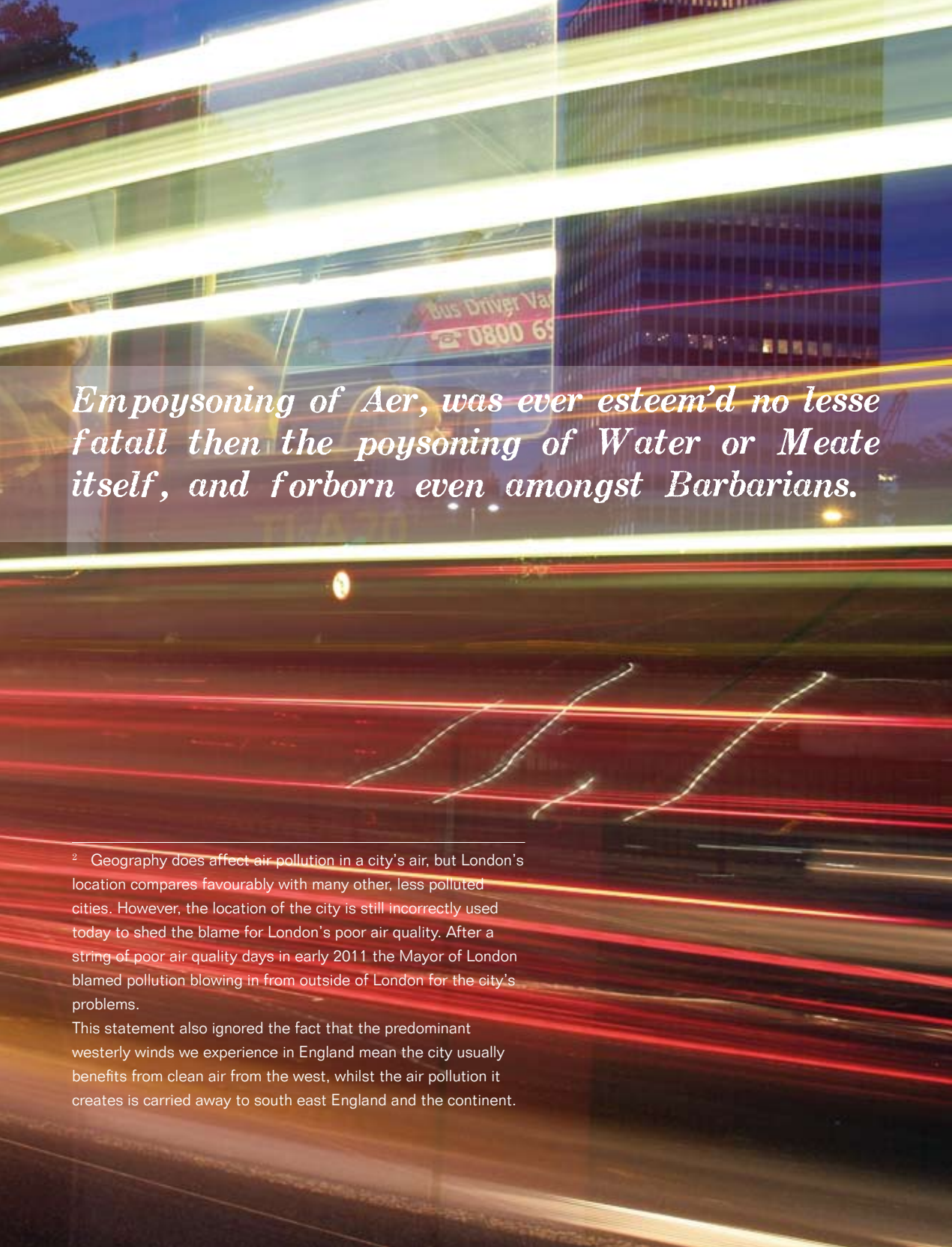
¹ Evelyn correctly identifies that the quality of the air has an enormous impact on our health and well-being, impacts that we now understand far better due to modern scientific research. The casual racism that Evelyn displays in this passage is, however, something that's best left in the past.



It is clear, therefore, that we should give more attention to the contents of this constant and hard-working food than to the very meat we feed upon. The most educated and moderate of men are, after all, nourished and satisfied by a small and indifferent amount of that food. Additionally, the food we eat takes time to reach our vital organs giving the body time to filter out its impurities. Breath, on the other hand, is immediately transmitted through us, moving so quickly from the lungs to the heart that it speedily permeates the whole body. Essentially, just as pure and clean air is able to clarify and refine the blood, cheering the soul and aiding digestion, dark and dirty air disturbs the body and makes it unable to rid itself of contaminating agents. Furthermore, dirty air can damage the mental faculties, just as pure air is able to promote rationality of mind, and is capable of making men wonderfully healthy and wise. This is the reason that poisoning the air has historically been regarded as no less fatal than poisoning water or food and was forbidden even amongst the Barbarians. Infections of the air have always been thought of as capable of disordering the very soul that descends from it. As is known, the air in some regions, such as Ireland, is even thought to be capable of acting as an antidote to poison. Additionally, in some air carcasses do not readily decompose, while in others they rot instantly.

Now, I don't doubt that the ancient founders of our great city took these ideas into account long before the writer Vitruvius. If we examine the excellence of London's situation it becomes apparent that it was developed with the aim of conferring every possible advantage of not only profit, but also health and pleasure. Therefore, if there are any elements that are damaging to health and pleasure in the city, then we can plainly see that they are a result of external and accidental factors, and not due to any natural problem with the location². As such, it is evident that it would be very easy to rectify the situation, as I will show.

The city of London is built upon a beautiful and distinguished plot of land. The well-kept river of the North side of the city slopes gently toward the city's palaces and fine buildings, rendering them all the more useful, magnificent and graceful. In addition to this, the vapours that are emitted by the waters of the lower grounds of the south are constantly dissipated by the sun and are carried away as soon as they are released.



