

Eighteenth Annual Kepu

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Bombay Sm«**Buaiiisuii**(

EIGHTEENTH ANNUAL REPORT OF THE
SMOKE-NUISANCES COMMISSION FOR
YEAR 1930-31.

1. This report covers the period from 1st April 1930 to 31st March 1931. The Commission consisted of the following members :•

President.

- (1) Mr. W. Dillon, I.C.S., Acting Collector of Bombay (from 1st April 1930 to 24th October 1930). *Ex-officio.*
Mr. J. W. Smyth, I.C.S., Collector of Bombay (from 25th October 1930 to 31st March 1931).

Members.

- (2) Mr. R. McMurray ~]
- (3) Mr. P. B. Advani, M.Sc. Nominated- by Government.
- (4) Mr. E. G. Cameron J
- (5) Mr. H.H. Lakin (from 1st April 1930 to 17th February 1931). Elected by the M U ,
Vacant from 18th February 1931 to 31st March 1931. r Association, Bombay.
- (6) Mr. W. A. Sutherland.
- (7) Mr. A. Geddis (from 1st April 1930 to 23rd October 1930). Elected by the Chamber of Commerce, Bombay.
Vacant from 24th October 1930 to 20th January 1931.
Mr. R. L. Ferard (from 21st January 1931 to 31st March 1931).

SUB-COMMITTEE FOR KARACHI.

President.

- (1) Mr. J. R. Hood, I.C.S., Collector of Karachi (from 1st April 1930 to 20th November 1930).
Vacant from 21st November 1930 to 23rd November 1930.
Mr. J. Monteath, I.C.S., Collector of Karachi (from 24th November 1930 to 31st March 1931).

Members.

{, Mr. K. W. Edwards (from 1st April 1930 to 13th May 1930).
Vacant from 13th May 1930 to 9th June 1930. Nominated by Government.
Mr. W. C. Echlin (from 10th June 1930 to 31st March 1931).

- (3) Khan Bahadur A. H. Mama .. Elected by the Karachi Municipality,
(4) Mr. R. J. Rainc .. Elected by the Factory owners, Karachi.

SUB-COMMITTEE FOR AHMEDABAD,

President.

- (1) Mr. E. G. Taylor, I.C.S., Collector of Ahmedabad .. *Ex-officio.*

Members.

- (2) Mr. M. T. Adalja, Executive Engineer, Ahmedabad Division .. *Ex-officio.*
(3) Colonel Sir B. H. Nanavaty, CLE. .. Elected by the Ahmedabad Municipality.
(4) Sheth Sakarlal Balabhai .. Elected by the Mill owners* Association, Ahmedabad.

2. During the year four meetings of the Commission were held at Bombay, four of the sub-committee were held at Karachi and three of the sub-committee were held at Ahmedabad.

The Commission was satisfied with the work done by the staff and with the co-operation received from owners and engineers of mills and factories.

3. In Bombay the services of one Inspector were wholly devoted to smoke-nuisances inspection throughout the year.

At Karachi the smoke-nuisances inspection is carried out by the Inspector in addition to his boiler inspection work and his work on tour.

At Ahmedabad the smoke-nuisances inspection is carried out by the Inspector stationed there in addition to his local and occasional district boiler inspection work.

4. The following table summarises and compares the work of the year and that of the preceding year in the three areas :—

		Observations of chimneys.	Visits to Factories.	Tests of appliances.
Bombay	1930-31	5,989	1,690	47
Do.	1929-30	6,017	1,415	59
Karachi	1930-31	203	32G	6
Do.	1929-30	130	19	<i>Nil.</i>
Ahmedabad	1930-31	1,049	889	<i>Nil.</i>
Do.	1929-30	984	596	28
Total	f1930-31	7,241	2,905	63
	< (,1929-30	7,131	2,030	87

5. In Bombay in comparison with the figures for the last year the total number of observations and of tests of appliances shows a slight decrease, while that of visits to factories shows an appreciable increase. This decrease has been more than made up by the visits paid and the instructions given to prevent smoke-nuisance. Flues and chimneys of small factories were dealt with in conjunction with the Bombay Municipality : this has formed a considerable part of the Commission's activities in recent years.

Many new factories are being added to the register. During the year the factories so added number 54 and include sugar refineries, soap, metal casting and lead smelting factories. The latter factories give a considerable amount of trouble when smoke-nuisance is concerned, since a large number of them is situated in the residential and business centre of the City. The actual density of the smoke emitted from the chimneys of such factories is scarcely above scale 4, but without adequate means to draw away the smoke from inside the premises in such a crowded city like Bombay the health of the public living close by must be impaired. The earning capacity of these factories during the year as a result of keen competition has been small and does not warrant the Department insisting on a large expenditure, but in future it may be possible to obviate this by insisting on metal casting factories going to some distance outside the congested business area.

A few more mills have been converted from coal to oil fuel. The competitive prices of coal and oil are such that there is little saving by using oil in the smaller concerns, whilst the advantage in keeping steam is considerable.

The G.I.P. Railway have extended their electric services outside of Bombay during the year. The B.B. & C.I. Railway have recently

opened the new Central Station ; now all the steam trains start from this station instead of from Colaba which has been entirely closed down since January 1st, 1931. This makes a considerable difference to the smoke- nuisance in the Fort area.

The average number of ships in the Alexandra, Victoria and Prince's Docks fell considerably during the early part of the year, but in the latter half it has been much better with the result that the total average for the year is almost the same as that of the previous year.

The industrial development of the City is steadily increasing, although the unsettled state of the country has had a very bad effect on small factory owners.

It is satisfactory to record the cordial co-operation of the heads of engineering departments, public bodies, shipping agencies and works using small boilers with the Inspector in the abatement of smoke-nuisances. By this means drivers and firemen are dealt with departmentally by their superiors when found to be careless in causing unnecessary smoke.

6. In Karachi, the total number of observations and of visits to factories shows a considerable increase over the figures of the preceding year. In this connection it is satisfactory to note that the Inspector has been able to devote some more time for smoke-nuisances duties than in previous years. This was due to the smaller pressure of boiler inspection work in the districts consequent on the diminution of the Lloyd Barrage Works and on the grouping of inspections of mofussil boilers.

7. At Ahmedabad the total number of observations and of visits to factories increased in comparison with the figures for the last year, while no tests of appliances were carried out. The ever increasing work of boiler inspection especially under the heads of repairs, steam pipes, separators, superheaters, etc., necessitated a slight curtailment of the time for the smoke-nuisances work during the year. Endeavour has, however, been made to give proper attention to this work, as will be apparent from the increase in the number of observations and of visits to factories.

The year's work shows an improvement over that of the preceding year, and this is due to the extra vigilance shown by the Inspector in personally interviewing the owners of chimneys and holding conferences with them. This method was adopted in pursuance of the wishes of the Sub-Committee and was found more efficient than issuing written notices and warnings. Attention was also paid to the nuisance caused by the railway locomotives especially when running between Sabarmati and Ahmedabad by corresponding with the District Loco Superintendent whenever the emission of black smoke from such locomotives was noticed. As a result this smoke nuisance has been greatly reduced.

There were 14 new boilers imported and registered in Ahmedabad City during the year of which one was spare and the rest were either for new concerns or were installed to meet the extra power requirement. Of the three new mills which were under construction one has started work and

the remaining two are nearing completion and will shortly begin working. Three new mills are about to be erected. One mill which had been closed down for some years and from which the boilers and machinery had been removed, has been fully re-equipped and restarted working. About 16 mills did night work during the year.

8. The emission of smoke is recorded according to the following table :—

Scale No. 1	..	..	..	No smoke.
„ No. 2				Light grey.
„ No. 3				Grey.
„ No. 4				Very dark grey.
„ No. 5				Black.
No. 6				Dense black.

For the purpose of smoke-nuisances inspection only scales Nos. 4, 5 and 6 are important. In Bombay and other areas to which the Act has been applied the emission of dense black smoke (scale 6) is prohibited. Scales Nos. 5 and 4 are related to scale No. 6 as follows :—One minute of scale No. 5 (black smoke) is taken as equal to '55 minute of scale No. 6 (dense black) and one minute of scale No. 4 (very dark grey) is taken as equal to '37 minute of scale No. 6.

On this basis, the average of smoke of the three highest densities was equal to '477 minute per hour of dense black smoke for each of the 2,600 observations of the chimneys for one hour in Bombay during the year, as compared with "51 minute per hour for the preceding year.

For the 172 observations of the chimneys for one hour at Karachi during the year the average emission was equal to 1*207 minutes per hour of dense black smoke as against 1*493 minutes per hour in the preceding year.

For the 1,049 observations of the chimneys for one hour at Ahmedabad the average emission was equal to 1*4 minutes per hour as against 2'23 minutes per hour in the preceding year.

9. There were at the close of the year 827 stationary chimneys in Bombay Island and Kurla, 65 in Karachi and 120 in Ahmedabad on the register of the Commission. During the year 4 new chimneys were brought on the register at Ahmedabad and none at Karachi. Besides the registered stationary chimneys there are many others connected to boilers of railways and road locomotives, road rollers and portable engines and, in the seaport towns, to steam ships, dredgers, tugs and launches. It is the Inspector's duty to see that the limits of emission allowed by the rules are not exceeded, and for this purpose he takes observations of the smoke emitted from these various chimneys indiscriminately, and also for the purpose of comparison and record he takes a series of observations of one hour each of emissions from stationary chimneys, from which an average emission for each month and subsequently an average for the year is compiled. This average is taken as representative of the total smoke emissions for the area throughout the year.

