

CHAPTER IX.

THE DOMESTIC SMOKE NUISANCE.

A FEW years ago a statement was made (which has been repeated by nearly every speaker and writer on the smoke nuisance since) that by far the greater part of the nuisance was caused by Domestic, and not the Industrial fires.

This cannot be true, for if the whole of the 40 million tons of coal burnt on the domestic fires annually were converted into smoke, and discharged into the atmosphere, even then the nuisance would be only two-thirds of that created by Industrial smoke.

The Worst Offender.—Industrial and Domestic fires are responsible for the National Smoke Nuisance, but which is the greater offender? In the "Smokeless City," by E. D. Simon and Marion Fitzgerald, Lord Newton, Chairman of the Departmental Committee on "Smoke and Noxious Vapours Abatement," says in the preface, "The relative share of industrial smoke, and domestic smoke in polluting the atmosphere has been hotly disputed, and the conclusions arrived at in the book will doubtless arouse much opposition. But in any case there can be no question as to the competence of the writers. Miss Fitzgerald, who has had valuable experience in public work, is a well-known authority on questions connected with heating, and cooking in working-class houses. Mr. Simon, Lord Mayor of Manchester at the present moment, has for some years been one of the prominent figures in the smoke abatement campaign. He is

honourably distinguished for the many services which he has rendered to his native city, he is Chairman of the Housing Committee, and also of the Air Pollution Advisory Board, and enjoys the practical advantage of being an engineer possessing works of his own. In view of the knowledge and experience of these writers, it would be idle to dismiss their case against coal fires and kitchen ranges as unfounded."

The writers state—"It has generally been assumed that the smoke nuisance was far more due to factory than to house chimneys. Not only is this incorrect, but it is the exact reverse of the truth. The fallacy had doubtless arisen because a single factory chimney pouring forth masses of smoke produces a more striking and obvious effect than a hundred house chimneys. Nevertheless, taking the country as a whole, the domestic chimney is responsible for three-quarters of the smoke, and more than three-quarters of the damage."

Sir Napier Shaw, head of the Meteorological Office, concludes that domestic "smoke is responsible for about two-thirds of the smoke problem."

The statement by the authors of the "Smokeless City"—"That 75 per cent. of the National Smoke Nuisance is caused by the domestic fire" is the exact reverse of the truth, as proved by the following figures. Experts are agreed that about 50 per cent. of the coal consumed on the domestic grate is wasted and about 30 per cent. wasted on the industrial grate. About 240 million tons of coal are consumed annually, 40 million tons on the domestic grate and 200 million tons on the industrial grate. The waste of coal annually on the domestic grate, say, is 20 million tons, and on the industrial grate at least 60 million tons, which is 25 per cent. and not 75 per cent. of the smoke nuisance from the domestic chimneys, and 75 per cent. and not 25 per cent. from the industrial chimneys.

Coal consumption and the waste therefrom is the only

way of approximating the nuisance caused by the emissions of smoke and noxious vapours.

Kitchen Ranges.—Antiquated and out-of-date kitchen ranges, badly set, are responsible for a considerable portion of the nuisance not only in Yorkshire and Lancashire, but all over the country, and it is only reasonable and right that more modern ranges and setting should take the place of the old. Such ranges burn less coal and make less smoke; their substitution would greatly benefit the tenants and the general public by less coal consumption and less smoke.

Coal Fires.—The Briton to-day is as determined as ever, if not more so, to have his coal fire, and to have the pleasure of poking it at any cost, and "woe to those who make the slightest attempt to deprive him of it," so said a great Public Health reformer recently.

If the general public continue the demand for the coal fire, then it will be retained in spite of what it costs, but it is only reasonable that its continuation should be with as little smoke nuisance as necessary.

Lighting Fires.—When lighting the fires every morning, it is impossible to prevent a smoke nuisance for a short time, until the fire is hot enough to burn most of the gases. The smoke emitted is not black, nor thick, dense brown, but dense enough to be a nuisance, and which cannot be prevented when lighting up. Even with the most modern grates, setting, etc., there will be a smoke nuisance when lighting the fire, and the duration of the nuisance will depend on the amount of coal put on the fire, until the fire is sufficiently incandescent to consume most of the gases.