*Empoysoning of Aer, was ever esteem'd no lesse
fatall then the poysoning of Water or Meate
itself, and forborn even amongst Barbarians.*

² Geography does affect air pollution in a city's air, but London's location compares favourably with many other, less polluted cities. However, the location of the city is still incorrectly used today to shed the blame for London's poor air quality. After a string of poor air quality days in early 2011 the Mayor of London blamed pollution blowing in from outside of London for the city's problems.

This statement also ignored the fact that the predominant westerly winds we experience in England mean the city usually benefits from clean air from the west, whilst the air pollution it creates is carried away to south east England and the continent.

Added to this is the fact that the soil of the city, as well as of the land for several miles around, is gravel and is plentifully and richly irrigated with water which feeds the fountains in every street. Even Rome herself was not more abundant in this 'liquid ornament' which provides pleasure, as well as nourishment and refreshment, for the inhabitants. I will abstain from continuing about the benefits of the land and sea that this, the world's greatest city, enjoys. That task belongs to an orator or poet and is not a part of my discourse. But I will add that if this good city should demand what is due to it and wishes to merit praise, then it is vital that she be relieved from anything that makes her unhealthy, offends her or eclipses her great attributes. And what is the culprit? It is a hellish and dismal cloud of sea coal that not only hovers over her permanently but as the poet Vergil said:

'Conditur in tenebris altum caligine Caelum:

The high heaven was hidden in darkest clouds.'

This cloud is so inextricably mixed with the naturally wholesome and excellent air that the inhabitants can breathe nothing but thick, dirty, smoggy air. This makes them vulnerable to thousands of diseases, corrupting their lungs and disordering their bodies, so that catarrh, coughs and tuberculosis³ are more prevalent in this city than any other in the world.

I shall not here describe at length the nature of smoke or emissions, which vary in respect to the different materials being burnt, for they are generally known to be noxious and unhealthy. However, what is certain is that, of all the common and familiar materials that emit pollution, the excessive demand for, and use of, sea coal in the city of London exposes it to one of the foulest criticisms and reproaches that can be aimed at such a noble, and otherwise incomparably magnificent city. The problem is not caused by smoke from kitchen fires, as this is weaker and is, therefore, easily dispersed and scattered so as to be hardly discernible. Rather, the problem is caused by the works of brewers, dyers, lime-burners, salt and soap boilers, and other private trades; the emissions from a single one of these evidently pollutes the air more than all of London's chimneys put together.

³ Modern research continues to draw links between air pollution and our health. Research published recently by the Aphekomp group of scientists has shown that living near roads travelled by 10,000 or more vehicles per day on average could be responsible for some 30% of all new cases of asthma in children, and of chronic obstructive pulmonary disease and coronary heart disease in adults 65 years of age and older. There are many such roads in London.



⁴ Unfortunately the air is no longer serene in many other parts of the country. To date nearly half of all UK local authorities have declared an 'Air Quality Management Area'; these are areas where one or more air pollutants exceed health based national targets.

And that is not in the least hyperbolic as our judges, the most sensible of all men, would claim. Whilst this smoke belches from their sooty jaws the city of London is more akin to the face of Mount Etna, The Court of Vulcan, the island of Stromboli, or even the very suburbs of hell, than an assembly of rational creatures and the Imperial seat of our incomparable Monarch. For, although in other places in England the air is serene⁴ and pure, in London the sulphurous clouds are so dense that the sun itself has trouble penetrating it and the weary traveller sooner smells than sees the city he approaches. It is this ruinous smoke that sullies the city's glory, imposing a sooty crust or fur on all the city lights, spoiling man's property, tarnishing the plate, gildings and furniture, and corroding even iron bars and the hardest stones because of the caustic elements that accompany the sulphur. So it is that it kills more people in the city in one year than the country air could in several hundred.

'Piceaque gravatum Foedat nube diem:

Now it churns new-born clouds and befouls the daylight, weighing it down with tarry smoke.'

It is this horrible smoke that coats our churches and ages our palaces; it is this that dirties our clothes and corrupts our waters. Even the rain and refreshing dews that fall throughout the year are corrupted by this impure smoke that, through its black and persistent quality, defiles and contaminates everything that is exposed to it.

'Calidoque involvitur undique fumo: And all around is beswirled in hot smoke.'

It is this that scatters black and grimy smuts upon everything it touches, finding its way into our most secret cabinets and most precious museums. Finally, it is this that causes our favourite pictures and hangings to turn yellow, doing mischief in our own homes. It is this that is detrimental to our birds, to the bees and to the flowers, allowing nothing in our gardens to bud, grow or



ALTHOUGH
LONDON REMAINS
OUR MOST
POLLUTED CITY,
AIR POLLUTION IS
A PROBLEM ALL
ACROSS THE UK.



⁵ Air pollution produced in our cities continues to damage plant life today. The Royal Society estimates that crop damage from one type of pollutant alone

(ozone) caused £6.7 billion worth of damage to crops across Europe in 2000.



to ripen. Therefore, no amount of work will make anemones or our other favourite flowers grow in London or the surrounding areas unless they are raised in a greenhouse and carefully nurtured. It is this that means that the few, pitiable fruits that do grow have a bitter and unpleasant taste, and will not reach maturity so that they are like the apples of Sodom that fall to dust the second they are touched. A point of great interest, and one commented on by many, is that in the year Newcastle was besieged and blockaded in the recent wars coal became scarce so that many of the smoky trades had either to stop production or at least to use a lot less coal than they now consume. This resulted in countless gardens and orchards, including those even in the very heart of London, (such as those of my Lord Marquis of Hertford in the Strand, my Lord Bridgewater, and some others near the Barbican), to bear such a quantity and quality of fruits as they had never seen before or since, astonishing their owners who rightly assumed the lack of coals and, therefore, smoke to be the cause. For the air contains elements that are capable of penetrating, altering, nourishing and even multiplying plants and fruits and without which no vegetable could grow⁵. As the poet Vergil said:

'Aret ager: vitio moriens sitit aris herba: The fields are parched; the grass dries up, dying by the foulness of the air.'