10. The following table shows the yearly average emission of smoke for Bombay, Karachi and Ahmedabad, since the statistics have been maintained :—

BOMBAY.					Scales Nos, 0, 5 and 4 reduced to scale No. G, i.e., dense black— Minutes per hour
Year.					
1013	February				11·6
1913	March				6·5
1914	„	..	..	..	1·86
1915	„	..	..	..	1·474
1916	„	..	..	..	1·432
1917	„	..	..	..	1·235
1918	„	..	..	..	1·203
1919	„	..	..	..	1·144
1920	„	..	..	..	1·254
1921	„	..	..	..	1·406
1922	„	..	..	..	1·82
1923	„	..	..	..	1·55
1924	„	..	..	..	1·949
1925	„	..	..	..	1·416
1926	„	..	..	..	1·116
1927	„	..	..	..	1·26
1928	„	..	..	..	1·104
1929	„	..	..	..	·61
1930	„	..	..	..	·51
1931	„	..	..	..	477
KARACHI.					
1922	(October 1921 to March 1922)				4·538
1923	March				221
1924	„				1·804
1925	„				2·37
1926	„				4·57
1927	„				2·765
1928	„				2·432
1929	„				1·705
1930	„				1·493
1931	„				1·207
AHMEDABAD.					
1924	(November 1923 to March 1924)	..			6·56
1925	March				3·95
1926	„	..	..	..	3·5
1927	„	..	..	..	2·68
1928	„	..	..	..	2·63
1929	„	..	..	..	9·00
1930	„	..	..	..	2·23
1931	„	..	..	..	1·4

11. The following notices and warnings were issued during the year:—

		Notices.	Intima- tions.	Statutory warnings.
Bombay	"Factories	417	19	<i>Nil</i>
	Locomotives	66	9	2
	Steam lorries	<i>Nil</i>	<i>Nil</i>	<i>Nil</i> .
	Road rollers, cranes and single boilers.	12	<i>Nil</i> .	<i>Nil</i>
	Steam ships	203	15	<i>Nil</i> .
	^Tugs and launches	11	<i>Nil</i> .	<i>Nil</i>
Karachi	'Factories	8	<i>Nil</i> .	1
	Locomotives	6	<i>Nil</i>	<i>Nil</i>
	Steam ships	12	2	<i>Nil</i>
Ahmedabad	"Factories	29	<i>Nil</i>	<i>Nil</i>
	Locomotives	5	<i>Nil</i> .	<i>Nil</i> .
	Road rollers, cranes and single boilers.	<i>Nil</i> .	<i>Nil</i> .	<i>Nil</i>

12. Twenty-two complaints were received from the public in Bombay during the year and measures were taken in each case to obviate the nuisance as far as possible.

Six complaints were received from the public in Karachi and steps were taken to minimise the nuisance. In one case the owner was asked to remove the furnace entirely, and this was done.

No complaint was received from the public in Ahmedabad during the year.

13. In Bombay the owner of a smithshop and coach factory was prosecuted for failing to erect a chimney within the prescribed time-limit. The case had not been disposed of at the end of the year.

No prosecution was instituted for any breach of the Act either at Karachi or Ahmedabad.

14. The draft rules under the Bombay Smoke-nuisances (Amendment) Act, 1929, regarding the erection, alteration, addition or re-erection of a furnace, flue or chimney were sanctioned by Government during the year. Some little difficulty will be experienced for the time being in getting factory owners to submit the plans of flues and chimneys. But it is satisfactory to note that in nearly all the new plans submitted to the Commission for approval, the owners have practically complied with the rules with regard to the alterations and additions. Similar difficulty is also likely to be felt in the matter of the under-sized chimneys that were first erected in several mills in the mofussil where the Act is in operation. The trade especially at Ahmedabad has gradually increased to such an extent that extensions have been necessary, and consequently the flue and chimney areas have been found too small for the larger plant. This is being obviated as far as possible by induced

Several of the engineering firms' representatives who are responsible for various erections of boiler plants, have consulted the Commission with regard to the new rules, and have expressed their desire to assist in making them a success.

15. Mr. J. Pratt was in charge of the office of the Chief Inspector of Steam Boilers and Smoke-nuisances throughout the year.

Mr. A. W. Marks was in charge of the smoke-nuisances inspection work in Bombay till 9th February 1931 when he was relieved by Mr. S. H. Thaker who was in charge of this work during the remainder of the year.

Mr. S. Gazdar was in charge of the smoke-nuisances inspection work at Karachi throughout the year.

Mr. J. Cubbon was in charge of the smoke-nuisances inspection work at Ahmedabad throughout the year.

Bombay, 20th May 1931.

J. W. SMYTH,

Collector and President,
Bombay Smoke-nuisances Commission.

Twenty-second Annual Report
of the
Bombay Smoke-nuisances
Commission

For the Year 1934-35

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**TWENTY-SECOND ANNUAL REPORT OF THE
BOMBAY SMOKE-NUISANCES COMMISSION
FOR THE YEAR 1934-35.**

1. This report covers the period from 1st April 1934 to 31st March 1935. The Commission consisted of the following members :—

President.

- (1) Mr. J. F. Gennings, C.B.E., Bar-at-Law, *Ex-officio*.
Commissioner of Labour.

Members.

- (2) Mr. P. B. Advani, M.Sc. Nominated by
(3) Mr. R. B. McGregor Government.
(4) Mr. E. G. Cameron
(5) Mr. W. F. Webb, M.I., Mare.E.
(6) Mr. W. A. Sutherland from 1st April 1934 Elected by the
to 29th November 1934. Bombay Mill-
Vacant from 30th November 1934 to }- owners' Associa-
22nd January 1935. tion.
Mr. Mark Binnie from 23rd January
1935 to 31st March 1935.
(7) Mr. H. F. Milne Elected by the
Chamber of
C o m m e r c e ,
Bombay,

SUB-COMMITTEE FOR KARACHI.

*Chairman**

- 11) Mr. G. F. S. Collins, C.I.E., O.B.E.} I.C.S., Collector of Karachi, from 1st j
April 1934 to 5th May 1934. . j
Mr. H. M. Willis, I.C.S., Collector of [Karachi, from 6th May 1934 to 5th V *Ex-officio*.
February 1935.
Mr. E. G. Taylor. I.C.S., Collector of Karachi, from 6th February 1935 to 31st March 1935.

Members.

- (2) Vacant from 1st April 1934 to 25th April' 1934. Nominated by
Mr. H. W. Huggins from 26th April Government.
1934 to 31st March 1935.

- (3) Mr. J. H. Patel Elected by the Karachi Municipality.
- (4) Mr. G. N. Gokhale, B.Se., L.C.E., M.I.E. (Iru!), I.S.K (Retired). Elected by the Factory-owners Karachi.

SUB-COMMITTEE FOR AHMEDABAD.

Chairman.

- (1) Mr. A. H. Dracup, P.A.. Collector of Ahmedabad. *Ex-officio.*

Members.

- (2) Mr. Ambarnath Bhattacharya, Executive Engineer, Ahmedabad Division. *Ex-officio,*
- (3) Colonel Sir B. H. Nanavaty, Kt., C.I.E. .. Elected by the Ahmedabad Municipality.
- (4) Sheth Sakarlal Balabhai Elected by the Millowners' Association, Ahmedabad.

2. During the year three meetings (*two* ordinary and one special) of the Commission were held at Bombay, one at Ahmedabad and one at Karachi.

3. In Bombay the time of one Inspector was mainly devoted to smoke nuisances inspection throughout the year.

In Karachi and Ahmedabad the work was done by Inspectors in addition to their boiler inspection work.

4. The following table summarises and compares the work of the year and that of the preceding year in the three areas :—

		Observations (A chimneys.	Visits to factories.	Tests of appliances.
Bombay	1033-14	3,514	776	46
	1014-35	3,658	822	58
Karachi	1003-34	288	322	Nil
	1014-35	244	267	Nil
Ahmedabad	1933-34	080	732	5
	1034-35	1,071	746	10
Total	1033-34	4,788	1,830	51
	{ 1034-35	5,573	1,835	68

;J. A comparison of the figures for the two years shows an increase in the number of observations, visits to factories and the tests of appliances. The practice of not taking short time observations along with the hourly observations has been continued.

While paying visits to the factories the opportunity is always taken to bring to the notice of the owners the necessity of submitting plans as required by section 9A (1) of the Act for the erection and addition or alteration of the furnaces and chimneys. This has resulted in the submission of more plans for the examination of the Commission.

Close co-operation between the Municipal authorities and the Smoke Nuisances Department has resulted in avoiding inconvenience to the factory owners. The License Department of the Municipality issues licenses as soon as their requirements are carried out without waiting for the requirements of the Smoke Nuisances Commission to be completed. This enables a factory to operate without delay although the liability to carry out work ordered by this Department still remains.

The decrease in the annual average emission of smoke has been steadily maintained. The desirability of using liquid fuel or coal of good quality for abating smoke nuisance in large plants is impressed upon the factory owners and the use of coke is advised in the case of small industrial concerns.

Smoke nuisance from the stationary chimneys of the 15. B. & C. I. Railway and the G. I. P. Railway, has steadily decreased and the nuisance from the locomotive funnels has been almost entirely eradicated as the result of the electrification of the local service.

Though shipping improved during the year under report the smoke nuisance in the Dock area was within permissible limits. A few offenders were served with prompt notices which had the desired effect.

The problem of domestic smoke is not controlled by the Smoke Nuisances Commission as this is dealt with by the Health Department of the Bombay Municipality. It is difficult to say what proportion of smoke nuisance is due to domestic and industrial smoke but considerable nuisance is caused by fire-places in private houses. This can be minimised by the use of gas and electricity both of which are easily available to consumers in Bombay. Hotels and restaurants are invariably advised to use either of these means to avoid complaints from neighbouring residents.

6. In Karachi the total number of observations and visits as compared with the last year's figures showed a decrease which was due to the transfers of Inspectors. The average emission of smoke for the year under report was less than in the previous year.

7. In Ahmedabad the number of observations, visits to factories and tests of appliances showed an increase over the last year's figures. The average emission of smoke was also less than the previous year.

A

8. The emission of smoke is recorded according to the following table :—

Scale No. 1	No smoke.
No. 2	Light grey.
„ No. 3	Grey.
.. No. 4	Very dark grey.
„ No. 5	Black.
„ No. 6	Dense black.

For the purpose of smoke nuisances inspection, only scales Nos. 4, 5 and 6 are important. In Bombay and other areas to which the Act has been applied, the emission of dense black smoke (scale No. 6) is prohibited. Scales Nos. 5 and 4 are related to scale No. 6 as follows :—

One minute of scale No. 5 (black smoke) is taken as equal to '55 minute of scale No. 6 (dense black smoke) and one minute of scale No. 4 (very dark grey) is taken as equal to '37 minute of scale No. 6.