Down Draught.—Down draught is general, especially when there is atmospheric depression and windy weather, forcing the smoke and smuts into the house instead of their going up the chimney, thus often filling the room and making it unfit for habitation, even when the chimneys are swept at short intervals. The only way to clear the

room of smoke, and induce a little chimney draught partially to remedy the down draught, is to open as wide as possible the door and window.

To prevent down draught during fairly normal atmospheric conditions, the chimney must be a reasonable height.

Smokeless Fuel.—In 1909 a smokeless fuel called "Coalite" was on the market, specially prepared and most suitable for the domestic fire. It was clean, hot, and smokeless, but the cost of production, etc., made it dearer than coal, and, in spite of its smokelessness and other qualities, the public would not purchase it, and like many other good things it very quickly passed away. The Low Temperature Carbonisation, Ltd., Barugh, Barnsley, are now making and selling a smokeless fuel, which they call "Coalite." The company say, "one ton of coal produces about 14 cwts. of 'Coalite,' 3 gallons of motor spirit, 17 gallons of oil, 15 lbs. of sulphate of ammonia, and 5,000 feet or about 40 therms of rich gas of 800 B.T.U. calorific value. Also we can sell 'Coalite' smokeless fuel at a price no higher than the best domestic coal, and with increased output, prices will soon be considerably lowered." In 1921 the Director of Fuel Research inspected the plant at Barnsley and said, "Definite progress had been made in the development of the plant, but the period of its regular operation had not been sufficiently prolonged to test it thoroughly from the engineering and technical points of view. Until this has been done it will not be possible to determine to what extent this particular method will contribute to the solution of the wider national problem in which our Committee is interested—viz., the replacement by the products of its carbonisation at low temperature of tens of millions of tons of coal which are at present consumed in the raw state. If a solid and smokeless fuel is produced economically on a commercial scale, then there should be little

difficulty in its substitution for raw coal because of its smokelessness."

Gas Fires.—There are in Sheffield over 122,000 cooking and heating appliances in use, and over 4,224 million cubic feet of gas are consumed annually. Thousands of electric stoves, cooking and heating, are in use, and if Sheffield is, as some hold, behind other cities and towns in adopting gas, electric, and other smoke-reducing fires, then there is at the present time a most liberal contribution to the reduction of the domestic smoke nuisance.

The adoption of so many gas, electric, and other smokeless fires is a positive proof that they are cleaner, are labour-saving, afford better regulation of temperature, are more hygienic, and, considering all things, more economical.

New Houses.—The central authority, with such definite data, ought to decline to sanction any housing scheme unless there is provision in the plan for the most up-to-date smoke appliances. It would be a great advantage to all, if the rule or restriction was:—"one coal fire only for each house," an essential (*Domestic Destructor*) for burning all combustible matter, the rest to be gas, electric, oil, central heating, or any other smokeless method.

Statutory Power.—Fifty years ago statutory power was given in the smoke sections of the Public Health Act, to take proceedings for the prevention of all unnecessary smoke from all furnaces and fireplaces except the domestic grate. Thus the domestic fire was given complete exemption, and legislative sanction to make a limitless unnecessary nuisance.

During the last 30 years in Sheffield much has been done to reduce the domestic smoke nuisance by modern grates, and by the use of anthracite, coke, gas, electricity, etc. This has been done by public spirited property owners, who knew there was no legal power to

compel them to do so. Others, knowing the legal position, have refused to move in the matter.

The time has now arrived, and is, in fact, long overdue, when the exemption of the private dwelling-house chimney should come to an end, and should be included in the statute with all other furnaces and fireplaces. There is no reason for its exemption. To require the domestic fire to be controlled like other fires in order to prevent as far as practicable all unnecessary smoke, would be no hardship or injustice to any one, but justice to all.

And yet there are many ardent advocates of smoke abatement and of smokeless cities who must know that a lot of the domestic smoke could be profitably prevented, but still hold that the time has not yet arrived (after 50 years of complete exemption) to include the domestic fire in the statute and prevent the unnecessary smoke.

Statutory Power Results.—There is no doubt that, if the domestic fire were included in the statute, then those who are now unreasonable would be required to do only the things which are reasonable and right to prevent unnecessary smoke.

They would adopt the most practicable and profitable smokeless methods and apparatus, to discover that in assisting to combat a great evil, they have at the same time benefitted themselves financially.