Report of the Sheffield, Rotherham & District Smoke Abatement Committee : 6th (1935/36)

PUBLIC HEALTH ACT, 1875.
PUBLIC HEALTH (SMOKE ABATEMENT) ACT, 1926.

REPORT

of the

Sheffield, Rotherham & District Smoke Abatement Committee

for the year

1st APRIL, 1935—31st MARCH, 1936.

SIXTH ANNUAL REPORT.

TOWN HALL,
SHEFFIELD.

PUBLIC HEALTH ACT, 1875.
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SIXTH ANNUAL REPORT.

TOWN HALL,
SHEFFIELD.

MEMBERS OF THE COMMITTEE.

Representing the Sheffield City Council.

Alderman J. A. LONGDEN.
Councillor W. ASBURY, J.P.
,, J. GREEN.
,, F. LLOYD, J.P.
,, H. SLACK.

Representing the Rotherham County Borough Council.

Alderman F. HARPER. (Mayor of Rotherham).
Councillor G. C. BALL.

Representing the Rotherham Rural District Council.

Councillor R. W. WALKER.

Representing the Stocksbridge Urban District Council.

Councillor D. A. TRUMAN.

Representing the Rawmarsh Urban District Council.

Councillor J. A. BARRACLOUGH.

Representing the Greasbrough Urban District Council.

Councillor F. SCHOFIELD.

OFFICERS OF THE COMMITTEE.

Chairman	Councillor W. Asbury, J.P.
Deputy-Chairman ..	Alderman F. Harper.
Hon. Secretary	Town Clerk, Sheffield (Mr. E. B. Gibson).
Hon. Treasurer ..	City Treasurer, Sheffield (Mr. A. B. Griffiths, F.I.M.T.A., F.S.A.A.).
Hon. Medical Officer ..	Medical Officer of Health, Sheffield (Mr. J. Rennie, M.D., D.P.H.).
Hon. Auditor	Accountant Auditor, Sheffield. (Mr. W. S. Blackhurst, A.S.A.A.).
Chief Smoke Inspector ..	Mr. J. Law.
Smoke Inspectors ..	Mr. H. Stenton. Mr. W. H. Levitt. Mr. J. H. Hoare. Mr. G. Wilkinson.

REPORT

of the

Sheffield, Rotherham and District Smoke Abatement Committee

for the year 1st April, 1935—31st March, 1936.

The Committee have pleasure in presenting their Sixth Annual Report.

Meetings.

There have been twelve meetings of the Committee, all of which were held in the Town Hall, Sheffield.

Members.

There has been one change in the personnel of the Committee during the past year, caused by the death of Councillor J. A. Barraclough, Rawmarsh, and the condolences of the Committee were tendered to the widow.

Staff.

The services of the Chief Smoke Inspector and three of the Inspectors are loaned by the Sheffield Corporation, along with the other Inspector loaned by the Rotherham Corporation, to the Committee who are responsible for the payment of salaries, etc. During the year there has been one change, Mr. G. Wilkinson having been appointed an Inspector in place of Mr. P. H. Saunders who had obtained an appointment under another Local Authority.

Reports on Observations Made.

The Chief Smoke Inspector submitted reports to each of the meetings, which were considered and dealt with in the following way; in certain cases authority was given for statutory notices to be served; in others authority was given for proceedings to be taken to obtain a magistrates' order; in others, proceedings were authorised to enforce a magistrate's order, and in several cases the Secretary was instructed to write warning letters.

The Reports submitted included reports of emissions of smoke in excessive quantities from Combination and Furnace Chimneys; in these cases particulars of the observations were forwarded to the Manufacturers' Committee for their consideration and attention.

Statistical Reports were submitted and the tabulated figures shown below are the totals for the year.

	Sheffield	Rotherham	Rotherham Rural Dist.	Rawmarsh	Greasbro'	Stocksbridge
No. of chimneys observed ..	5,486	1,022	342	194	147	294
No. of minutes smoke emitted	13,471	2,678½	1,122	586½	470	1,052
Average minutes smoke per hour	2·4	2·6	3·2	3·0	3·2	3·5
No. of notices served	57	14	4	5	3	1
No. of intimations served	294	69	4	8	3	20
No. of Advisory visits	680	127	55	52	24	62
No. of complaints answered ..	100	17	4	4	0	2
No. of chimneys demolished ..	10	3	0	0	0	0
No. of chimneys raised	19	0	0	0	0	1
No. of chimneys erected ..	30	11	2	1	0	2

Prosecutions.

During the year eleven cases were reported to the Committee for their consideration.

In four cases the Committee decided that no action should be taken and in six other cases warning letters were sent to the firms concerned.

Proceedings were taken against a firm (iron foundry) and the case was dismissed, the firm stating that the use of coke had abated the nuisance.

Atmospheric Pollution.

There are five "fixed" deposit gauges in the area, used for the measurement of atmospheric pollution, three in Sheffield and two in Rotherham.

Two additional gauges are also in operation which are considered as "mobile" gauges, one at Hillsborough and the other at Stocksbridge. A further gauge was installed last December at Ewden Waterworks, where it was thought that low records could be obtained. It was noted, however, that the pollution exceeded that recorded at Nether Green during January and March and the results have been disappointing.

The following tables show the monthly returns issued during the year.

Monthly Record of Solid Matter.

Month	Sheffield				Rotherham		Stocks-bridge	Ewden Water-works
	Attercliffe	Nether Green	Surrey Street	Hillsbro'	Technical College	Oakwood Hall		
1935								
April	32·79	8·39	21·90	14·88	32·58	13·71	13·60	—
May	25·05	8·36	24·38	13·24	22·39	9·25	20·82	—
June	32·42	8·56	29·48	16·46	19·34	11·70	14·24	—
July	23·27	6·30	14·46	17·97	12·99	11·87	17·81	—
August ..	26·72	8·36	20·15	13·27	30·45	19·68	20·11	—
September ..	27·96	23·43	19·81	20·85	26·72	16·53	13·29	—
October ..	26·05	15·13	33·99	18·17	33·15	19·85	24·02	—
November ..	22·63	10·32	20·33	20·82	27·33	12·74	12·42	—
December ..	28·90	15·69	29·76	20·98	30·34	17·57	30·53	11·69
1936								
January ..	28·84	7·50	36·26	23·70	26·12	16·73	14·41	10·38
February ..	30·45	10·88	26·65	16·36	24·20	10·46	16·47	9·67
March ..	30·65	8·56	32·69	18·44	28·92	14·79	14·71	9·00
Total for year	335·73	131·48	309·86	215·14	314·53	174·88	212·43	40·74
Average tons per sq. mile ..	27·98	10·95	25·82	17·92	26·21	14·57	17·70	10·18

In conjunction with the pollution deposit gauges at the five fixed stations, gauges are also installed for the measurement of ultra-violet rays by the Acetone Methylene Blue Test.

N.B.—According to the maker of the apparatus a quartz tube filled with Acetone Methylene Blue Solution exposed for one hour at a distance of one yard from a carbon arc lamp (25 amperes) gives a reading of one unit. Glass "check" tubes were used in conjunction with the quartz tubes and the results were recorded.