So it seems Paracelsus was not wrong when he claimed that of all things only air could be truly said to contain life, for it gives life to all things. The above example should be sufficient to show how detrimental air can be to the bodies of men, and how air that prevents fruits and flowers from growing or maturing can never be fit for men to breathe.

I have sometimes observed, and not without some just indignation, that when a south wind is gently blowing, the stately home and garden of Lord Northumberland, and even as far as Whitehall and Westminster, is wrapped in a horrid cloud of this smoke. It issues from a brewery or two near the noble palace and sometimes, when coming up from the river, that part of the city looks like sea with no land inside. A similar effect is often produced when a southern wind blows, carrying the smoke from a lime kiln on the riverside over that part of the Thames and the opposite part of London, especially around St. Pauls. The air is poisoned with so thick and dark a fog that I am hardly able to pass through it because of the extraordinary stench and vapour it expels, the like of which is also to be observed around Vauxhall at the farther end of Lambeth.

⁶ Modern science allows us to, in part, answer Evelyn's question. Each of the 4,267 premature deaths due to air pollution that, according to the Mayor's Health Study, occurred in London during 2008 had an average loss of life expectancy of 11.5 years.

Now, I have already touched on the danger to the city's inhabitants of this unremitting invasion of smoke. However, some people have denied the fact that the constant inhalation of air (even if it is highly impure), may affect the lifespan and health of the inhabitants, even of natives of the city who have never resided elsewhere. As is true of all things, some people can become accustomed to living in unhealthy air. So it is (to say nothing of those who have become accustomed to a daily diet of the rankest poisons) that we read that Epimenides lived for fifty years in a damp cave, the Eremites dwelt in dens, and many now live in the fens, some are condemned to mines and others are perpetually around forges, furnaces of iron and other smoky works, and remain unconcerned with the damage their surroundings cause.

However, I persuade myself that these men do not live like this out of choice and that others would not celebrate or commend their way of life. A body afflicted with sensory deterioration could possibly exist for a miserable seven or eight years next to a sea coal fire, as the wife of a famous doctor did when following his prescription. However, we must question how much longer she might have lived and happier she may have been if she had access to cleaner air⁶. Furthermore, the famous old Par who lived in health to a hundred and fifty was not, as some have claimed, affected by the change of diet so much as the change of air, that damaged his digestion soon after his arrival in London.

There are, I must accept, certain differences in people which allow them to thrive more in some airs compared to others. However, it is evident that of those that move to London, no sooner do they arrive than they witness a stark change in their bodies; they are either dried out or become inflamed. Humours are exacerbated, their senses and perspiration become blocked, and they lose their appetite and display a general deterioration. On remaining in London, these problems are followed by the development of coughs and chest problems that rarely disappear without creating further dangerous symptoms. Should they return to their former place of residence they are restored to their usual health as soon as they enjoy fresh air again⁷.

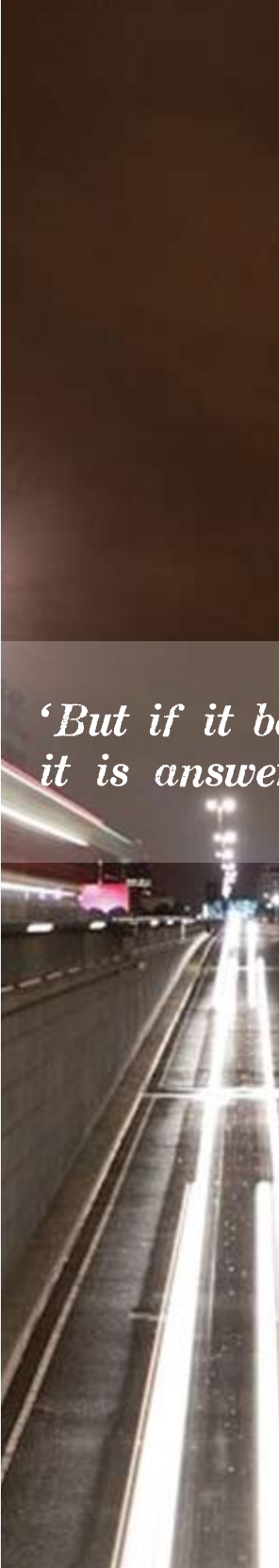
⁷ Unfortunately this is not the case and the long term effects of air pollution can be

permanent. This is particularly the case for children growing up in polluted areas: research from California suggests that these children experience permanent loss of lung function that they carry into adulthood.

It seems fitting here to mention a story that a highly educated doctor, who also happened to be a member of the Academy, told me. A friend of this doctor had such a strange aversion to the air of London that even though he was a merchant, and therefore had business in the city, he chose to live some miles outside it. Each time he came to the market, for even just an hour or two, he became so disorientated (as if truly unwell), that he was forced to take a horse (that was stationed at the entrance for this purpose), and ride as though his life depended upon it to the fields and his home. This is so extraordinary and unusual an example that it has not occurred anywhere else in Europe, except perhaps the Grotto del Cane, near Naples, the Os Plutonium of Silvius, or another similarly subterranean habitation. For disease proceeds not from a series of causes as we are apt to believe, but most of the time develops from the daily troubles which we disregard because of their familiarity. Yet how often do we hear it said (by men speaking of a deceased friend or neighbour) that he went to London and developed a great cold that he was never able to recover from?

I address all those who (during the sad confusion of recent events) have been compelled to breathe the air of other countries for some years and ask whether they do not now notice an evident alteration in their appetite and in their spirits. I especially address those who have lived for a long time in France and in the city of Paris where, contrary to the unjust rumour, the plague is as seldom seen as it is in the rest of Europe. This I attribute more to the cleanness and purity of air than to any of the causes asserted by other writers. Yet if it is suggested that the cleanest airs are the first to be polluted, I answer that they are also the first to become pure again, and therefore no person should accept this as a reason to live in polluted air. London, it must be confessed, is not the only place that suffers this pestilent pollution, but it is never clear of the smoke that accompanies it. This plague of a smoke is truly intolerable because, although it does not kill at once, it is deadly and to slowly perish is worse than death itself. Is there any other place on Earth where such coughing and snuffling is to be heard as in the churches and assemblies of London, where the barking and spitting is incessant? Need I say more?