On this basis the average emission of smoke was equal to * 377 minute per hour of dense black smoke for each of the 1,946 observations of the chimneys per hour in Bombay as compared with * 392 minute per hour in the preceding year.

For each of the 243 observations of the chimneys for one hour at Karachi during the year the average emission was equal to ' 836 minute per hour of dense black smoke as against 1' 554 minutes per hour for the preceding year.

For each of 1,513 observations of the chimneys for one hour at Ahmedabad, the average emission was equal to *97 minute per hour as compared with 1*52 per hour for the preceding year.

9. There were at the close of the year 944 stationary chimneys in Bombay Island and Kurla, 51 in Karachi and 153 in Ahmedabad on the Register of the Commission. The above figures represent the number of existing chimneys only, those removed being struck off the Register. During the year 103 chimneys were added to the Register in Bombay none at Karachi and 5 at Ahmedabad. In addition to the registered stationary chimneys there is a large number of portable chimneys controlled by the Commission such as those connected to railway locomotives, road-rollers, portable engines, steam ships and launches, etc.

10. Observations are taken daily of the smoke emitted from the various chimneys to see that it does not exceed the limits prescribed under the Rules. For the purpose of comparison and record a series of observations of one hour duration are taken from which is compiled an average emission for each month and subsequently an average for the year. This average is taken as representative of the total smoke emissions for the area throughout the year. The following table shows the

yearly average emission of smoke for Bombay, Karachi and Ahmedabad since the statistics have been maintained :—

BOMBAY.

Year.					ficals Nos. C, 5 and 4 reduced to Scale No. 6, i.e. $\frac{1}{2}$ inmo black, minutes per hour.
1013	February				.. 11 | 6
1913	March				6 | 5
1914	)				1 | 86
1915	> T	..	..		1 | 474
1910					1 | 432
1917	i y				1 | 235
1918	i J				1 | 203
1919	i <				1 | 144
1920	J i	..	..	..	1 | 254
1921	>*				1 | 406
1922	t.	..	..	..	1 | 82
1923					1 | 55
1924	* i				1 | 949
1925	)	> .	. «	..	1 | 416
1920	) i				1 | 14G
3927					1 | 26
1928	i .				1 | 104
1929	>«				61
1930					51
1931					477
1932	) i				623
1933	»»				430
1934	)»				392
1935	i *				377

KARACHI.

1922	{October 1921 to March 1922)				4 | 538
1923	March				.. 2 | 221
1924	) i				1 | S04
1925	> s	.	..	..	2 | 37
1926	7 J				.. 4 | 57
1927	» J				2 | 765
1928	J >				.. 2 | 432
1929	) J				1 | 705
1930	? J				.. 1 | 493
1931	i i	.. .			.. 1 | 207
1932	i >				1 | 411
1933	s i				1 | 283
1934	)				.. 1 | 554
1935	J J				•836

AIIMEDA BAP.

1024 (November 1923 to March 1924)	..	G	56
1925 March			3 95
1926	..		3 5
1927 „			2 68
1928 „	..		2 63
1929	..		2 00
1930 „	..		2 23
1931 „	..		1 4
1932 „		I	59
1933 .. ..	..		1 73
1934 „	..		1 52
1935 „			97

11. The foliowin-r notices and warnings were issued during the year :—

		Notices.	Intimations.	Statutory warnings.
Bombay	Factories	139		
	Locomotives	1	Nil	Nil
	Steam Lorries, Road- Hollers. Cranes and single boilers		Nil	Nil
	! Steam ships ..	15		Nil
	! Tugs and Launches	1	Nil	Nil
Karachi	f Factories	3	Nil	Nil
	- Locomotives ..	3	Nil	Nil
	^ Steam ships	7	Nil	Nil
Ahmcdabad	f Factories	128	Nil	
	J Locomotives ..	20	Nil	Nil
	| Road-Hollers, Cranes and \\ yinyle boilers	Nil	Nil	Nil

12. Forty complaint", were received from the public in Bombay during the year and all possible steps were taken to minimise the nuisance complained of. The majority of complaints were against s nail concerns.

No complaints were received from the public at Karachi while only o.ie was received at Ahmedabad.

13. In Bombay three prosecutions were filed during the year. The managers and engineers of the Jam Mills, Lai Bang, Parol, and the Victoria Mills, Gaindevi, were charged under Rule 23 (3) for excessive smoke emission from the mill chimneys. In each case the offenders were convicted and the engineers were fined R;;. 50 and Rs. 40 respectively while the manager of the Victoria Mills was fined Rs. 15.

The owner of a small dyeing works was charged under section OA (2) for the use of furnaces not approved by the Smoke Nuisances Commission ; he was convicted and fined Rs. 20.

No prosecutions were instituted at Karachi or at Ahmedabad.

14. During the year the Commission examined at Bombay six plans of proposed flues and chimneys, seven at Ahmedabad and one at Karachi. The plans submitted at Bombay were in connection with new concerns. Of the seven plans of flues and chimneys dealt with under section 9A of the Act at Ahmedabad two related to new concerns and the remainder, also one at Karachi, were for additions and alterations in existing plants.

15. For the first time since the Bombay Smoke Nuisances Act came into operation in 1913 an attempt was made during the year under review to ascertain by scientific means the extent of the air pollution in the city. Mr. Y. G. Naik, M.Sc., of the Royal Institute of Science was authorised by the Smoke Nuisances Commission to carry out the investigation and his reports are in the following appendix.

The method adopted was to calculate the number of particles in 1 cubic centimetre of air taken from various parts of the city and as this has been done in many industrial towns in the United Kingdom by somewhat similar apparatus it is possible to compare the results.

The first observations were taken over a period of seven days from 28th March 1934, samples of air being taken at six different places in the mornings and evenings. The graphs and tabulated readings are shown in Mr. Naik's report and during this period the average was roughly 2,500 particles of soot or dust in the mornings which increased to 3,300 in the evenings. It will be noticed that this represents, the air pollution in the industrial areas, as the particles in the air on Malabar Hill and at the Band Stand, Fort, were practically nil and accordingly the actual average for the city is less than represented by the figures given above. During the tests the wind varied from SW to NW with a velocity of 5 to 8 miles per hour.

Further tests were carried out in the same areas during the monsoon so that the amount of dust particles in the samples taken in March and April could be roughly estimated. These tests were made on several days between July 21st and August 7th while the ground was damp and weather fair. The report shows that the average was approximately 2,000 particles in the morning and 2,500 particles per cubic centimetre in the evening, the wind velocity being 7*6 to 13*4 miles per hour from SW to N Westerly direction.

From these investigations it may be deduced that in the non-monsoon periods dust is responsible for 17 per cent, of the total particles in the mornings and for 25 per cent, during the evenings as shown below ;—

Morning average—•

Non-monsoon	..	2,440 particles per cubic centimetre.
Monsoon	..	2,027 particles per cubic centimetre.

Decrease

Evening average—

Non-monsoon	..	3,325 particles per cubic centimetre.
Monsoon	..	2,507 particles per cubic centimetre.
Decrease	..	818 or 25 per cent.

The remaining percentage in each case may be considered as deposit discharged from chimneys 'but Mr. M. Birmie, a member of the Commission, points out that " in the mill area there is discharged from the dust towers in each mill tremendous quantities of fine cotton dust, and it is quite possible that this dust has some effect on the quantity of particles per cubic centimetre and not only smoke and road dust. In the mill area fine gauze mosquito screens are loaded with this cotton dust in only a few days time, and soot or black smuts not evident. Some dust towers are much worse than others and the discharge can be reduced by baffles or cyclone dust extractors."

These results will bear comparison with industrial towns in the United Kingdom. According to the reports of the Meteorological Office, Air Ministry, London, tests taken in various cities on similar lines give results as follows :—

Stoke	..	7,500 particles per cubic centimetre.
Hull	..	1-1,000 particles per cubic centimetre.
Sheffield	..	30,000 particles per cubic centimetre.

A considerable number of tests have been taken in London and while these in normal periods show an average of 5,000, it is generally between 20,000 and 50,000 during foggy weather.

The work carried out by Mr. Naik has been valuable and instructive and it is hoped at a later date that further scientific tests will be made whereby the deposit or impurities in the atmosphere may be analysed.

16. Mr. J. Pratt was in charge of the office of the Chief Inspector of Steam Boilers and Smoke Nuisances throughout the year.

Messrs. Thaker and Cubbon were in charge of the smoke nuisances work at Bombay and Ahmedabad respectively and Messrs. Gazdar (from 1st April 1931 to 11th April 1934) and Tuffield from 12th April 1934 to 31st March 1935) dealt with the smoke nuisances work at Karachi during the year.

The Commission was satisfied with the work done by the staff.

The thanks of the Commission are due to the Mill and factory-owners, heads of engineering departments, public bodies, shipping agencies, etc., for their cordial co-operation with the Inspectors in securing the abatement of smoke nuisance by dealing departmentally with drivers and firemen found to be careless in causing unnecessary smoke.

J. F. GENNINGS,
Commissioner of Labour and President,
Bombay Smoke Nuisances Commission.

Bombay, 20th June 1935.

APPENDIX.

REPORT ON THE INVESTIGATIONS OF THE POLLUTION OF
BOMBAY AIR BY SMOKE.

(Y. G. Naik, M.Sc, Royal Institute of Science, Bombay.)

The investigations were taken up on the 20th March 1934. In all six places were selected for comparative m^aismvini'iiiv The selected places were :—

- (1) Band Stand, Fort Area.
- (2) Phirojshah Mehta Gardens, Malbnr Hills.
- (3) Byculla Bridge.
- (4) Lalbaug Tram Terminus.
- (5) Fergusson Road, Parol.
- (6) Sewri.

Only two sets of observations were taken at Band Stand and Phirojshah Gardens for comparative studies, while a series of observations, lasting for 7 days, were taken, samples of air being collected both in the mornings and evenings.'

The method of estimation of smoke particles depends on the following principle. The sample of air was collected in specially designed flask and was then introduced into an observation flask known as Wilson Chamber. When sudden expansion is created in this chamber, the water vapour becomes super-saturated and a cloud is formed by the condensation of the extra water vapour on the smoke particles contained in the air sample. By observing the size of the cloud particles and the quantity of water vapour condensed the number of smoke particles in the particular sample can be estimated. The size of the cloud particles was determined by observing the diameter of the corona ring seen when looked at a source of light through the cloud. The quantity of water vapour condensed was calculated by noting the expansion created.