Daily readings were taken and below are shown the various averages of the Units recorded at the various stations.

Average Units per Day.

Month.	Sheffield.						Rotherham.			
	Attercliffe		Nether Green		Surrey St.		Technical College		Oakwood Hall Sanatorium	
1935	Quartz	Glass	Quartz	Glass	Quartz	Glass	Quartz	Glass	Quartz	Glass
April ..	0·53	0·33	0·86	0·36	0·56	0·33	0·60	0·27	0·55	0·28
May ..	0·90	0·55	1·42	0·48	0·93	0·48	0·80	0·27	0·94	0·29
June ..	1·50	0·86	2·10	0·73	1·50	0·73	0·93	0·30	1·20	0·33
July ..	1·55	0·71	2·00	0·64	1·71	0·71	1·90	1·06	2·39	1·36
August ..	1·26	0·60	2·03	0·67	1·45	0·55	1·03	0·55	1·10	0·68
September ..	0·86	0·70	1·63	0·68	1·36	0·83	0·60	0·30	0·56	0·26
October ..	0·35	0·32	0·56	0·35	0·48	0·40	0·32	0·06	0·32	0·06
November ..	0·17	0·17	0·25	0·17	0·30	0·26	—	—	—	—
December ..	0·09	0·09	0·25	0·17	0·13	0·09	0·12	0·12	0·12	0·12
1936										
January ..	0·16	0·16	0·16	0·12	0·13	0·13	0·16	0·16	0·16	0·16
February ..	0·17	0·17	0·27	0·24	0·27	0·22	0·29	0·29	0·29	0·29
March ..	0·37	0·29	0·40	0·37	0·35	0·32	0·37	0·37	0·40	0·33

Sulphur Determinations.

Records for the determination of sulphur in the atmosphere are being taken by the volumetric and lead peroxide method at Surrey Street, Sheffield, and by the lead peroxide method at the College of Technology, Rotherham, and at Handsworth, and Dore, Sheffield.

With the volumetric method which has been running continuously at Surrey Street for the past five years it has been found that the acidity of the atmosphere varies inversely with the wind velocity, abnormal deposits occurring during fog and heavy humid atmospheric periods.

Charts were submitted to the Committee each month and a graphical chart for the year is attached to this Report.

Research Work.

Research work has been continued by the Joint Advisory Committee under the Chairmanship of Professor R. V. Wheeler, D.Sc., F.I.C., of the Department of Fuel Technology of the Sheffield University, on the lines indicated in the last Annual Report, as follows ;—

> " In view of the fact that other organisations proposed to undertake research on cognate problems (i.e. the British Iron and Steel Federation, on the burning properties of producer coals ; the Coal Utilisation Council, on the burning properties of coals for marine boilers ; and the Fuel Research Board, on the burning properties of house coals), an attempt should be made to obtain fundamental data regarding the properties of coals that influence their mode of burning."

To this end it was agreed that the Programme should include :—

1. Analytical data regarding representative boiler and furnace coals in use in Sheffield and Rotherham, in particular ash and moisture contents, calorific value and fusibility of ash. In addition, laboratory studies should be made of the behaviour of the coals during heating (e.g. as regards their tendency to melt) ; and of their " re-activity ".

2. Small-scale furnace tests of the burning properties of representative coals.

3. Full-scale trials, at hand-fired boilers, of a limited number of coals chosen from those examined under (1) and (2) to correlate their performance with the analytical and test data obtained.

In addition to the organisations mentioned above as carrying out research on cognate problems, Professor Wheeler stated that the Combustion Appliance Makers Association proposed to undertake research on the burning properties of house coals and asked that the Committee should co-operate with them, which was agreed to.

The Committee agreed that research for the year ending 1st September, 1936, should continue on the lines indicated.

A progress report was submitted, a copy of which had been forwarded to the British Iron and Steel Federation for submission to the Iron and Steel Industrial Research Council. Professor Wheeler also submitted photographs illustrating the " swelling tests " of the 22 samples of coal referred to in the Report and pointed out that, in general non-swelling coals were the best for steam raising. He also stated that the Investigator had found with regard to coals used for steam raising in the Sheffield district, that there were, in general, two attitudes of mind of the users, the one being that, provided the coal was cheap, its character did not matter, and the other, that the prevention of smoke being of prime importance it might be necessary to pay a high price for " non-smoking " coals. In this connection the Investigator had been able to give advice to the users as to suitable fuels to use, in some cases proving that a cheap fuel was not really economical, and in others that, in a desire to reduce smoke, an unnecessarily expensive fuel was being used.

The Committee agreed to the suggestion of Professor Wheeler that the examination of, say, 20 more samples on similar lines to those reported on, and referred to above, should be undertaken.

The cost for the year ending 1st September, 1936, is estimated at £326, such amount being guaranteed by the Sheffield, Rotherham and District Smoke Abatement Committee, but it is anticipated that the Department of Scientific and Industrial Research, through the British Iron and Steel Federation, and the Local Manufacturers' Committee, will each contribute towards such expenditure.

Metallurgical Processes.

It was reported to the Committee that at the Annual Conference of the National Smoke Abatement Society, it was suggested that consideration should be given to the desirability of the qualified exemptions enjoyed by certain industries under the Public Health (Smoke Abatement) Act, 1926, being withdrawn.

The Committee considered the suggestion and agreed that the Minister of Health should be communicated with as to the present position with regard to Section 1 (1) (*e*) of the Public Health (Smoke Abatement) Act, 1926, and it was subsequently reported that the Minister had not in contemplation the making of a Provisional Order excluding from the application of Section 334 of the Public Health Act, 1875, any process specified in that Section as amended by Section 1 (1) (*e*) of the Act of 1926.

The Committee decided that a letter should be addressed to the Minister of Health suggesting that he should direct some member or members of the Ministry's staff to make local enquiries to ascertain what need there now is for the qualified exemption given by the Act of 1926, and that a copy of such letter be forwarded to the Local Manufacturers Committee, and this was done.

Smokeless Fuel. Domestic Smoke.

It was reported that the National Smoke Abatement Society at their Annual Meeting had passed a resolution congratulating the Manchester Corporation in appointing a Special Committee to consider and report upon the desirability and practicability of making available to the Public smokeless fuels including gas and electricity at such cost (not including a charge upon the rates) in relation to raw coal as will permit their use in preference to coal, and thus make a definite contribution to a cleaner atmosphere, and deciding as an experiment to make provision in a number of Corporation houses for grates to be specially adapted to burn coke instead of coal. The Society suggested that all other local authorities should appoint Committees with similar terms of reference, and the Committee agreed that each Constituent Authority of the Committee should be furnished with a copy of the Manchester Report and invited to furnish the Committee with their views on the suggestion of the Conference. The views of Constituent Authorities were obtained, and the Committee deferred consideration until the Manchester experiment had been in operation 6 months.

Arrangements have been made with the Sheffield University for Professor Wheeler to report on the smokeless fuel known as the " Sheffield process fuel " (which had not yet been commercialised).

Atmospheric Pollution.