'Hinc hominum pecudumque Lues: Hence the pestilence for man and beast alike.'



*'But if it be
it is answer*



*They objected that the purest Aers are soonest infected;
and, that they are also the soonest freed again'*

⁸ We now know that pollution can reach every part of the body. Tiny particles of pollution can cross from our lungs into the bloodstream where it is circulated around our bodies.

And where else is the cause of this to be found than in that infernal vapour that accompanies the air. The pollution fills our lungs, penetrating their very substance. As we breathe it in the vapours irritate our vocal cords, making them rough and dry so that they can neither properly contract or dilate to allow for changes in voice. Friends of mine (who are musicians and one of whom is a doctor of medicine) have often observed that in coming in to London from the country they have lost three whole notes in the range of their voices, which do not return until they return to the country. To use the Orator's words, '*Adeo enim Animantes aspiratione Aeris sustinentur, ipseque Aer nobiscum videt, nobiscum audit, nobiscum sonat:* Living creatures are so far sustained by the air they breathe, that the air itself provides our sight, our hearing and our voices.'


Whether the head and the brain (as some have suggested), or even the skin of the whole body, take in the surrounding air is greatly contested⁸. Yet, if this is the case, the importance of clean and pure air will become evident to everyone. We are well aware how much respiration is damaged when the lungs are filled with these dense vapours that are brought in the air and then mixed with the circulating blood. Our blood first works its way into the left ventricle of the heart through the Arteria Venosa, to soothe and stabilise this essential organ and precious vehicle of the soul. The blood then follows the Vena Arteriosa and reaches into the many branches of the lungs through the pulmonary lobes, after which the returning blood, mixed with polluted air, moves to the very heart itself. We should not therefore, be in the least surprised by the sudden and prodigious effects of poisonous or unhealthy air as it comes into contact with such essential organs, spirits and humours via the passage of the corrupted blood through the curious channels of the body. But this is not all.

What if, as well as containing sulphur, the air vapour that develops in great cities from the use of sea coal also contained poison? It is clear to anyone that spends a long time by this vapour that it damages the mind, just as happened to the famous Dutchman who wintered in Nova Zembla. All the doctors attributed this to such an unhealthy quality in that fuel, as well as the density of the air, which showed similar dangers to the vapours of partially burnt charcoal. But we can get even closer to the problem.

An expert doctor claims that Newcastle coal causes tuberculosis and lung disorders and diseases, not only because of the suffocating abundance of smoke, but also because of the smoke's toxicity. For all fuel that is found beneath the ground has a kind of toxic or poisonous vapour exhaled from it. Just as the vapour speedily destroys the men that dig in the mines, so too it, little by little, corrodes those who use the fuel. Therefore, the doctor claims that those diseases that residents of London are most notably afflicted by occur most frequently where the polluted air rusts the very ironwork in the streets, than where these fuel are not burnt and the air is clean.

If it is true that the vapours of the fuel do have such a venomous quality, then we need search no further for an explanation for the pestilential and epidemic sicknesses (*Epidemiorum Causa enim in Aere*: For the cause of plagues is in the air', says Galen) that have, at different times, so terribly infected and killed us. Nor should we question the infections that spread across the city as the smoke provides a universal vehicle for all varieties of diseases. Furthermore, the learned Sir Kenelm Digby, in confirmation of the Doctrine of Anatomical Effluvias and Emanations Communicated by the Air, has noted the large quantity of volatile salts that the materials burnt in London's fires produce. These salts are very sharp and are dissipated by the smoke in the air and become such a part of the smoke that we are unable to perceive their corrosive particles. However, their effects soon become apparent as they destroy everything they touch, spoiling and destroying the beautiful colours of things with their sootiness. Hence, even when rooms are tightly sealed, men return to find that everything is covered with a thin black layer of soot that permeates the furniture. It is as though it were the house of a miller or a baker's shop where the flour even gets into cupboards and boxes that are tightly closed.





This coal, claims Sir Kenelm, is in the air, dirtying the clothes which lie drying on hedges and (as we recently stated) leaving soot on the leaves so that nothing is free from its universal contamination. It is for this reason that the bleachers near Harlem prohibit by an express law (or so I am told) the use of these coals for some miles around the town. Additionally, I will discuss elsewhere how the dyers and weavers of damask and other precious silks in Florence prohibit the slightest smoky vapour whilst their looms are working. Moreover, the fact that it is mixed into the very air that we are forced to breathe means that anyone who lives in or visits London finds that all their expectoration, spittle and the like are mostly of a black and sooty colour. Yet this unpleasant soot also has a sadder effect. Through weakening the people to infections it comes (eventually) to corrode the lungs; this is a problem that cannot be cured and kills scores of people through a long and deep consumption, the proof of which can be found in the city's weekly Bills of Mortality. These are the deadly endemic diseases so particular to London. This smoke is of such a corrosive nature that if one were to hang gammon, beef, or other meat to smoke in the chimneys, (as the good housewives of the country do using sweeter fuel), it will so mummify, dry up, waste away and burn that it will suddenly crumble away to nothing.

The consequence of this (as has already been noted) is that almost half of the people who die in London do so from disorders of the throat or lungs⁹. The inhabitants are never free from coughs or persistent rheumatism, from the spitting up of abscesses and corrupt matter, the best and most unflinching cure for which is a move to the country and a change of air. Such a change, for example moving to Paris where the air is excellent¹⁰, will enable patients to perfectly recover their health. This is proof enough of the fact that we have asserted that the deadliness of the city is caused only by this intolerable and destructive occurrence. However, I hear some warning that in publishing this invective against the smoke of

⁹ Air pollution still has a significant effect on lung disease, as Evelyn recognised. However, we also now know that it has an impact on cardiovascular disease, (e.g. heart attacks and strokes) and air pollution may have contributed to 15,800 deaths due to cardiovascular causes in London during 2009.