The results of the present investigations are given below :—

Morning Observations.

Date.	Time. A. M.	Byculla Bridge.	Lalbaug.	Fergusson Road.	Sewri.
March 29	7—8	1,760*	1,990	2,130	2,490
3U	6—7	2,130	1,460	2,420	2,910
31	6—7	2,650	2,640	3,290	5,030
April 1	7—8	1,860	2,920	4,240	1,600
2	8—9	1,400	1,060	1,500	880
3	8—9	1,450	1,510	2,140	3,550
4	7—8	2,270	2,860	4,090	4,260

Evening Observations.

Date.		Time P.M.	Byculla Bridge.	Lalbaug,	Fergusson Road.	Sewrij
March	29	7-8	3.540	3.490	3.750	2.920
	30	8-9	3,290	2.780	3.680	4,090
	31	10-11	3.3(H)	2,040	4.500	2,000
April	1	7-8	1.990	3,300	1,990	1.490
	o	9-10	3.100	2.730	3.410	1.990
	3	7-8	3.420	7.060	5.630	3,980
	4	7-8	3.230	3.040	4.500	2.920

* The number under each centre represent*) the unruiler of smoke particles pov cubic centimetre of air.

The samples of air from Band Stand and Phirojshah Merita Garden? did not give rise to any cloud in the observation flask, indicating thereto that the number of smoke particles must be less than 100 per cubic centimetre which is the least number observable with this apparatus.

For comparative study of smoke pollution at various places, a numbcil of graphs of all the above observations and the interpretations are giver below.

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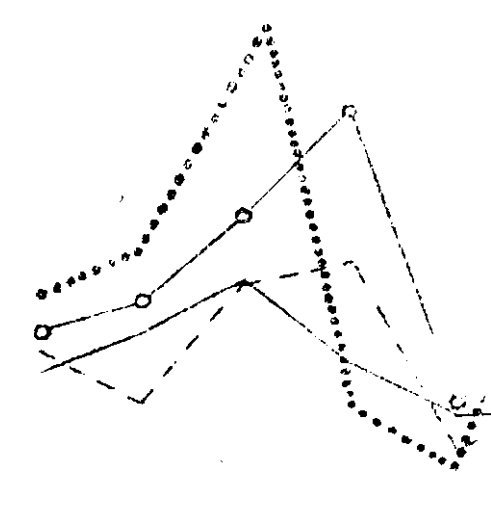
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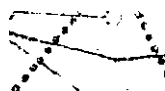
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The morning graphs for Sewri show a remarkable phenomenon :—

(I) The evening pollution is less but the morning pollution on week days except Sundays and Mondays is considerably higher than at other places. (II) On Monday, however, the morning pollution is the least of all. Both these facts can be explained if we suppose that during night, the wind carrying smoke from Parel locality drifts towards the East and causes a greater pollution towards that side. The sudden decrease in pollution on Monday may be traced to the fact that on Sunday the mills remain closed and that there is practically no traffic in that area.

From the evening graphs, it is quite evident that :

(I) The Fergusson Road locality is more affected by smoke than any other. The smoke pollution can, on average, be taken in the following increasing order :—

(i) Sewri, (ii) Byculla, (iii) Lalbaug, (iv) Fergusson Road.

(II) The number of smoke particles in general varies at all these places between 2,000 to 4,000 particles per cubic centimetre of air. On the 3rd April, however, there is a sudden increase to be observed in Lalbaug and Fergusson Road areas. Sewri shows the least pollution on an average.

Part of the pollution at Byculla and Lalbaug may be attributed to the heavy volumes of traffic, whereas the pollution at Fergusson Road may be principally due to the smoke discharged by the mills.

In general an idea of smoke pollution can be had by comparing these results with those at the Band Stand and Phirojshah Mehta Gardens, where the apparatus failed to show any appreciable pollution.

Thanks are due to the authorities of the Royal Institute of Science, Bombay, for giving the necessary permission to conduct these investigations.

Monsoon Observations.

In continuation of the previous work, the present investigations were carried out mainly to study what variations take place in the number of smoke particles in the rainy season. It is possible that particles other than smoke may be eliminated under suitable conditions by rain. The observations were again taken at the four previous centres; viz. Byculla Bridge, Lalbaug, Fergusson Road and Sewri. For every observation a suitable day was selected.

The first morning observation was taken on 21st July, when there was practically no rain on the previous night, but it did rain on the preceding day. The next morning selected was 27th July.

The first evening sample of air was collected on the 26th July and on that day it rained till about 11 a.m. It was after a long interval that 7th August was found suitable for another evening observation. The whole day was dry and there was a heavy shower on the preceding night.

The results of the investigations are given below in table A. In order to compare these results with those obtained previously the average value of the number of smoke particles for both the investigations are tabulated in table B.

It is not easily possible to interpret the variations that take place at a particular place in its fullest detail unless a very prolonged investigation is carried out to study the effect of wind, traffic and rain. Still an approximate idea as to the variation due to rain can be had from these results.

TABLE A.

Centre.	Number of smoke particles per cubic centimeter.			
	Morning results.		Evening results.	
	21st July.	27th July.	26th July.	7th August.
Byculla Bridge	2,490	2,270	3,240*	2,280
Lalbaug	2,030	2,390	1,490	2,940
Fergusson Road	2,030	2,490	2,880	3,170
Sewri	990	1,530	1,090	2,390

TABLE B.

Centre.	Average number of smoke particles per cubic centimeter.			
	Morning results.		Evening results.	
	Previous.	Monsoon.	Previous.	Monsoon.
Byculla Bridge	1,930	2,380	2,990	3,050
Lalbaug	2,060	2,210	3,570	2,215
Fergusson Road	2,830	2,260	3,950	3,025
Sewri	2,940	1,200	2,780	1,740

From table A it is evident that the number of smoke particles in the evening is higher than the number in the morning.

From the average results in table B it appears that there is no uniform variation in the number of smoke particles in the morning on account of rain.

The evening averages, however, point out clearly that there is a regular decrease in the number of smoke particles to the extent of about 1,000 to 1,200 per cubic centimeter with the only exception of Byculla on account of the result marked (*) in Table A.

We can therefore assume that the number of particles other than of smoke are not more than about 1,200 per cubic centimeter.

**TWENTY-THIRD ANNUAL REPORT OF THE BOMBAY
SMOKE NUISANCES COMMISSION FOR THE
YEAR 1935-36,**

1. This report covers the period from 1st April 1935 to 31st March 1936. The Commission consisted of the following members :

President.

- <1) Mr. J. F. Geimings, C.B.E., Bar-at-Law,"
Commissioner of Labour, from 1st
April 1935 to 15th March 1936.
Mr. S. R. Deshpande, B.A., B. Litt.)**Ex-officio*.
(Oxon.), Officiating Commissioner of
Labour, from 16th March 1936 to
31st March 1936.

Members.

- | | | |
|-----------------------------------|--------------|--|
| (i) Mr. P. B. Advani, M.Sc. | ~] Nominated | by |
| (3) Mr. R. B. McGregor | , y | Government. |
| (4) Mr. E. G. Cameron | •J | |
| (5) Mr. W. F. Webb, M.I. Mare. E. |) | Elected by the |
| (6) Mr. Mark Binnie | j | Bombay Mill-
owners' Associa-
tion. |
| (7) Mr. H. F. Milne .. | . | Elected by the
Chamber of
Commerce, Bom-
bay, |

SUB-COMMITTEE FOR KARACHI.

Chairman.

- (I) Mr. E. G. Taylor, I.C.S., Collector of *^officio*.
Karachi.

Members.

- (2) Mr. H. W. Huggins, from 1st April 1935^{^1}
to 31st December 1935.)> Nominated by
Mr. S. E. Naylor, from 1st January 1936 [Government,
to 31st March 1936. j
- (3) Mr. J. H. Petel Elected by the
Karachi Municipality.

- (4) Mr. G. N. Gokhale, B.Sc., L.C.E., M.I.E. (Ind.), I.S.E. (Retired), from 1st April 1935 to 31st December 1935. Elected by the Factory Owners, Karachi.
- Prof. S. B. Junnarkar, B.Sc. (London), from 1st January 1936 to 31st March 1936. J

SUB-COMMITTEE FOR AHMEDABAD.

Chairman'

- {\} Mr. A. H. Dracup, B.A. (Cantab.)," Collector of Ahmedabad, from 1st April 1935 to 17th October 1935.
- Mr. D. R. Pradlian, I.C.S., Collector of Ahmedabad, from 18th October 1935 J> *Ex-officio.* to 15th November 1935.
- Mr. V. S. Bhide, I.C.S., Collector of Ahmedabad, from 16th November 1935 to 31st March 1936.

Members.

- (2) Mr. Ambarnath Bhattacharya, Executive" Engineer, Ahmedabad Division, from j 1st April 1935 to 11th April 1935. | Rao Saheb S. G. Pandya, Executive | Engineer, Ahmedabad Division, from y *Ex-officio.* 12th April 1935 to 11th June 1935. Mr. R. G. Sule, Executive Engineer, Ahmedabad Division, from 12th June 1935 to 31st March 1936.
- (3) Colonel Sir B. H. Nanavaty, Kt., C.J.E.,1 from 1st April 1935 to 31st December 1935. Elected by the y Ahmedabad Muni- Mr. Hariprasad V. Desai, from 1st I cipality. J January 1936 to 31st March 1936. J
- (4) Seth Sakarlal Balabhai, M.L.C. Elected by the • Millowners' Association, Ahmedabad.

2. During the year two meetings of the Commission were held at Bombay, one at Ahmedabad and one at Karachi.

3. In Bombay the time of one Inspector was mainly devoted to smoke nuisances inspection throughout the year.

In Karachi and Ahmedabad the work was done by Inspectors in addition to their boiler inspection work.