The Committee so far as they were concerned, adopted a suggestion of the Department of Scientific and Industrial Research that local authorities might afford further assistance in dealing with measurements

of atmospheric pollution, in country and seaside places, the bulk of the data available having been obtained from observations in industrial and heavily polluted areas in order to enable reliable comparisons to be drawn between town and country conditions.

Gas Fumes, Fumes from Electric Melting Furnaces and Dust from Extractors in Works.

A Report of the Chief Smoke Inspector on these matters was submitted, and a copy forwarded to the Home Office as a result of which the Secretary of State stated that he would welcome collaboration between the Factory Inspectorate and the Officers of the Committee.

A meeting of the officials concerned had been held, and the Chief Inspector of Factories had investigated the question, and reported thereon.

Fumes.

Complaints having been received as to the fumes arising from processes carried out at two Works the Committee decided that, whilst the question of fumes was one which strictly did not come within their jurisdiction, the question be taken up with the Alkali etc Works Regulation Inspector in respect of one of the Works, and as, in the other case, the firm concerned were prepared to co-operate, Professor R. V. Wheeler, through the Sheffield University in connection with smoke research, was requested to co-operate in regard to the question of fumes at such works, and after considering his Report and the observations of the firm concerned thereon, the Committee decided to take no further action.

Department of Scientific and Industrial Research.

The Medical Officer of Health, Rotherham, (Dr. W. Barr), was appointed to attend the meeting of the Standing Conference of Co-operating Bodies on the investigation of Atmospheric Pollution, held in London, on the 25th November, 1935, and his Report was subsequently circulated to the members of the Committee.

National Smoke Abatement Society.

The Chairman (Councillor W. Asbury) and the Chief Smoke Inspector were appointed delegates to the Annual Conference of the Society held in Bristol, on the 19th—21st September, 1935, and their report was subsequently submitted to the Committee.

The Committee agreed that in connection with the decision of the Society that a page of each issue of the Society's quarterly Journal should be devoted to news of the Regional Committees, to furnish them with the Minutes of each meeting of the Committee.

Byelaws Regulating the Height of Chimneys.

As the Rotherham Corporation had no powers for the regulation of heights of chimneys, the Committee approved the suggestion that in

order to facilitate the work of the Committee, representations be made to such Corporation with a view to steps being taken for powers to be obtained similar to those obtained by the Sheffield Corporation.

Trade Refuse Burning.

The Committee considered a Report of the Chief Smoke Inspector, the Town Clerk, Sheffield, stating that he was of opinion that the powers delegated to the Committee did not extend to these nuisances which were matters for the Local Authority concerned, and approved of the views expressed by him being communicated to the Constituent Local Authorities.

Instruction Classes for Stokers and Furnacemen.

Encouraging results were reported in connection with the continuation of these Classes by the Sheffield Trades' Technical Societies at the Sheffield University, and also in connection with those held at the Rotherham College of Technology.

Standards as to Smoke Emission.

The Standards which the Committee's Inspectors work to, are as follows :—

Where there is 1 boiler attached to a chimney, 2 minutes per hour.

Where there are 2 boilers attached to a chimney, 3 minutes per hour.

Where there are 3 boilers attached to a chimney, 4 minutes per hour.

Where there are 4 or more boilers attached to a chimney, 6 minutes per hour.

Where there are 1 or more boilers and 1 or more furnaces attached to one chimney, 6 minutes per hour.

Membership and Contributions to Other Bodies.

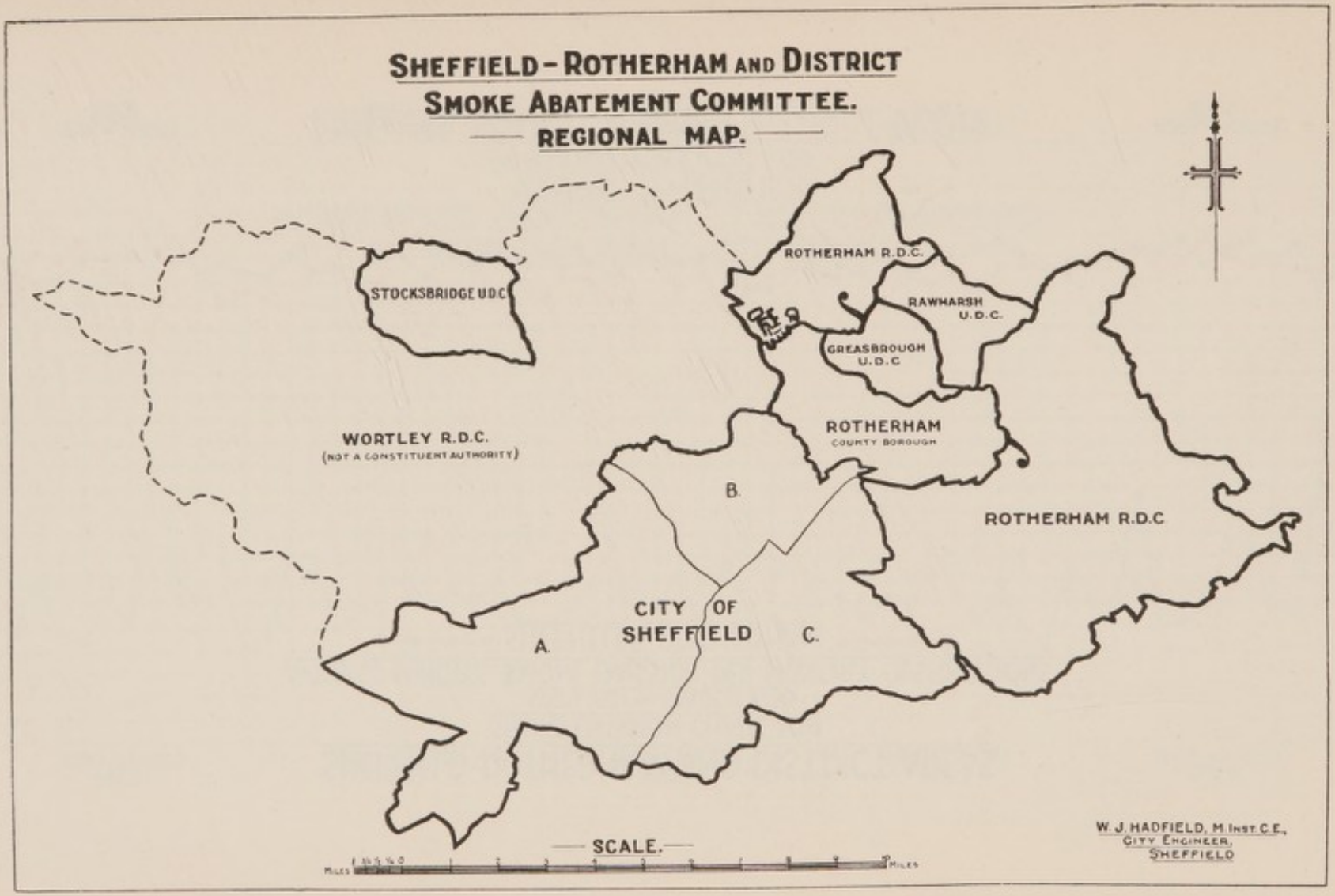
The Committee are Members of the Standing Conference of Co-operating Bodies of the Department of Industrial and Scientific Research and contribute an annual amount of £55 to the Department.