London I risk the rejection of a whole faculty, particularly the College of Physicians, who consider it a preservation against infection, rather than the cause of the sad effects that I have described. But I have also on several occasions found that the most learned and able amongst them renounce this widely held opinion and earnestly wish for a universal purging of the air in the way that I have described. Yet, I cannot fear that any of the learned Society should think them so attacked as to be offended with me for something that benefits themselves as well as others. Since it is certain that a great many of their patients flee the city at the slightest illness, preferring to trust their health to a country doctor rather than suffer the air of London, whatever the city's other advantages may be.

As for anyone else that considers themselves of that profession and chooses to oppose my opinion, I shall easily allow him as much smoke as he desires, and much good may it do him. But it is to be suspected that there will be some who would plead in favour of the trades that makes so much work for the chimney sweeper. As I am sure of the educated and the honest, and those people whose fortunes do not depend on smoke or universal disease, I have been able to describe the problem as I see it. I do not expect that I would be in any way offended by a just and civil reply, rather I would esteem it as an honour as I know that a clever man is able to debate on any subject at all. Some have even written with praise of the diseases themselves: so Favorinus of old and Menapius since wrote about malarial fever, Pirckhemierus chose the gout, Gutherius celebrated blindness, Hiensius the louse and, to bring us closer to our theme, Majoragius the dirt. Not that I suppose these discourses to be affected but, as A. Gellius has it, *exercendi gratia* (for the sake of argument), and to show their wits, as the poet writes:

'Sunt etiam Musis sua ludicra, mista Camenis Otia sunt: Even the Muses have their lighter moments; mingled among their serious songs some leisure is allowed.'

¹⁰ Unfortunately air quality in Paris could not be described as 'excellent' today, although it still better than that of modern day London.





But to continue, I further suggest that it is not the dust and dung that is daily thrown from the houses, or indeed that which is brought in on the feet of men and horses that makes the streets of London so dirty that they are notorious. But rather it is this smoke, which rises in the daytime and is precipitated again at night by the cold and the dew, that chiefly causes it. The effect of this smoke can be observed if one spreads a piece of clean linen in a court or garden, particularly one that appears cleanest, and leaves it all night. The effect is magnified if it rains because the dirt is brought down in larger amounts in the water, so that it leaves a thin web or film of dirt on its surface. It is evident also on the bodies of those that swim in the Thames, even at some miles distant from the city. It is further seen on the hands, faces and linen of our nicer ladies who live all year in London (especially during winter) - this is indicated by the prodigious amount of almond-powder that does for the one, and soap and wearing out for the other.

Let it be observed what a sooty crust develops every year and sticks to the sides of our ordinary chimneys where this unpleasant fuel is burnt. Further, imagine if there were a solid canopy over London what a great quantity of soot would then stick to it instead of, as now, descending every night into the streets, onto our houses and waters, and being taken into our bodies.

May this discussion regarding the causes and effects of this evil suffice to show the world just how deadly this smoke is to the inhabitants of London. Further, may it encourage them to denounce it so that they may in future hope to be freed from so intolerable an inconvenience if what I will suggest next may contribute towards a happy solution.




PART II:





OXFORD CIRCUS



As the famous proverb goes, 'there is no smoke without fire'; nor is there any fire without smoke, and so it might be suggested that we use materials on our fires which burn clear and easily. It has often been claimed that the idea of providing all the inhabitants of this city with wood, would be complete madness. However, this is achieved in Paris, a city roughly the same size as London. If a law was passed for the planting and preservation of woods and forests, it would undeniably be possible to provide London with much greater quantities of wood, which would also reduce its price¹¹. This is, after all, shown to be possible and effective in much more remote places. Wood could also be brought in by sea from the northern regions of the country where there are vast and seemingly inexhaustible quantities of it.

What I propose is not nearly as difficult as this, as it only requires the removal of some businesses which are a nuisance to the city, especially those which use vast quantities of coal for production and therefore create large clouds of smoke which infest the air. These practices would not be tolerated in any other European country where health and beauty are respected. It would be very beneficial if brewers, dyers and salt-boilers, and similar businesses, were to move their trades to a safe distance from the city. Men would be able to breathe a new life, and London would be rid of what currently makes it one of the most abominable places to live in the world. As I have already said, cooking fires contribute little to the foul air in comparison to this pollution and smoke which the poet Virgil remarked, *Caelum subtexere fumo*: Veil the heavens with smoke. On Sundays, and other days when these manufacturers are not in operation, the skies are so clear that everyone must realise that all the chimneys in London do not poison the air as much as one or two of those large tunnels that

¹¹ The first rule of air pollution control is to use the cleanest fuels available – in Evelyn's day this was wood. However we now know that wood is a relatively dirty fuel, producing far more air pollution than the natural gas boilers most of us now use to heat our homes. Evelyn's proposal has echoes in modern times with the Government's Renewable Heat Incentive aiming to boost the use of wood fuel. Unfortunately air quality concerns in this scheme have not been addressed and a big increase in wood burning in our cities would have very undesirable consequences for air quality.



I propose therefore , that by
present , this infernal Nuisance be

an *Act* of this present *Parlia-*
reformed;





¹² A similar pattern occurs today – air pollution levels tend to be lower on the weekends when there are fewer vehicles on the road.

¹³ Evelyn here proposes the second rule of modern pollution control – separating pollution from people. Over the past 60 years the most polluting industries and power generation have been largely moved out of our cities into less well populated areas. Here their remote locations and tall chimneys give pollution the chance to disperse before it comes into contact with large numbers of people.

¹⁴ Green Jobs is a popular phrase in modern time, but here Evelyn beats modern commentators by 350 years in realising that pollution control can provide thousands of new jobs.



bellow smoke¹². The smoke that issues from house chimneys disperses when it interacts with even the slightest winds, whereas the great clouds of smoke that belch from the sooty throats of these monstrous buildings are so thick and large that they are not affected by even the strongest gusts. Indeed, this smoke is so heavy with soot that it falls upon the city where it disperses and spreads, making London look like Troy after the Greeks sacked it.