4. The following table summarises and compares the work of the year and that of the preceding year in the three areas :—

		Observations of ohimncys.	Visits to factories.	Test of appliances
Bombay	/ 1934-35	3,658	822	58
	1 1935-36	2,484	554	109
Karachi	f 1934-35	244	267	Nil
	I 1935-36	347	427	Nil
Ahmedabad	I 1934-35	1,671	746	10
	\ 1935-36	1,266	694	13
Total	{ 1934-35	5,573	1,835	68
	{ 1935-36	4,097	1,675	122

5. A change of personnel during the year under report is largely responsible for the considerable variations in the comparative figures of the last two years. Almost all the observations taken were of a full hour's duration and those factories which were consistent offenders were visited and in such cases valuable data collected which helped towards minimising smoke nuisance. In many instances the collection of such data proved to the mill or factory authorities that an increase of their boiler power would solve the problem of excessive smoke emission. Appliances for testing furnace draught, flue temperature and analysis of flue gases were freely utilised during the year. This in addition to being useful in bringing about an abatement of smoke was also a great help to the owners in effecting economies in the fuel consumption of their plants. It is satisfactory to be able to state that in every instance, the fullest co-operation was extended by the mill and factory authorities.

Complaints regarding smoke nuisance forwarded by the Municipality show a steady tendency to decrease. By far the greatest number of complaints related to nuisances from metal casting bhutties, so much so that it became necessary to take up the question with the Municipality for amending the license laws governing this trade by refusing the use of premises for this purpose where there were dwellings overhead.

6. In Karachi a marked increase in the number of observations and visits is shown with a corresponding decline in the average smoke limit.

7. Ahmedabad like Bombay experienced a change of Inspectors and the observations and visits recorded were lower in consequence than the previous year. The Inspector in Ahmedabad draws attention to the fact that it is gratifying to record that increasing interest is shown by factory owners to minimise smoke nuisance which results ultimately in economic gain to themselves and a general improvement of the public health.

8. The emission of smoke is recorded according to the following table :—

Scale No. 1	..	..	..	No smoke.
No. 2	..	- •	• •	Light grey.
No. 3	..	• •	• •	Grey.
No. 4	. •	- •	- -	Very dark grey.
No. 5	..	..	..	Black.
No. 6	..	..	- •	Dense black.

For the purpose of smoke nuisance inspection, only scales Nos. 4, 5 and 6 are important. In Bombay and other areas to which the Act has been applied, the emission of dense black smoke (scale No. 6) is prohibited. Scales Nos. 5 and 4 are related to scale No. 6 as follows :—

One minute of scale No. 5 (black smoke) is taken as equal to "55 minute of scale No. 0 (dense black smoke) and one minute of scale No. 4 (very dark grey) is taken as equal to '37 minute of scale No. 6.

On this basis the average emission of smoke was equal to "411 minfite per hour of dense black smoke for each of the 2,349 observations of the chimneys per hour in Bombay as compared with * 377 minute per hour in the preceding year.

For each of the 345 observations of the chimneys for one hour at Karachi during the year, the average emission was equal to '770 minute per hour of dense black smoke as against "830 minute per hour for the preceding year.

For each of 1,140 observations of the chimneys for one hour at Ahmedabad, the average emission was equal to • 99 minute per hour as compared with ' 97 per hour for the preceding year.

9. There were at the close of the year 1,003 stationary chimneys in Bombay Island and Kurla, 52 in Karachi and 14G in Ahmedabad on the Register of the Commission. The above figures represent the number of existing chimneys only, those removed being struck off the Register.. During the year 59 chimneys were added to the Register in Bombay, one at Karachi and three at Ahmedabad. In addition to the registered stationary chimneys, there is a large number of portable chimneys controlled by the Commission such as those connected to railway locomotives, road-rollers, portable engines, steamships and launches, etc.

10. Observations are taken daily of the smoke emitted from the various chimneys to see that they do not exceed the limits prescribed under the Rules. For the purpose of comparison and record, a series of observations of one hour duration are taken, from which is compiled an average emission for each month and subsequently an average for the year. This total is taken as representative of the average smoke emissions for the area throughout the year. The following table shows the yearb"

average emission of smoke for Bombay, Karachi and Ahmedabad since statistics have been maintained :- --

BOMBAY.

				Scales Nos. 6, 5 and 4 reduced to scale No. 6, <i>i.e.</i> , dense black, minutes per hour.
1913	Felnmrv			.. 11-6
1913	March	..	• .	.. 6-5
1914	W	• •	t A	.. 1-86
1915				1'474
1916	^,			.. T432
1917	i i			1-235
1918	J7	• .	• .	.. 1" 203
1919	5)			1'144
1920	)'			1-254
1921	J1			1'406
1922				1*82
1923	J)	' ,	' ,	.. 1-55
1924	57			1-949
1925	7)	..	. •	.. > 1-416
1926		R •	• i	.. r . 1-146
1927	TT			.. 1*26
1928	17			.. 1-104
1929	77	• •	• .	.. r . •61
1930		• •	* .	.. , . '51
1931	17			'477
1932	> J			• 623
1933	? 7			• 430
1934	: ?			'392
1935	• >			- 377
1936				• 411

KAEACKI.

1922	(October 1921 to March 1922)			.. 4-538
1923	March			2-221
1924	i)			.. 1-804
1925	i)	« .	R .	.. 2-37
1926	i)			.. 457
1927	R>	• •	• .	.. , • 2-765
1928	5	r' 4	• .	.. , . 2-432
1929	7J	• •	• .	.. 1-705
1930	1>			1-493
1931	• >	- •	• .	- 1-207
1932				.. 1-411
1933		* *	• .	.. * • 1-283

Year.	Scales Nos. 0, 5 and 4 reduced to scale No. 6, i.e., dense black, minutes per hour.		
1934 March	1 5 5 4
1935 „	"836
1936	-	"776

AHMEDABAD.

1924 (November 1923 to March 1924)	6	56
1925 March	3	95
1926	0	5
1927	9	68
1928	2	63
1929	2	00
1930	2	23
1931	1	4
1932	1	59
1933	1	73
1934	1	52
1935		97
1936		99

11. The following notices and warnings were issued during the year

	Notices.	Intimations.	Statutory warnings.	
Bombay	Factories	448	26	25
	Locomotives	2	Nil	Nil
	Steam Lorries, Road- Rollers, Cranes and single boilers	16	3	2
	Steamships	1	Nil	Nil
	Tugs and Launches	mi	Nil	Nil
Karachi	Factories	4	1	Nil
	Locomotives	Nil	Nil	Nil
	Steamships	8	1	Nil
Ahmedabad ..	Factories	127	1	6
	Locomotives	5	Nil	Nil
	Road-Rollers, Cranes and single boilers	Nil	Nil	Nil

12. Twenty-nine complaints were received from the public in Bombay during the year and all possible steps were taken to minimise the nuisance complained of. Almost all these complaints were against small concerns.

One complaint was received from the public at Karachi while no complaint was received at Ahmedabad.

13. In Bombay two prosecutions were filed during the year. The managers and engineers of the Victoria Mills, Limited, Gamdevi, and the Khatau Makanji Spinning and Weaving Mills, Company, Limited, Byculla, were charged under Rule 23 (3) for excessive smoke emission from the mill chimneys. In both the cases the offenders were convicted and the manager and engineer of the former were fined Rs. 105 each for seven consecutive offences at the rate of Rs. 15 per offence, while the manager and engineer of the latter mill were fined Rs. 5 and Rs. 20 respectively.

No prosecutions were instituted at Karachi or at Ahmedabad.

14. During the year the Commission examined at Bombay thirteen plans of proposed flues and chimneys, two at Ahmedabad and none at Karachi. Out of the thirteen plans of flues and chimneys dealt with under Section 9A (1) of the Act at Bombay, twelve related to new concerns and the remaining one and two at Ahmedabad were for alterations and additions to existing plants.

15. Mr. J. Pratt was in charge of the office of the Chief Inspector of Steam Boilers and Smoke Nuisances throughout the year.

Messrs. Thaker (from 1st April 1935 to 22nd April 1935) and Everett (from 23rd April 1935 to 31st March 1936) were in charge of the smoke nuisances work at Bombay, Messrs. Cubbon (from 1st April 1935 to 30th September 1935) and Thaker (from 1st October 1935 to 31st March 1936) at Ahmedabad, while Mr. A. J. Tuffield dealt with the smoke nuisance work at Karachi during the year.

The Commission was satisfied with the work done by the staff.

The thanks of the Commission are due to the mill and factory owners, heads of engineering departments, public bodies, shipping agencies, etc., for their cordial co-operation with the Inspectors in securing the abatement of smoke nuisance, by dealing departmentally with negligent drivers and firemen responsible for causing unnecessary smoke.

A. H. DRACUP,
 Officiating Commissioner of Labour
 and President, Bombay Smoke
 Nuisances Commission.

.Bombay, 26th May 1926.

Twenty-fifth Annual Report of
the Bombay Smoke-nuisances
Commission

For the Year 1937-38

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**TWENTY-FIFTH ANNUAL REPORT OF THE
BOMBAY SMOKE NUISANCES COMMISSION
FOR THE YEAR 1937-38.**

This report covers the period from 1st April 1937 to 31st March 1938.
The Commission consisted of the following members :—

President.

- (1) Mr. J. F. Gennings, C.B.E., Bar-at-Law, *Ex-officio.*
Commissioner of Labour.

Members.

- | | |
|----------------------------------|--------------------|
| (2) Mr. P. B. Advani, M.Sc. | |
| (3) Mr. R. B. McGregor | Nominated by |
| (4) Mr. E. G. Cameron | Government. |
| (5) Mr. W. F. AVebb, M.I. Mar.E. | ~\ Elected by the |
| | £ Bombay Mill- |
| (6) Mr. Mark Binnie | } owners' Associa- |
| | tion. |
| (7) Mr. H. F. Milne | Elected by the |
| | Chamber of |
| | Commerce, Bom- |
| | bay. |

SUE-COMMITTEE FOR AHMEDABAD.

Chairman.

- (1) Mr. D. MacLachlan, I.C.S., Collector of
Ahmedabad, from 1st April 1937 to
26th March 1938. *^Ex-officio.*
Mr. G. G. Drewe, I.C.S., Collector of
Ahmedabad, from 27th March 1938 to
31st March 1938.