They are also affiliated to the National Smoke Abatement Society to whom they make an annual contribution of £25.

Annexed hereto is a copy of a Report of the Chief Smoke Inspector, a Statement of Accounts, a map of the Area, and 7 graphs.

W. ASBURY, Chairman.

Town Hall,
Sheffield.

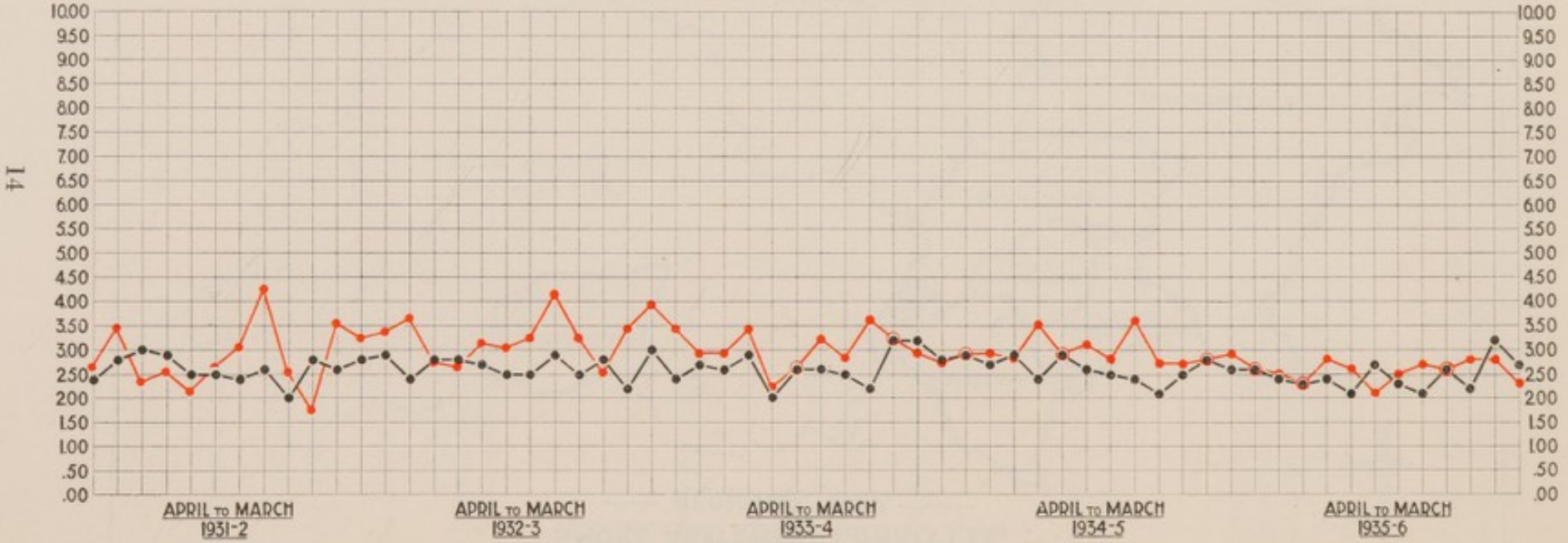

SHEFFIELD – ROTHERHAM AND DISTRICT
SMOKE ABATEMENT COMMITTEE.
REGIONAL MAP.
STOCKSBRIDGE U.D.C.
ROTHERHAM R.D.C.
RAWMARSH U.D.C.
GREASBROUGH U.D.C
ROTHERHAM COUNTY BOROUGH
WORTLEY R.D.C.
(NOT A CONSTITUENT AUTHORITY)
B.
ROTHERHAM R.D.C
CITY OF SHEFFIELD
A.
C.
SCALE.
W. J. HADFIELD, M. Inst. C.E.,
City Engineer,
Sheffield

SHEFFIELD·ROTHERHAM AND DISTRICT AREAS.

SMOKE EMISSION CHART FOR APRIL 1931 TO MARCH 1936.

AVERAGE MINUTES SMOKE EMISSION PER MONTHLY OBSERVATIONS.

●—●—●—● SHEFFIELD – ROTHERHAM ●—●—●—●



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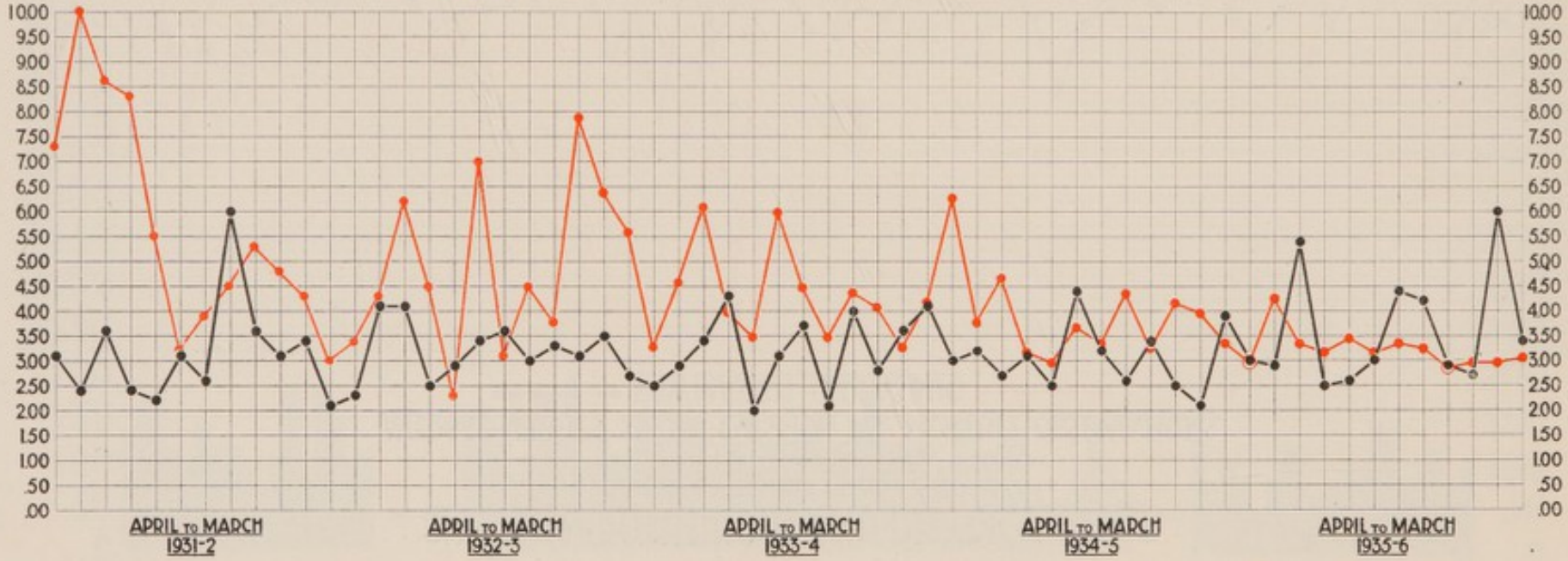
SHEFFIELD·ROTHERHAM AND DISTRICT AREAS