I suggest therefore, that the current Parliament should pass an Act to have this horrible nuisance removed, by demanding that all of those tradesmen move their equipment five or six miles away from London and below the River Thames¹³. I believe that five or six miles would ensure that Greenwich would be free from the vile and smoky air. Any less would mean that His Majesty's palace, named by Barclay *pervetusta regum Britannicorum domus*: the ancient house of the British king, would become darkened and infected during the nine months of our westerly winds. If, on the other hand, they were positioned behind the hills, no winds would be able to carry the smoke over towards the city and I strongly believe that the heat from the works would improve the air in those dry and cold mountainous regions. London, on the other hand is situated so perfectly that it does not require drier air. Some tradesmen may object on the grounds that the waters in those areas will be less useful to them, because of the high and low tides that sometimes occur; however, this is very rare and the water returns to normal at the arrival of the next tide. If the brewers are the only ones concerned, I see no problem with a few of them at least, using fresh waters that flow into the Thames. No one would consider this an unreasonable proposition if they were to think about the great quantities of goods that are transported from Gdansk, Lubeck, Hamburg, and other remote places, into Holland. However, if it is very important to them that they remain near London, the town of Bowe may act as a substitute because of the strong winds it receives. The rest however, must be moved to the furthest section of the River.

This move would provide thousands of men with jobs¹⁴ as commodities would need to be brought into the city to warehouses, which would be situated near the river for the goods' distribution around the Town. The changes can all be made very easily and at small expense. They would create priceless benefits to the inhabitants of the city that far outweigh any small and selfish objections raised by a few people. There may be further benefits to this change: the deserted buildings could be converted

¹⁵ This comment was unfortunately prophetic, as the Great Fire of London devastated the

city 5 years after Fumifugium was published. The fire started in a bakery.



into Noble Houses, for people's use and pleasure, and the magnificent River Thames could be properly taken advantage of and enjoyed. It would also reduce the risk of fire in the city, which often results from the great and perpetual coal-burning activities of these industries¹⁵.

This is also not a completely original or extraordinary thing to propose. Parliament passed an Act for reform as a result of less noxious smoke that was infesting other areas of this country (as well as France, where there were complaints about vines being destroyed by smoke issuing from the English coast). I will reproduce here this Act which was passed in the seventh year of the reign of our Majesty's grandfather:

'Anno VII Jacobi Regis: Year 7 of Jacobs (James I) reign.

'An Act against the burning of shrubs, and other forms of moorland in the counties of York, Durham, Northumberland, Cumberland, Westmorland, Lancaster, Derby, Nottingham, and Leicester; at certain times in the year:

'Many problems result in various counties from the burning of moors, and from creating fires on moorland and mountainous areas in the spring and summer time. The destruction of wild fowl and game and the thick vapours and clouds that result from these fires, affect the quality of the air and cause huge storms. This unnatural weather destroys the corn, fruits and vegetables in these regions by preventing them from ripening and reaping. The fires are often spread by the wind, and consume whole fields of corn and meadows, which greatly affects the people who own and live off the land. At other times of the year however, the moors can be burned without causing such damage to the land and air.

'His Majesty must therefore enact, with the permission and authority of the spiritual Lord, and the men of the House of Commons who are here gathered, that from the end of July no-one will be allowed to raise, kindle or begin any fire or moor-burnings in the months of April, May, June, July, August and September; in the counties of York, Durham, Northumberland, Cumberland, Westmorland, Lancaster, Derby, Nottingham and Leicester. The Act will state that any person or people who are found to have disobeyed this rule, either by confession, by the testimonies of two witnesses who swear on oath in front of two justices of peace in that county, or if they are caught in the act, should be committed to the county jail for one month without bail.

'Furthermore, let it be enacted that all who are imprisoned for this violation will remain imprisoned after the month until

they have paid twenty shillings to the church wardens, or the overseers of the parish, for the use of the poor in the county. This Act will remain in place until parliament's next session."

This is the Act. In it, care was shown to the fowl and game as well as the fruits, corn and grass damaged by the vapours which infected the air and caused storms and tempests fit to be discussed by philosophers. If care was taken for country areas where the air is generally of a better quality and which is more sparsely populated, how much more care should be shown to the city where there are so many inhabitants? Despite what might be argued against it, in the olden times, sacrifices were burnt outside the camp by the Jews and by the Romans.

HOMINEM IN URBE NE SEPELITO, NEVE URITO. It was forbidden for men to bury or burn their dead inside the city walls under the Law of the XII Tables. I believe that the presence of so many graveyards and crypts may pollute the air, as well as contaminating water supplies where pumps or pipes are nearby; such pipes should either be moved away, or regularly inspected to avoid further health risks.

'Candlemakers' and butchers' work-places are also a problem because of the horrible odours which come from the fatty substances and blood. Therefore, no cattle should be killed within the city (a rule which is in place in American towns) as the meat and candles can be brought in from other places. This would prevent cattle being driven through the streets, which is very inconvenient and dangerous. The same rule could apply for fishmongers. Erasmus wittily wrote, ***per salsamentarios nempe, inquinari Civitatem, infici terram, flumina, aeram & ignem & si qual aliud est elementum:*** For fishmongers in truth pollute the City, poison waters, earth, air, fire and whatever other elements there may be. Butchers were forbidden from killing or having their slaughter-houses within the city walls because of the Roman law, and instead they were provided with a workhouse outside of the city. ***Ne si passim vivant, totam urbem reddant pestilentum:*** For if they lived everywhere, they would render the whole city noisome. So that if the people had to choose, ***malunt habere vicinos decem Lenones, quam unum Lanionem:*** they would rather live next to ten brothels than one butcher.'

I could yet hope that our unsightly prisons and jails could accompany them, since it is my utmost wish that they also be moved to some distant area of the river. However, if the people of today are so selfish that they cannot be made to make these changes, then at least make these intolerable industries, which

A London Underground roundel sign is the central focus, featuring a red circle with a white center. A blue banner with the word "UNDERGROUND" in white capital letters is attached to the top of the sign. The sign is mounted on a black pole. In the background, there are blurred light trails from a train or subway car, indicating motion. A black metal fence is visible in the foreground, and a green floor with a white arrow pointing left is partially visible through the fence. The overall scene is illuminated by artificial lights, creating a vibrant, urban atmosphere.