Members.

- (2) Mr. R. G. Sule, Executive Engineer,
Ahmedabad Division, from 1st April
1937 to 21st March 1938. *VEx-officio.*
Mr. B. S. Vyas, Executive Engineer,
Ahmedabad Division, from 22nd March
1938 to 31st March 1938.

- (3) Dr. Hariprasad Vrajrai Desai .. Elected by the Ahmedabad Municipality.
- (4) Sheth Sakarlal Balabhai, from 1st April \ Elected by the 1937 to 31st December 1937. | Millowners' Association, Ahmedabad.
Sheth Nanddas Haridas, from 1st January [elation, Ahmedabad. J

During the year one meeting of the Commission was held in Bombay and the Sub-Committee met once in Ahmedabad.

In Bombay the time of one Inspector was mainly devoted to smoke nuisances inspection throughout the year while in Ahmedabad the work was done by the resident Inspector in addition to his boiler inspection duties.

The following table summarises and compares the work of the year and that of preceding year in the two areas :—

			Observations of chimneys	Visits to factories.	Tests of appliances.
Bombay	f 1936-37 ..		2,586	502	206
	\ 1937-38 ..		3,004	757	121
Ahmedabad	f 1930-37 ..		1,509	692	23
	\ 1937-38 ..		1,826	790	26
Total	J 1936-37 ..		4,095	1,194	229
	\, 1937-38 ..		4,830	1,547	147

The changing of the mills and factories from coal to oil fuel still continues in Bombay. The number of inspections has increased while the number of tests of appliances has decreased as compared with the figures of the last year, but visits were paid to see that the instructions issued previously were being properly attended to. The number of complaints forwarded by the Municipality and by the public direct to this office shows a slight increase.-

In Ahmedabad the number of observations, visits to factories and tests of appliances showed an increase over last year's figures. During the year the scientific investigation of 'air pollution in Ahmedabad City on the lines carried out in Bombay in the year 1934 was sanctioned, and Mr. Y. G. Naik, M.Sc, of the Royal Institute of Science, was authorised by the Bombay Smoke Nuisances Commission to carry out the work.

The emission of smoke is recorded according to the following table :—

Scale No. 1	. No smoke.
„ No. 2	. Light grey.
„ No. 3	. Grey.
„ No. 4	. Very dark grey.
„ No. 5	. Black.
„ No. 6	. Dense black.

For the purpose of smoke nuisance inspection, only scales Nos. 5 and 6 are important. In Bombay and other areas to which the Act has been applied the emission of dense black smoke (Scale No. 6) is prohibited. Scales Nos. 5 and 4, are related to scale No. 6 as follows :—

One minute of scale No. 5 (black smoke) is taken as equal to '55 minute of scale No. 6 (dense black smoke) and one minute of scale No. 4 (very dark grey) is taken as equal to '37 minute of scale No. 6.

On this basis the average emission of smoke was equal to '493 minute per hour of dense black smoke for each of the 2,565 observations of the chimneys per hour in Bombay as compared with '499 minute per hour in the preceding year.

For each of the 1,328 observations of the chimneys for one hour at Ahmedabad, the average emission was equal to 1 • 01 minutes per hour as compared with '99 per hour for the preceding year.

There were at the close of the year 1,102 stationary chimneys in Bombay Island and Coorla and 150 in Ahmedabad on the Register of the Commission. The above figures represent the number of existing chimneys only, those removed being struck off the Register. During the year 71 chimneys were added to the Register in Bombay and 3 at Ahmedabad. In addition to the registered stationary chimneys, there are many portable chimneys controlled by the Commission such as those connected to railway locomotives, road-rollers, portable engines, steam ships and launches, etc.

Observations are taken daily of the smoke emitted from the various chimneys to see that they do not exceed the limits prescribed under the Rules. For the purpose of comparison and record a series of observations of one hour duration are taken from which is compiled an average emission for each month and subsequently an average for the year. This total is taken as representative of the average smoke emissions for the area throughout the year. The following table shows the yearly average

emission of smoke for Bombay and Ahmedabad since statistics have been maintained :—

BOMBAY.

Year.	Scales Nos. 6, 0 and 4 reduced to scale No. (1, <i>i.e.</i> , dense black, minutes per hour.
1913 February	.. 11-6
1913 March	6-5
1914	186
1915	1-474
1916	•432
1917	•235
1918	1-203
1919	1-144
1920	1-254
1921	1-406
1922	1-82
1923	1-55
1924	1*949
1925	1-416
1926	1-146
1927	1-26
1928	1-104
1929	•61
1930	•51
1931	•477
1932	•623
1933	•430
1934	•392
1935	•377
1936 ,	•411
1937 ,	•499
1938	•493

AHMEDABAD.

1924 (November 1923 to March 1924)	6-50
1925 March	3-95
1926	3-5
1927	2-68
1928	2-63
1929	2-00
1930	2-23
1931	1-4
1932	1-59
1933	1-73
1934	1-52
1935	•97
1936	•99
1937	•99
1938	1-01

The following notices and warnings were issued during the year :-

		Notices.	Intima- tions.	Statutory warnings.
Bombay	Factories	429	4	
	Locomotives	8	<i>Nil.</i>	<i>Nil.</i>
	Steam lorries, road-rollers, cranes and single boilers	3	<i>Nil.</i>	<i>Nil.</i>
	Steam ships . . .	17	<i>Nil.</i>	<i>Nil.</i>
	Tugs and launches . .	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>
Ahmedabad	Factories	196	8	
	Locomotives	1	<i>Nil.</i>	<i>Nil.</i>
	Koad-rollers, cranes and single boilers	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>

Thirty-five complaints were received from the public in Bombay during the year and all possible steps were taken to minimise the nuisances complained of. Most of the complaints were against small concerns such as bakeries, sweetmeat shops, eating houses, metal casting bhuttis, etc.

No complaint was received from the public at Ahmedabad.

No prosecutions were filed during the year either in Bombay or at Ahmedabad.

During the year the Commission examined at Bombay six plans of proposed flues and chimneys and five at Ahmedabad. All the six plans in Bombay related to new concerns while the plans dealt with at Ahmedabad related to additions and alterations to the existing plants.

The thanks of the Commission are due to the mill and factory owners, heads of engineering departments, public bodies, shipping agencies, etc. for their cordial co-operation with the Inspectors in securing the abatement of smoke nuisance and by dealing departmentally with negligent drivers and firemen responsible for causing unnecessary smoke. Such co-operation is necessary if the best results are to be obtained and although domestic smoke is outside the scope of the Commission, the general public can also assist by using coke or other smokeless fuel or by adopting gas or electricity for cooking purposes.

As usual the officers of the Bombay Municipality and particularly those of the Health and Licensing Departments gave their full co-operation by forwarding complaints, supplying information regarding new and defective installations and advising complainants to get in touch with the Smoke Nuisances Department.

The Chief Inspector during a recent visit to Ahmedabad interviewed representatives of the Municipality to enlist their co-operation on the same lines, when it was decided that they should erect an observation tower equipped with a telephone, supply a smoke observer to work under the control of the resident Inspector and report cases of excessive smoke emission.

The report on the investigation carried out* by Mr. Naik concerning the atmospheric condition in Ahmedabad is attached. The results do not fully agree with those obtained by the Gujarat College in 1929 as at that time it was concluded that a considerable proportion of the " fog " was due to dust and domestic smoke. It is clear however that the density and quantity of the smoke emission from the mills is excessive but with the co-operation of the officers of the Municipality it is expected that better results will be obtained.

The Commission was satisfied with the work carried out by the inspecting staff during the year.

J. F. GENNINGS,
Commissioner of Labour and President,
Bombay Smoke Nuisances Commission.

Bombay, 27th May 1938.

APPENDIX.

REPORT ON THE INVESTIGATION OF THE POLLUTION OF AHMEDABAD AIR BY SMOKE.

(Y. G. NAIK, M. S. C., Royal Institute of Science, Bombay.)

The present investigation is made on similar lines to the Bombay one carried out in the year 1934. The actual number of solid smoke and dust particles in one cubic centimetre of air has been found out at various centres and on two different days. The samples of air were collected in specially designed aspirator flasks. A rubber balloon was fully blown into the flask thus displacing all the air, it originally contained. The balloon was then allowed to be deflated and consequently fresh smoke-bearing air from the particular centre entered the flask. A small known volume of air from this sample was sucked into an expansion chamber, containing some water. The air in the expansion chamber was then suddenly expanded. This resulted in the formation of a cloud of water drops. Originally the expansion chamber was free from any dust or smoke particles and hence a cloud could not be formed by mere expansion. It is only when there are dust or smoke particles that a cloud is formed. Each particle serves as a centre of condensation of water. The total quantity of water condensed can be calculated by knowing the expansion. The size of the drops can be determined by observing the radius of a corona ring seen in a cloud by looking through it at a distant source of light. By knowing the above factors, the number of particles per cubic centimetre can be estimated.

The days selected for taking measurements were the 4th and 7th November. All the mills remained closed on the 3rd, 4th and 5th, being Diwali holidays. The 4th November was chosen with a view to find out the impurities in air due to causes other than mill smoke. The mills began work on the 6th November and hence the following day was quite suitable to find the total pollution on a working day. Six different centres were chosen out of which four were selected in the busy mill area and two were selected outside the city limits and mill area. The results are tabulated below. The number in each column indicates the number of particles per cubic centimetre :—

Centres.	Number of particles per cubic centimetres.		
	November 4th evening 7-8 p.m.	November 7th morning 9-10 a.m.	November 7th evening 8-9 p.m.
(1) Naroda Road	2,540	6,4*50	14,690
(2) Gomatipur	2,360	8,630	13,720
(3) Bhadra	4,330	8,840	14,160
(4) Kalupur	2,770	9,430	15,080
* (5) Gujrat College	2,940	3,540	9,300
* (6) Shahibag	1,455	3,450	6,158
Average from 1-4	3,000	8,440	14,410

The first columns of the results are of special importance as they were taken on a day when no smoke from the mills could be expected to be present in the atmosphere. Whatever amount of smoke or dust that was observed on that day must therefore be attributed to smoke from domestic fire and dust due to traffic or wind. A place like Bhadra is of special interest. One finds a maximum pollution here as the traffic is the heaviest at this place. The Kalupur centre is also in a busy traffic locality and thus stands second highest. The difference in the Bhadra and the Kalupur results may be partly due to the smoke from Diwali crackers, which were more prominent in the Bhadra locality. Gomatipur and Naroda Road though thickly surrounded by mills show less pollution on account

*These centres are outside the city limits and mill area.

of less traffic. The place near Gujarat College also indicates a fairly high pollution. This must be due to the smoke from the city that diffused in that direction by a low wind which appeared to blow at about 5 miles per hour. The Shahibag area shows the least pollution, being situated outside the city limits and in a direction towards which the wind was not blowing from the city.

