

CHAPTER XV.

SUMMARY AND CONCLUSIONS.

IN the preceding pages, the aim of the author has been to state briefly what has been done to abate the national smoke nuisance, what can be done, and what ought to be done, practically and profitably, to prevent all unnecessary smoke from all sorts and sizes of furnaces and fireplaces.

The history of the coal smoke nuisance, its advent, growth, and the present day extent of the evil has been traced, and the present Law in regard to smoke nuisances in England and Wales, in London, also in regard to Rail and Road Locomotives, and particulars of Local Acts, have been presented.

Summarising the conclusions arrived at, they may be stated briefly as follows :—

1. The damage done by the nuisance is too great and widespread to estimate. A third of the coal (80 million tons) consumed annually is wasted in smoke, and the damage done to property, vegetation, etc., may be approximated at from £2 to £4 per head of the population per annum. It is, however, an utter impossibility to approximate the damage done by smoke to the public health.

2. The complete combustion of coal is both practicable and profitable.

The product of complete combustion of 1 lb. of carbon to carbonic acid gas, CO_2 , develops 14,500 heat units, and there is no smoke nuisance; but incomplete combustion (insufficient air) produces carbonic oxide (CO),

and this latter develops only 4,450 heat units per 1 lb. of carbon, or 10,050 less. It is a poisonous gas, and also means that 69 per cent. of the fuel is wasted.

3. The smoke abatement work done in Sheffield during the last 35 years, with a reduction of the smoke nuisance, by 90 per cent., has increased the sunshine, reduced fogs, and contributed to the reduction of the death rate.

4. That, if worked intelligently, smoke preventers and fuel savers, mechanical stokers, sprinklers, underfeed chain-grate economisers and patent bars, will assist in the prevention of smoke, but if improperly worked will produce smoke.

5. Steps should be taken to prevent unnecessary kiln smoke, oven smoke, and noxious vapours. And applications made under Common Law (High Court) for Injunctions to stop injurious emissions of noxious vapours.

6. Domestic fires are responsible for about 25 per cent. of the smoke nuisance. They are exempt from Statutory control, but in some towns much has been done to reduce the nuisance by improved grates for burning raw coal; by coke, gas, electricity, etc., for heating, cooking, etc., and that if the domestic grate were under statutory control many who now refuse to move in the matter would perforce have to take the necessary steps to reduce the domestic smoke nuisance.

7. Steam boiler fires are responsible for about 30 per cent. of the nuisance, and nearly the whole of the abatement work done has been in connection with boiler smoke. After many demonstrations, and years of boiler smoke abatement work, many manufacturers now candidly confess there is no need for boilers working under normal conditions to make black smoke in large quantities. Experts are convinced that there is no necessity to make either black or dense smoke of any

colour from boilers, and if done it is both a waste of fuel and an indictable offence.

8. The metallurgical furnace fires are responsible for about 45 per cent. of the smoke nuisance, so that they are the worst offenders, and practically nothing has been done in this connection to prevent unnecessary smoke, because it is much more difficult to prevent smoke from metallurgical furnace fires than from boilers. In some metallurgical furnaces or Heat Treatment Processes, some smoke is absolutely necessary in the furnace to prevent the burning or spoiling of the steel, but the smoke, after having done its work in the furnace, need not be discharged directly into the atmosphere, but can be utilised.

About 80 per cent. of the smoke made by these furnace fires can be prevented in the furnace, or utilised after leaving the furnace, and its prevention, rather than hinder trade, would help it by saving coal and increasing the output of the furnaces.

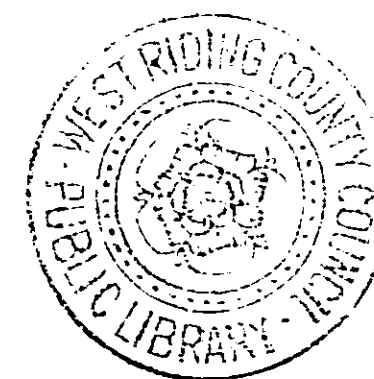
9. Manufacturers have put down many waste heat boilers. The gases having done their work in the furnaces are utilised in the generation of steam, and some firms make as much steam as they require to drive the whole of their machinery from the waste heat in this way. If steam is not required, the waste heat and unconsumed gases should be passed through a waste heat furnace, and the gases used in re-heating. The products of combustion should be discharged from chimneys higher, if practicable, than the surrounding buildings.

10. By the administration of the present smoke abatement law a little has been done, much more would have been done if all the Local Authorities had done their duty, but if all the Local Authorities had administered the law in letter and spirit, it would have been insufficient to enforce the abatement of all unnecessary smoke from furnaces and fireplaces.

11. The Public Health (Smoke Abatement) Act, 1926,

extends the powers of the smoke abatement sections of the Public Health Act of 1875, to Local Authorities to proceed against all or any unnecessary smoke from furnaces and fireplaces of all sorts and sizes, exempting only domestic and ship fires.

12. If the circular, dated 17th February, 1927, sent by the Minister of Health to County Councils and Sanitary Authorities in England and Wales, calling their attention to the Public Health (Smoke Abatement) Act, 1926, is sufficient to make them, from a sense of duty to the nation, administer the New Act in its letter and spirit, then there will be, some day, an end of the nuisance, and the nation will enter into its heritage—pure unpolluted air, and will enjoy the benefits of unobscured sunshine.



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