SMOKE EMISSION CHART FOR APRIL 1931 TO MARCH 1936

AVERAGE MINUTES SMOKE EMISSION PER MONTHLY OBSERVATIONS

ROTHERHAM RURAL — STOCKSBRIDGE

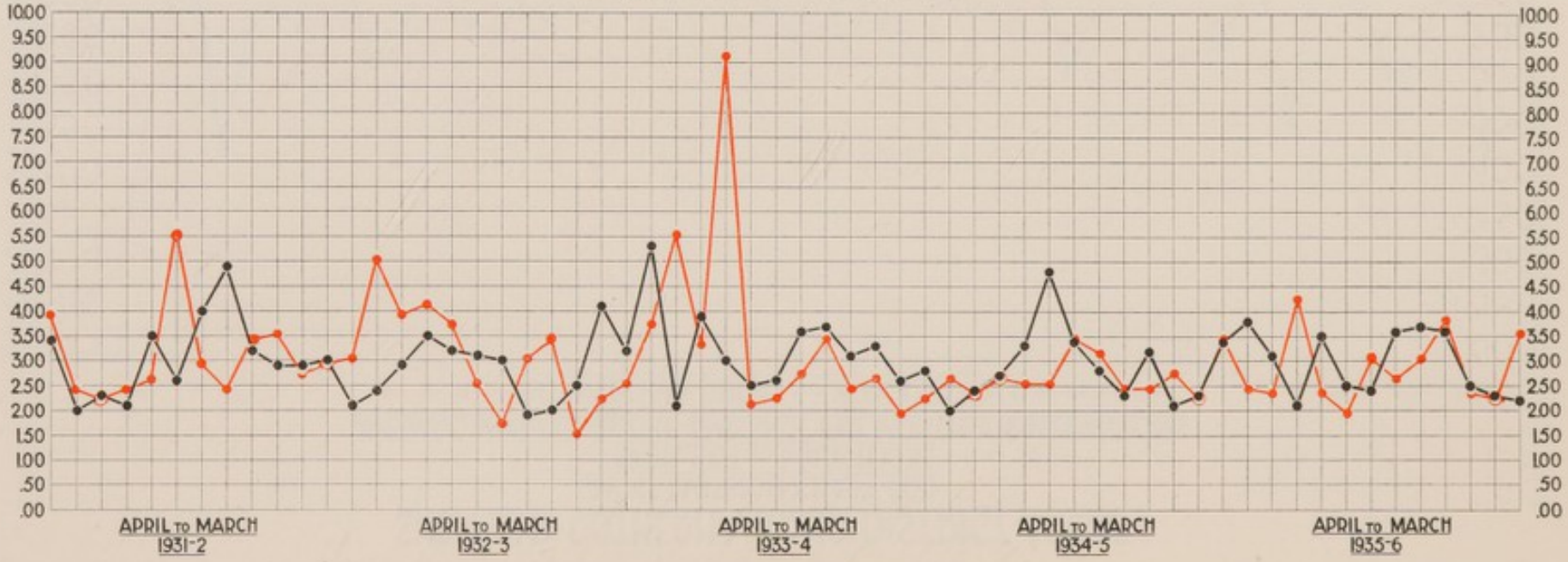


SHEFFIELD·ROTHERHAM AND DISTRICT AREAS.

SMOKE EMISSION CHART FOR APRIL 1931 TO MARCH 1936.

AVERAGE MINUTES SMOKE EMISSION PER MONTHLY OBSERVATIONS.