UNDERGROUND




are currently situated on the edge of the river, be moved further away. They should not dare to approach the 'silver channel' which flows past the glorious palaces and brings water to the banks.

If these changes were put in place such a glorious spirit would be created amongst the inhabitants of London; a resurgence of energy would be felt. No-one can deny the change in temper caused by a clear and peaceful day and how much lazier and less humorous and friendly we are inclined to be when the sky is cloudy and the air is windy. The comparison is clear. It makes sense that we humans, who are made up of the elements, should be influenced by their state. Our temper is affected by the elements and our emotions are affected by our temper; our soul, which is connected to our bodies, cannot help but be altered by our emotions. Indeed animals, although not rational creatures, show in their behaviour that they are aware of changes in the air.

I will stop myself from continuing on this subject, which deserves large and noble reflections, as I have made a promise to show to my reader the problems and remedies for that which causes such problems and is so detrimental to the glory of our great city. I hope that my writing will cause the removal of this public nuisance. I hope that the health of our renowned King Charles, whose life we breathe in every second, and whose health our happiness rests upon, will be enough to make the parliamentary members, now assembled, work together for the fast removal of this great problem.


This change is of far greater concern than draining a swamp or beautifying an aqueduct, for which statesmen have received medals and statues. Purifying the air will deserve similar acknowledgements and will be seen as a fine achievement by our generation and others to come. You, who have houses in the city, who protect and support your wives and children in their sweet homes in the country, who educate your children here in London and have offices at Court, who study law, (in short, all of you who are involved in the basis of my request), must support me. Since I myself neither live in, work in nor frequent the city, I cannot be accused of suggesting this for my own advantage. Ladies of fashion and refinement; people who are in good health and wish to remain so; people who are in poor health but wish to recover; in short, all who respect the court, the city, public health or the environment, should support this petition. Our wise representatives should consider the environmental, as well as the political, benefits for the nation as a whole; for such a great proportion of the population lives in London that the harmony and well-being of the city will lead to the general improvement of the country.





What a new Spirit would these easie Remedies create among the Inhabitants of London? what another Genius infuse in the face of things?

¹⁶ Evelyn called for all residents of London to support his proposals to clean the city's air. In modern times Environmental Protection UK's Healthy Air Campaign is calling for people across the whole of the UK to join the fight for action to ensure clean and healthy air

 see www.healthyair.org.uk



PART III:



'There is a nice tale about a man called Sir Politic, who, in the last plague, suggested that a vessel filled with peeled onions should be sent along the River Thames, so that when the wind was blowing favourably, it would blow the infection and pollution away towards the sea. We often read about these magical cures for diseases and this myth has often caused a lot of laughter in the theatre. I mention this to highlight the difference between these old stories and what I am suggesting. There is another method that I can offer for removing the poisonous and filthy smoke and making the city one of the most pleasant and agreeable places in the world.

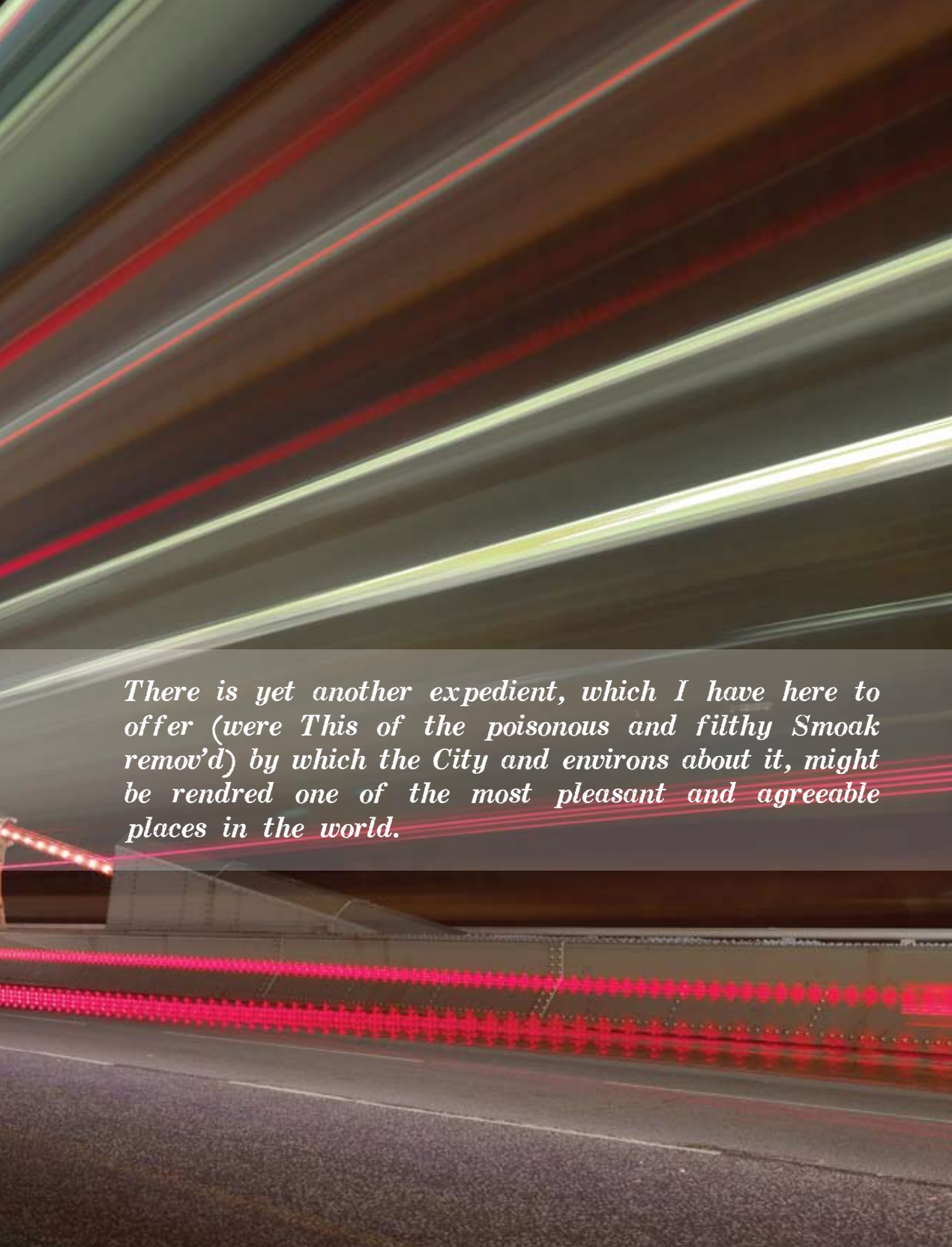
I propose that all the land that surrounds the city, particularly in the East and South-West, is made into plots of ground of about twenty, thirty, or forty acres. These plots would be separated from each other by fences and would be made into plantations, around a hundred and fifty foot deep. This process would be similar to the one already set in motion by His Majesty in the old Spring-garden of St. James's Park, and which already exists to an extent in the new Spring-garden in Lambeth. The fenced-off areas would be diligently looked after and elegantly kept. They would be planted with shrubs that would produce sweet-smelling and beautiful flowers and fill the air with their fragrant smell. Plants of this nature include the sweet-briar, Honeysuckle and Woodbines, white and yellow Jasmines, both Lilacs and Pipe trees, the Guelder-rose, the musk and all other types of roses, as well as the Spanish Broom. As well as these, the Raspberry, Bays, Juniper, Ironwood and Lavender could all be included. Above all of these, Rosemary is the most important as it is reported to give off a scent for about thirty leagues at sea on the coast of Spain. On the meadow side of the plantations vines and hops could also be planted.