I. It is evident from the above results that on an average the pollution of Ahmedabad air by smoke and traffic dust is of about 3,000 particles per cubic centimetre.

The investigations of Bombay air in 1934 indicated that about 1,200 particles per cubic centimetre may be due to particles other than of mill smoke. The average Sunday evening result indicates a pollution of about 2,500 particles per cubic centimetre. Thus the pollution in Bombay due to dust and domestic fire can be taken to be about 2,000 particles per cubic centimetre.

II. The air in Ahmedabad, therefore, contains about 1,000 particles more per cubic centimetre of domestic smoke and traffic dust than in Bombay.

The results of the third column, which were taken in the morning on the 7th, indicate an average pollution in the city of about 5,440 particles per cubic centimetre. The average smoke pollution outside the city limits is of about 3,500 particles per cubic centimetre. If we subtract 3,000 particles other than of mill smoke, we get a pollution of about 5,440 particles per cubic centimetre of smoke particles from mills in the morning. The average morning nuisance in Bombay is about 2,440 particles per cubic centimetre of which about 1,200 particles are other than of mill smoke. Hence in Bombay the number of smoke particles from mills is about 1,200 per cubic centimetre.

III. One concludes from the above that in Ahmedabad there are about 8,440 particles per cubic centimetre in the air in the morning, of which about 5,440 particles are due to mill smoke alone.

IV. The pollution of Ahmedabad air by mill smoke in the morning is about 4.5 (= 5,440/1,200) times more than in Bombay.

One finds a considerable increase in the evening pollution of air. The smoke emitted by the mill chimneys during the course of the whole day slowly descends downwards and is responsible for the increase of the pollution. The average pollution in the city proper is of about 14,400 particles per cubic centimetre. The average pollution outside the city areas is about 7,500 particles per cubic centimetre. Assuming again that about 3,000 particles are due to other causes than the mills we find about 11,400 particles of smoke from mills in the evening. In Bombay the average number of particles in the evening is about 3,800 per cubic centimetre of which about 1,200 are of other than mill smoke; hence 2,400 particles per cubic centimetre are from mills alone.

V. It is therefore evident that there are over 14,000 particles per cubic centimetre in the Ahmedabad air in the evening of which about 11,000 particles are of mill smoke only.

VI. The evening pollution of the Ahmedabad air by mill smoke alone is 4.7 (= 11,400/2,400) times that in Bombay. It is seen from IV and VI that the ratio of the contents of the mill smoke in Ahmedabad to Bombay is about 4.7.

My thanks are due to the authorities of the Royal Institute of Science for allowing me to take a large number of apparatus to Ahmedabad, and giving me the necessary permission to earn out this investigation.

Twenty-sixth Annual Report of
the Bombay Smoke-nuisances
Commission

For the Year 1938-30

BOMBAY

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**TWENTY-SIXTH ANNUAL REPORT OF THE
BOMBAY SMOKE NUISANCES COMMISSION
FOR THE YEAR 1938-39.**

This report covers the period from 1st April 1938 to 31st March 1939. The Commission consisted of the following members :—

President.

- (1) Mr. J. F. Gennings, CLE., C.B.E., *Ex-officio.*
Bar-at-Law, Commissioner of
Labour.

Members.

- (2) Mr. P. B. Advani, from 1st April
1938 to 17th June 1938.
Bao Bahadur B. P. Jagtap, from
18th June 1938 to 31st March, ^{Nominated} by
_{ggg} (government.)
- (3) Mr. E. k McGregor ...
- (4) Mr. E. G. Cameron ...
- (5) Mr. W. F. Webb ...) Elected by the Bom-
(6) Mr. Mark Binnie ...) **bay** Millowners'
J Association.
- (7) Mr. H. F. Milne ...) Elected by the Cham-
ber of Commerce,
Bombay.

SUB-COMMITTEE FOR AHMEDABAD.

Chairman.

- (1) Mr. G. G. Drewe, I.C.S., Collector of *Ex-officio.*
Ahmedabad.

Members.

- (2) Mr. B. S. Vyas, I.S.E., Executive *Ex-officio.*
Engineer, Ahmedabad Division.
- (3) Dr. Hariprasad Vrajrai Desai ... Elected by the
Ahmedabad Muni-
cipality.
- (4) Seth Nanddas Haridas ... Elected by the Mill-
owners' Association,
Ahmedabad.

During the year two meetings of the Commission were held in Bombay and the Sub-Committee met once in Ahmedabad.

In Bombay, the time of one Inspector was mainly devoted to smoke nuisances inspection throughout the year, while in Ahmedabad the work was done by the Resident Inspector, in addition to his boiler inspection duties.

The following table summarises and compares the work of the year and that of the preceding year in the two areas :—

			[Observations ; of chimneys.	Visits to factories,	Test of appliances.
			I		
Bombay	...	f 1037-38	3,004	757	121
	...	\ 1938-39	2,987	753	43
Ahmedabad	...	(" 1937-38	1,826	790	26
	...	" 11938-39	1,793	• 663	23
Total		f1937-38	4,830	1,547	147
		1 1938-39	4,780	1,416	66

The changing of the mills and factories from coal to oil fuel still continues in Bombay. The number of inspections is nearly the same as last year and the number of tests of appliances has decreased as compared with the figures of the last year. The instructions issued by the Inspector are properly carried out, and it was not therefore necessary to pay visits for the same purpose. The number of complaints forwarded by the Municipality and by the public direct to this office, shows a slight increase.

In Ahmedabad the number of observations, visits to factories and tests of appliances showed a decrease over last year's figures, as the Smoke Inspector had to attend to the District boiler inspection work for more than a month.

The emission of smoke is recorded according to the following table :—

Scale No. 1	...	...	... No smoke.
„ No. 2	...	...	... Light grey.
No. 3	...	...	... Grey.
No. 4	...	...	... Very dark grey.
„ No. 5	...	...	... Black.
No. 6	...	...	... Dense black.

For the purpose of smoke nuisance inspection, only scales Nos. 4, 5 and 6 are important. In Bombay and other areas to which the

Act has been applied, the emission of dense black smoke (scale No. 6) is prohibited. Scales Nos. 5 and 4 are related to scale No. 6 as follows :—

One minute of scale No. 5 (black smoke) is taken as equal to *55 minute of scale No. 6 (dense black smoke) and one minute of scale No. 4 (very dark grey) is taken as equal to '37 minute of scale No. 6.

On this basis the average emission of smoke was equal to "524 minutes per hour of dense black smoke for each of 2,566 observations of the chimneys per hour in Bombay, as compared with *493 per hour in the preceding year.

For each of the 1,426 observations of the chimneys for one hour at Ahmedabad the average emission was equal to 1'1 minutes per hour as compared with 1*01 per hour for the preceding year.

There were at the close of the year 1,161 stationary chimneys in Bombay Island and Coorla, and 155 in Ahmedabad on the Register of the Commission. The above figures represent the number of existing chimneys only, those removed being struck off the Register. During the year 69 chimneys were added to the Register in Bombay and five at Ahmedabad. In addition to the registered stationary chimneys, there are many portable chimneys controlled by the Commission such as those connected to Railway locomotives, road rollers, portable engines, steam ships and launches, etc.

Observations are taken daily of the smoke emitted from the various chimneys, to see that they do not exceed the limits prescribed under the Bules. For the purpose of comparison and record, a series of observations of one hour duration are taken from which is compiled the average emission for each month, and subsequently an average for the year. This total is taken as representative of the average smoke emissions for the area throughout the year. The following table shows the yearly average emissions of smoke for Bombay and Ahmedabad since statistics have been maintained :—

	Scales Nos. 6, 5 and 4 reduced to scale No. 6, i.e. dense black, minutes per hour.
BOMBAY.	
1913 February...	11-6
1913 March ...	6-5
1914 „ ...	1*86
1915 „ ...	1-474
1916 „ ...	1-432
1917 „ ...	1-235
1918 „ ...	1-203
1919 „ ...	1144
1920 „ ...	1-254

Year.

BOMBAY—*conid.*

1921 March .
1922 ”
1923 „
1924 ”
1925 ”
1926 ”
19-27 ”
1928 ”
1929 ”
1930 ”
1931 ”
1932 ”
1933 ”
1934 ”
1935 ”
193G ”
1937 ”
1938
1939 ”

AHMEDABAD.

1924 (November 1923 to March 1924)
1925 March
1926
1927 ”
1928
1929 ”
1930
1931 ”
1932 ”
1933
1934
1935
1936 ”
1937
1938
1939

The following notices and warnings were issued during the year:—

		Notices.	Intima- tions.	Statutory warnings.
Bombay	(Factories	420	5	7
	! Locomotives	6	<i>Nil.</i>	<i>Nil.</i>
	J Steam lorries, road rollers, cranes and single boilers	9	<i>Nil.</i>	1
	J Steam ships	G	<i>Nil.</i>	<i>Nil.</i>
	^ Tugs and launches ...	1	<i>Nil.</i>	<i>Nil.</i>
Ahmedabad	R Factories	201	9	15
	1 Locomotives	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>
	" j Road rollers, cranes and single V. boilers	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>
			<i>Nil.</i>	

Forty complaints were received from the public in Bombay during the year, and all possible steps were taken to minimise the nuisances complained of. Most of the complaints were mainly against small concerns such as bakeries, eating houses, metal casting bhutties, etc., and some were against silk factories.

During the year three complaints were received from the public at Ahmedabad. Two of the complaints were suitably dealt with, but the third resulted in prosecution.