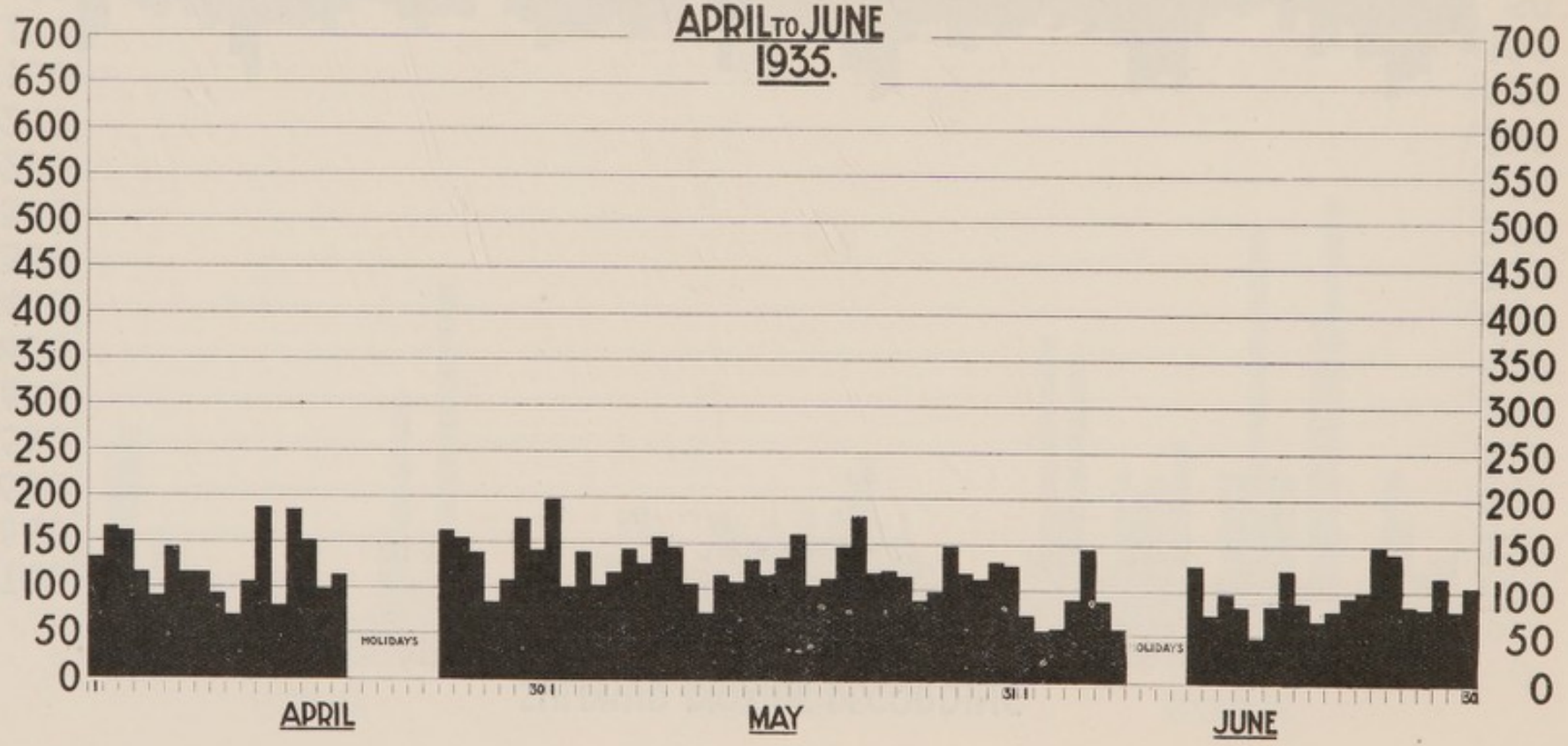
●—●—●—● RAWMARSH – GREASBRO' ●—●—●—●



SULPHUR DIOXIDE RECORDING

PARTS PER THOUSAND MILLION

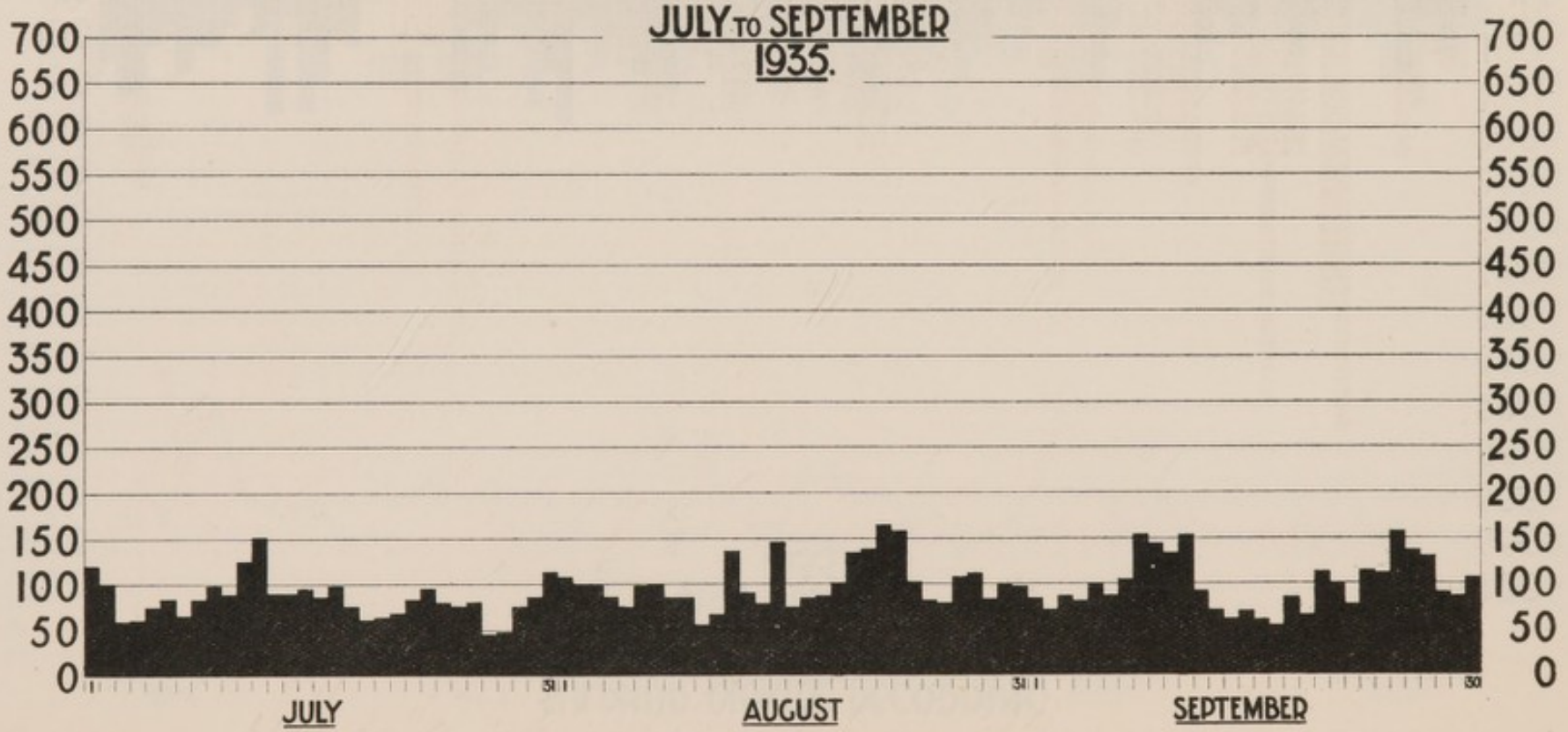
APRIL TO JUNE 1935.



SULPHUR DIOXIDE RECORDING

PARTS PER THOUSAND MILLION

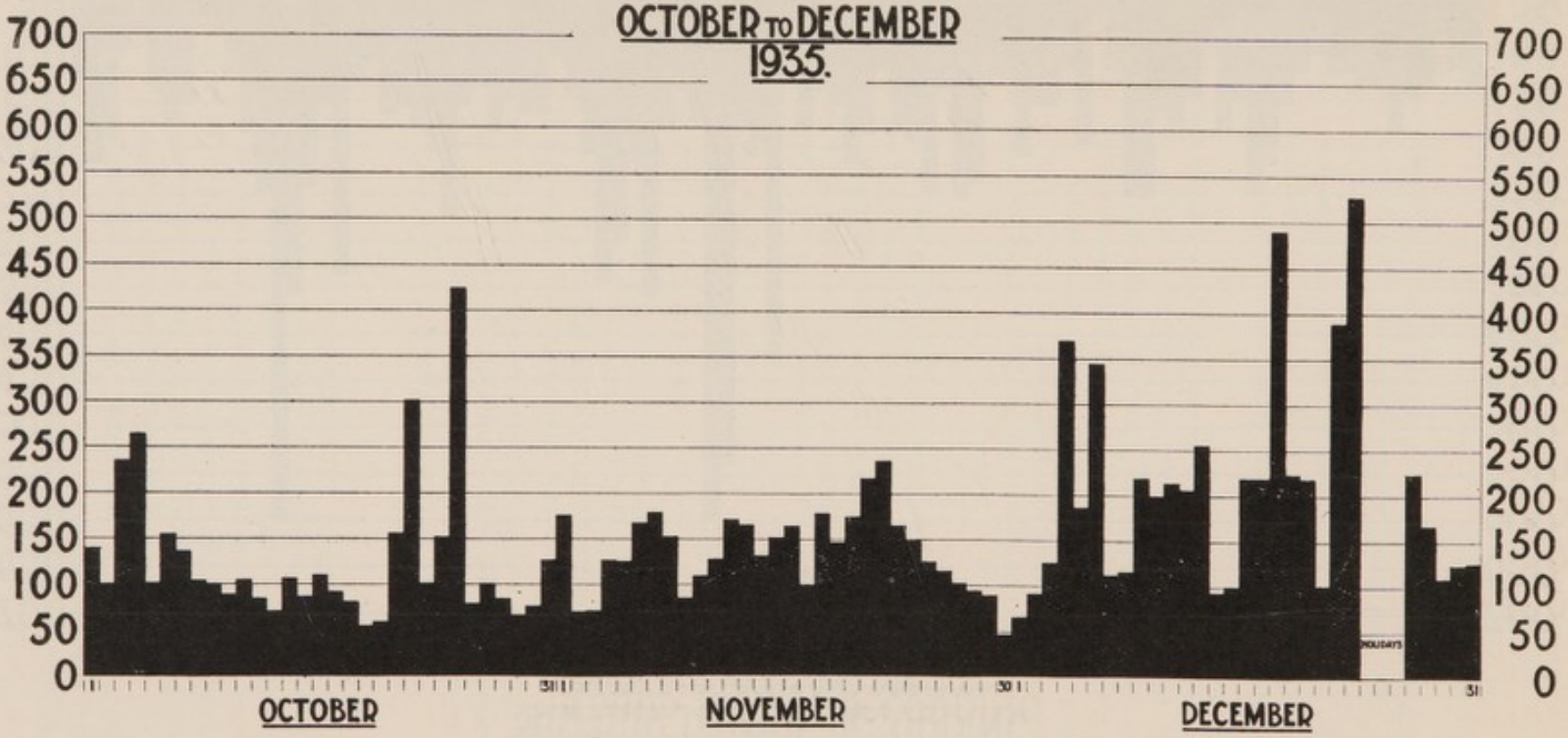
JULY TO SEPTEMBER 1935.