'Et Arbuta passim, Et glaucas Salices, Casiamque Crocumque rubentum, Et pinguem Tiliam & ferrugineos Hyacinthos, &c:

And everywhere Strawberries, grey Willows, blushing Laurels and Crocuses, the painted Lime-tree and the blue-grey Hyacinth...'

Vergil'

The sweet smelling willow and the blossoms of the lime-tree are incomparably fragrant. Whatever is pleasant and refreshing should be planted.



There is yet another expedient, which I have here to offer (were This of the poisonous and filthy Smoak remov'd) by which the City and environs about it, might be rendred one of the most pleasant and agreeable places in the world.



¹⁷ Part three of Fumifugium essentially proposes a gigantic air freshener for London. Unfortunately like a modern air freshener all this would have done would have been to mask the smell of the pollution in the city's air rather than neutralise its health impacts. Evelyn's proposals do, however, have echoes in the modern day green belt that surrounds London.



The spaces between the plantations should be filled with beds of pinks, carnations, cloves, stocks, primroses, Alpine primulas, violets (including the white variety which are in flower twice a year, in April and August), cowslips, lilies, narcissus, strawberries (whose leaves, as well as fruit, emit a wonderfully fragrant smell), pellitory, musk, thyme, lemon and mastic, spike, camomile, balm, mint, marjoram and pimpernel and creeping thyme, which all produce the most amazing fragrances when the smallest amount of pressure is applied to them¹⁷.

Some of the fields within these enclosed areas should be planted with wild thyme, and others with beans and peas. Cabbages should not be used because of the unhealthy smell that is released from the dying stalks, and which is the reason that Hippocrates forbade them from being cultivated near great cities. Only plants that bear blossom will be permitted, as their virtuous fragrance travels great distances and they can all be sold in London. These plants would ensure that the air was continually filled with the scent of so many hedges, fragrant shrubs, trees and flowers and all the inhabitants of the city would experience the sweet and delectable variety of scents, and would benefit from the pleasant sights and places to relax. The excess parts of the plants could also be used in winter, at times of bad weather and heavy winds, to create fire, which would fill the city with a gentle smoke. These plants would offer a sense of great nobility and strength because of the beautiful image they create, the money they provide, and the security they ensure. The remaining fields could also offer better shelter and grazing land for the sheep and cattle that currently live exposed to the winds which constantly trouble them.

Gardeners should be encouraged to create plantations in these regions only, as opposed to the more dry and unprofitable soil in the upper regions that they currently cultivate. It should also be prohibited to build poor and ugly shacks near the city as they make the areas surrounding London look unpleasant and have already become a great eyesore in the grounds opposite His Majesty's Palace of Whitehall. If these houses were converted into land for plantations they would benefit the health, wealth and beauty of the people of this great city - these three most important qualities which make a place superior to all others. This is, in short, my suggestion for the improvement of the quality of the air in London. With this I shall end my writing.





* **Fumifugium** was written in 1661 in an attempt to convince King Charles II to tackle the devastating air pollution affecting 17th Century London. This modern translation, published on the essay's 350th anniversary, includes additional up-to-date material that highlights the problem of air pollution today.

With over 4000 premature deaths every year attributable to air pollution in 21st Century London, this fascinating document is now more relevant to the people and decision makers of London than ever.

The 350th anniversary of *Fumifugium* coincides with the launch of the national Healthy Air Campaign, which seeks to increase public awareness and understanding of the health impacts of air pollution and help communities avoid those impacts and adapt to reduce them. It is led by Environmental Protection UK and supported by a growing coalition of health, environment and transport NGOs.



Environmental Protection UK is the UK's oldest environmental charity, established in 1898. It has previously been known as the Coal Smoke Abatement Society and the National Society for Clean Air.

It has a strong reputation and history of working with and influencing policy-makers on local environmental issues such as air quality, land quality, waste and noise and the impact of the local environment on individuals and communities.

Over the years the charity has influenced the development of policies such as the Clean Air Act and Low Emission Zones. Today, it brings together policy-makers, businesses, local authorities and universities to enable and foster successful partnerships for environmental action and deliver community engagement and behaviour change.

www.environmental-protection.org.uk

www.healthyair.org.uk