SULPHUR DIOXIDE RECORDING

PARTS PER THOUSAND MILLION

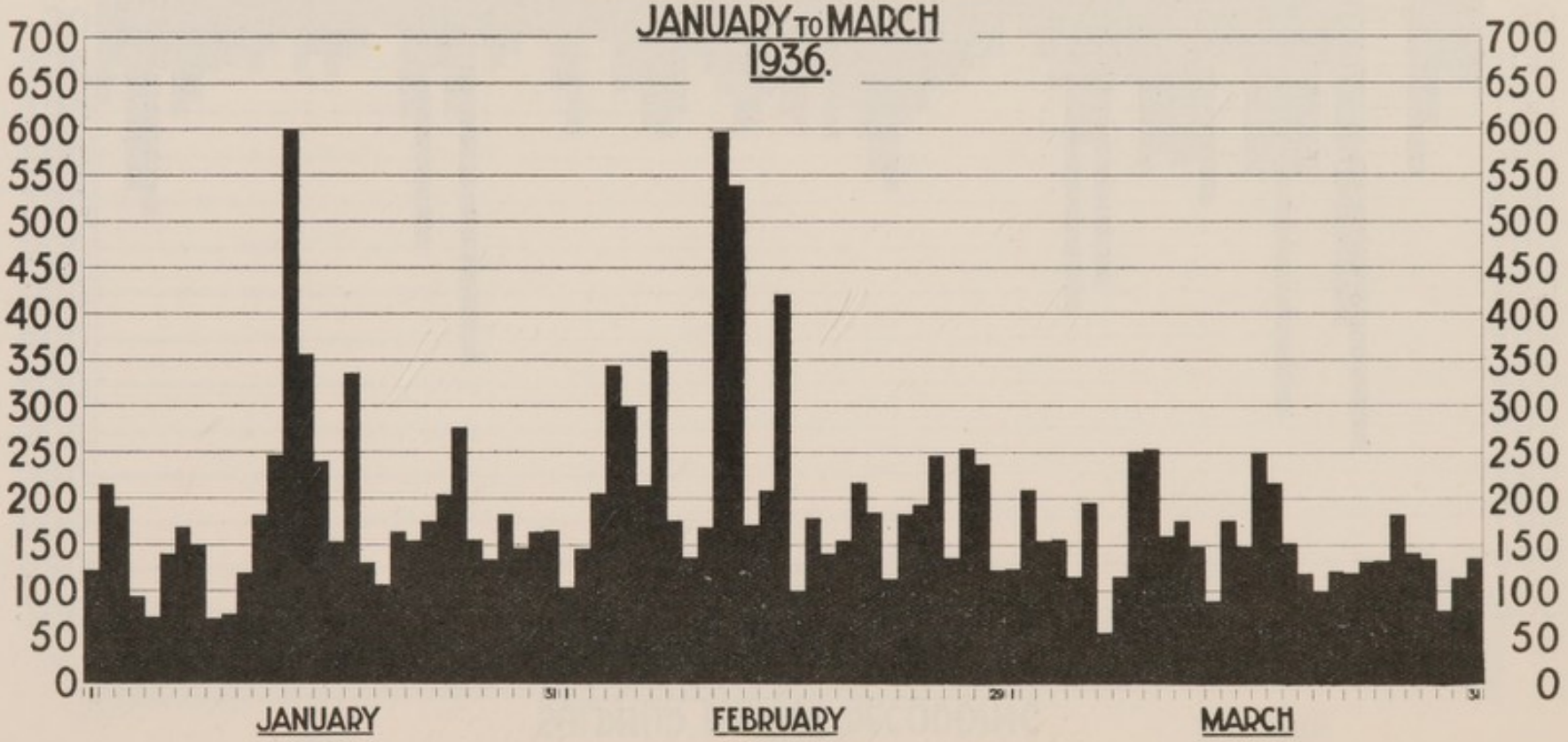
OCTOBER TO DECEMBER 1935.



SULPHUR DIOXIDE RECORDING

PARTS PER THOUSAND MILLION

JANUARY TO MARCH
1936.



REPORT OF THE CHIEF SMOKE INSPECTOR.

GENTLEMEN,

At the conclusion of the sixth year of Regional Control it is gratifying to report a general improvement in the conditions of trade and with it an increased amount of re-construction of furnaces. Unfortunately, in a number of cases, the conditions of trade have increased and the demand for output of material has been such that it has not been possible to proceed with re-construction work as quickly as had been anticipated.

At present the amount of pollution appears to be on the increase, but when reconstruction work is further advanced, improvement in the condition of the atmosphere will be shown. Tribute must be given to the manufacturers, who are showing such confidence in the stability of future trade, by the investment of considerable capital for new furnaces, and it is certain that the increased efficiency will show returns for the work done, as well as helping to eliminate pollution.

Instructional Work.

The lectures and instruction classes, which were commenced during the previous year by the Sheffield Trades Technical Society, have been continued. At the conclusion of the Course an examination was given, at which 20 students were successful, and a special presentation of Certificates was arranged. At the conclusion of the session, lectures were also given on the subject of "Metallurgical process" furnaces, the attendances showing decided promise, about 100 people being present at each lecture. It may be considered desirable to inaugurate classes for this work during the coming winter.

The classes were continued at Rotherham, and further certificates have been issued. It is hoped that certain students from the College of Technology will be successful in passing the City and Guilds of London Institute Examination, for which they have now qualified.

These classes appear to be established and the reports of some of the Manufacturers with regard to improved conditions of steam generation, due in a measure to the instruction given to the stokers, show that there is justification for such work.

Boiler Chimneys.

With improved trade conditions the demand for steam at many of the works has increased, and the tendency throughout shows that unless provision is made to meet these demands, considerable pollution will be caused by the forcing of boiler furnaces, due to overload. In some works extra boilers have been provided, whilst in others, arrangements have been made by means of mechanical stoking or mechanical draught to enable these heavy loads to be dealt with.

One plant, where pulverised fuel was tried out for Lancashire boiler work has not, as yet, proved successful, but it is hoped that when further adjustments have been made that better results will be obtained,

because a considerable amount of money has been spent on the installation of this plant.

The use of measuring and recording instruments is also making progress, but there is a definite need for work of this kind to be extended with beneficial results both to the manufacturer and the engineer. The number of boiler plants in operation where there are no means of ascertaining the amount of evaporation per pound of fuel used are very considerable, and unless such figures are available, steam generation is carried out without any consideration of efficiency.

Colliery boiler chimneys appear to be working with less smoke emission, but at some of the boiler plants there is still difficulty experienced in burning the "fines" successfully. Extensions are being made by installing further Lancashire boilers, and this would appear to be improvement more in the method of a "palliative" than a "cure" for the difficulty. The question of substituting water-tube boilers in lieu of the existing batteries of Lancashire boilers is one that will eventually have to be seriously considered.

Metallurgical Processes.

Reconstruction work on furnaces is continuing at an increased rate, the number of town's gas-fired furnaces installed during the year being very much greater than in any previous year.

In one large works an electrical heat-treatment plant has been installed, which is distinctly unique from any of the existing methods of heat treatment in this area, and though comparative heating costs are as five to one, it is estimated that, with accuracy of work and labour saving, this additional cost will be accounted for. It has always been considered that for heat treatment work electricity could not become a competitor to solid or gaseous fuels, and in general use this contention will be sustained, but when the results of special types of work similar to this have been examined it appears that the possibility of electrical heat treatment can be used to advantage.

Observations made during the year on chimneys serving coal-fired reheating and heat treatment furnaces show the necessity of reconstruction work and greater efficiency, because emissions between 50 and 60 minutes excessive smoke in the hour have been recorded, whilst chimneys serving furnaces doing similar types of work, which have been modernised, keep well within the prescribed standard of six minutes per hour.

Following upon observation work such as this it was thought advisable to make application to the Ministry of Health, asking them to investigate the problem of metallurgical process smoke with the object of reconsidering the provisional exemption granted in 1926.

It is hoped that this will not be looked upon as being a hostile action, but will be taken as a progressive movement to a definite conclusion in the elimination of smoke from metallurgical process furnaces. There are a number of manufacturers who are not considering any schemes of reconstruction, but are relying on this section of the Smoke Abatement Act to give them a continued exemption,

and it is not fair to the many manufacturers who have put their works in order to allow the obsolete types of furnaces to continue.

Combination Chimneys.

There remain a number of chimneys in the area which serve to carry away the products of combustion from boilers and furnaces, and which cause considerable nuisance from smoke. The condition of the boilers and furnaces is very poor in a number of cases, and with a little expenditure improvement could easily be affected.

I would appeal to all users of combination chimneys to make an examination of the plant and try to assist the Department with their work.

Coke Oven Plants.

Complaints continue to be received with regard to nuisance caused by these works, and though it is agreed that the modern types of coke ovens are an improvement on the older types, unfortunately, there are both new and old coke ovens in the Area. Undoubtedly, persons residing in close proximity to works of this kind are subjected to inconvenience and discomfort at various periods, and have justification for complaints often due to lack of care in the processes.

Refuse Burning.

The indiscriminate burning of trade and domestic refuse continues to cause discomfort and inconvenience to many people, and again an appeal is made to the persons concerned to assist in stopping this practice by either using a proper incinerator or other suitable means of disposal, or to arrange for the Cleansing Department to remove the material so that it can be dealt with in a satisfactory manner. Should there be any difficulty in regard to disposal the Staff of the Smoke Abatement Department will give their assistance in this respect.

Dust and Fumes Nuisances.

A number of complaints were investigated and it was found that the nuisance from works was caused by dust extractors fitted with ineffective grit arrestors or by there being no method of arresting the dust at all. In co-operation with H.M. Inspector of Factories several of these nuisances were eliminated and an arrangement has been made whereby any further complaints made with regard to nuisances of this kind can be dealt with. With regard to fumes from factories, this matter is still under consideration, and will be reported on at a later date.

In conclusion, it can be stated that the work of preventing pollution is progressing, and that certain manufacturers are co-operating in order to assist. There still remains a considerable amount of work to be done which will probably be extended over a period of years, but it is hoped that this work will be carried out without having to resort to coercion. The Industrial Districts throughout the country are watching the progress that is being made in Sheffield, Rotherham and District, and it is hoped that the progress will be well maintained.

Your obedient servant,

JAMES LAW.

Chief Smoke Inspector.

Income and Expenditure Account for the

EXPENDITURE.

1935. £	s.	d.		1936. £	s.	d.
1,310	11	2	Salaries of Inspectors	1,328	14	1
7	1	7	Employers' Contribution—Health, Pensions and Unemployment Insurance ..	6	0	1
65	10	7	Superannuation—5% Contribution ..	65	1	8
2	13	8	Workmen's Compensation and Third Party Insurance	2	14	4
61	1	4	Travelling Expenses of Inspectors.. ..	44	0	8
1	15	8	Motor Car Hire	2	13	4
18	7	9	Deputation Expenses	21	1	9
158	19	6	Fees of City Analyst	192	2	0
1	2	9	Costs and Summonses	0	5	0
55	0	0	Subscription to the Department of Scientific and Industrial Research	55	0	0
25	0	0	Subscription to the National Smoke Abatement Society	25	0	0
38	1	4	Printing, Stationery and Advertising ..	45	11	11
147	13	0	Research Work	230	0	0
21	17	1	Postages and Disbursements	17	15	8
24	13	5	Apparatus	17	1	8
1,939	8	10				
86	8	2	BALANCE—Being Income in excess of Expenditure			
£2,025	17	0		£2,053	2	2

BALANCE SHEET,

LIABILITIES.

	£	s.	d.	£	s.	d.
Sundry Creditors				791	8	1
Income in excess of Expenditure to 31st March, 1935	134	13	6			
LESS—Expenditure in excess of Income to 31st March, 1936	111	12	4			
				23	1	2
				£814	9	3

City Treasurer's Office,
Town Hall, Sheffield.
23rd May, 1936.

SMOKE ABATEMENT COMMITTEE.

Year Ended 31st March, 1936.

INCOME.

1935. £	s.	d.		£	s.	d.	1936. £	s.	d.
			Contributions from Constituent Authorities :—						
1,668	0	6	Sheffield County Borough Council	1,602	16	9			
195	15	6	Rotherham Do. ..	187	17	1			
79	16	8	Rotherham Rural District Council	78	16	7			
35	13	3	Rawmarsh Urban District Council	33	16	6			
20	10	1	Stocksbridge Do. ..	19	19	3			
7	18	8	Greasbro' Do. ..	8	0	4			
							1,931	6	6
18	2	4	Bank Interest				10	3	4
							1,941	9	10
			BALANCE—Being Expenditure in excess of Income				111	12	4
£2,025	17	0					£2,053	2	2

as at 31ST MARCH, 1936.

ASSETS.

	£	s.	d.
Cash Balance—31st March, 1936—			
In hands of Bankers	814	9	3
	£814	9	3

PRINTING & STATIONERY DEPT
CITY OF SHEFFIELD