The Agents and the Manager of the Dhanraj Mills Ltd., Lower Parel, Bombay, were prosecuted for breach of Rule 23 (3). The Court was convinced of the offences committed, but as the accused had carried out the requirements to the satisfaction of this Department and the emission of smoke had been eliminated, the Court took a lenient view of the case and acquitted the accused.

There were three prosecutions in Ahmedabad during the year—two for the infringement of Rule 23 (3) and one for breach of sections 9-A (1) and 9-A (2) of the Act. In all the cases the accused were found guilty, convicted and fined Ks. 125 and Rs. 70 respectively.

During the year the Commission examined at Bombay 29 plans of proposed flues and chimneys, and six at Ahmedabad. The plans in Bombay related to new concerns while the plans dealt with at Ahmedabad related to additions and alterations to the existing plants.

The question of erecting an observation tower with a telephone connection at Ahmedabad as referred to in the last year's report is still under consideration of the Ahmedabad Municipality.

The thanks of the Commission are due to the mill and factory owners, heads of engineering departments, public bodies, shipping agencies, etc., for their cordial co-operation with the Inspectors in securing the abatement of smoke nuisance and by dealing departmentally with

negligent drivers and firemen responsible for causing unnecessary smoke. Such co-operation is necessary if the best results are to be obtained and although domestic smoke is outside the scope of the Commission, the general public can also assist **by** using 'coke or other smokeless fuel or **by** adopting gas or electricity for cooking purposes.

As usual the officers of the Bombay Municipality and particularly those of the Health and Licensing Departments gave their full co-operation by forwarding complaints, supplying information regarding new and defective installations and advising complainants to get in touch with the Smoke Nuisances Department.

The Commission is satisfied with the work carried out **by** the inspecting staff during the year.

J. F. GENNING-S,
Commissioner of Labour and President,
Bombay Smoke Nuisances Commission.

Bombay, 8th May 1939.

Twenty-seventh Annual Report of
the Bombay Smoke-nuisances
Commission

For the Year 1939-40

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1940

**TWENTY-SEVENTH ANNUAL REPORT OF THE
BOMBAY SMOKE NUISANCES COMMISSION
FOR THE YEAR 1939-40.**

This report covers the period from 1st April 1939 to 31st March 1940.
The Commission consisted of the following members :—

President.

- (1) Mr. J. F. Gennings, CLE., C.B.E.,
Bar-at-Law, Commissioner of Labour,
from 1st April 1939 to 9th May 1939.
Mr. D. S. Bakhle, I.C.S., Commissioner
of Labour, from 10th May 1939 to
31st March 1940. > *Ex-officio.*

Members.

- (2) Bao Bahadur B. P. Jagtap, from 1st April
1939 to 5th November 1939.
Mr. K. V. S. Murti, from 6th November
- 1939 to 31st March 1940. ^Nominated by
' Government.
- (3) Mr. R. B. McGregor
- (4) Mr. E. G. Cameron
- (5) Mr. W. F. Webb ^ Elected by the
/ Bombay Mill-
f owners' Associa-
tion.
- (6) Mr. Mark Binnie J
- (7) Mr. H. F. Milne Elected ' by the
Chamber of Com-
merce, Bombay.

SUB-COMMITTEE FOR AHMEDABAD.

Chairman.

- (1) Mr. G. G. Drewe, I.C.S., Collector of *Ex-officio.*
Ahmedabad.

Members.

- (2) Mr. B. S. Vyas, Executive Engineer, *Ex-officio.*
Ahmedabad Division.
- (3) Dr. Hariprasad Vrajrai Desai .. Elected by the
A h m e d a b a d
Municipality.
- (4) Seth Nanddas Haridas Elected by the
Millowners' Associa-
tion, Ahmedabad.

During the year two meetings of the Commission were held in Bombay, and the Sub-Committee met twice in Ahmedabad.

In Bombay, the time of one Inspector was mainly devoted to smoke nuisances inspection throughout the year, while in Ahmedabad the work was done by the Resident and District Inspectors in addition to their boiler inspection duties.

The following table summarises the work of the year and compares it with that of the preceding year in the two areas :—

		Observations of chimneys.	Visits to factories.	Test of appliances.
^Bombay	f1938-39	2,987	753	43
	11939-40	2,420	559	30
.Aliinedabad	f1938-39	1,793		23
	11939-40	2,761	710	22
Total .. -i	f1938-39	4,780	1,416	66
	11939-40	5,181	1,269	52

The changing of the mills and factories from coal to oil fuel still continues in Bombay with encouraging results, and this has made it unnecessary to undertake as many tests of appliances as before.

The year under review has been notable for the many additional small factories which have sprung up in Bombay. These factories are principally silk weaving concerns which employ small boilers for departmental and heating purposes.

In addition to the regular observation points, two others were added during the year one of them with a properly built all weather shelter.

The number of complaints forwarded by the Municipality and by the public direct to this office was practically the same as last year.

In Ahmedabad, the number of observations and visits to factories showed an increase over last year's figures. This is due to the District Inspector taking observations while in Ahmedabad proper, as ordered by Government under their Memorandum No. 3104/34-E, Political and Services Department, dated 8th September 1939.

The emission of smoke is recorded according to the following table :—

Scale No. 1	No smoke.
No. 2	Light Grey.
No. 3	Grey.
No. 4	Very dark grey.
No. 5	Black.
No. G	Dense black.

For the purpose of smoke nuisance inspection, only scales Nos. 4, 5 and 6 are important. In Bombay and other areas to which this Act has been applied, the emission of dense black smoke (scale No. 0) is prohibited. Scales Nos. 5 and 4 are related to scale No. 6 as follows :—

One minute of scale No. 5 (black) is taken as equal to *55 minute of scale No. 6 (dense black smoke) and one minute of scale No. 4 (very dark grey) is taken as equal to *37 minute of scale No. 6.

On this basis the average emission of smoke was equal to 'G45 minute per hour of dense black smoke for each of 2,218 observations of the chimneys per hour in Bombay, as compared with *524 per hour in the preceding year. The slightly higher average this year was due to observations being taken from two new locations bringing into view for the first time, in many instances, several chimneys of recently constructed factories which were bad offenders. Warnings have been sent to these factories and more care is now being taken in the working of their furnaces.

For each of the 2,112 observations of the chimneys for one hour at Ahmedabad, the average emission was equal to 1 *0 minute per hour as compared with 1 1 per hour for the preceding year. The fall of *1 in average emission of smoke can be attributed to the stricter enforcement of the Act as can be seen from the number of prosecutions during the year under report.

There were at the close of the year 1,197 stationary chimneys in Bombay Island and Coorla and 157 in Ahmedabad on the Register of the Commission. The above figures represent the number of existing chimneys only, those removed being struck off the Register. During the year 52 chimneys were added to the Register in Bombay and G at Ahmedabad. In addition to the registered stationary chimneys, there are many portable chimneys controlled by the Commission such as those connected to Railway locomotives, road rollers, portable engines, steamships and launches, etc.

Observations are taken daily of the smoke emitted from the various chimneys to see that they do not exceed the limits prescribed under the Rules. For the purpose of comparison and record, a series of observations of one hour duration are taken from which are compiled the monthly and the annual averages of smoke emission. The following table shows the yearly average emissions of smoke for Bombay and Ahmedabad since the statistics have been maintained :—

Year.	Scales Nos. 6, 5 and 4 reduced to scale No. 6, i.e., dense black, minutes per hour.
BOMBAY.	
1913 February	.. 11-6
1913 March	.. 6-5
1914 „	.. 1 - 8 6
1915 „	.. 1-474
1916 „	.. 1*432

Year.

Scales Nos. 6, 5 and 4
reduced to scale No. 0,
i.e., dense black,
minutes per hour.**BOMBAY—*contd.***

1917	March	1-235
1918		1*203
1919		1-144
1920	* A	1*254
1921	)	1-406
1922	)	1-82
1923	5 J	1-55
1924		1*949
1925		1-416
1926	1 J	1-146
1927		1-26
1928	) 1	1*104
1929	J	•61
1930		*51
1931	• >	•477
1932	? 1	-623
1933	)	'430
1934	1 J	*392
1935	>	•377
1936	)	•411
1937	)	*499
1938	) >	•493
1939	5 T	•524
1940	J	•645

AHMEDABAD.

1924	(November 1923 to March 1924)	6-56
1925	March	3-95
1926		3 5
1927		2-68
1928		2-63
1929		2*00
1930		2-23
1931		1-4
1932		1-59
1933		1-73
1934		1-52
1935		•97
1936		•99
1937		•99
1938		1-01
1939		1*1
1940		1-0

The following notices, intimations and statutory warnings were issued during the year ;—

		Notices.	Intima- tions.	Statutory warnings.
Bombay	Factories	238	59	4H
	Locomotives		2	Nil.
	Steam lorries, Road-Rollers, Cranes and single boilers	Nil.	Nil.	NU.
	Steamships	29	Nil.	Nil.
	Tuu"s and launches	Nil.	ML	Nil.
Ahmedabad	Factories	158	6	58
	Locomotives	5	Nil.	Nil.
	Road-Hollers	Nil.	Nil.	Nil.
	Cranes	Nil.	NU.	Nil.

Forty complaints were received from the public in Bombay during the year and all possible steps were taken to minimise the nuisance complained of. Most of the complaints were mainly against small concerns, such as bakeries, metal casting bhutties, eating houses, etc.

During the year one complaint was received from the public at Ahmedabad relating to a smith's forge. The owner was advised to use coke instead of steam coal. This had the desired effect.

There was no prosecution in Bombay during the year under report.

Due to the stricter policy of the Sub-Committee in Ahmedabad 31 prosecutions were filed during the year, of which 29 were successfully decided by the end of March 1940, resulting in the total collection of fines of Rs. 2,520. The remaining two cases are pending,

During the year, the Commission examined at Bombay, 7 plans of proposed flues and chimneys, and six at Ahmedabad. The plans in Bombay related to new as well as old concerns, while five plans in Ahmedabad related to additions and alterations to the existing plants, and one was for a new concern.

The question of erecting an observation tower with a telephone connection, as reported last year, has been dropped by the Ahmedabad, Municipality but the Municipality is now considering the erection of a cabin on the Madhav Baug High Level Water Reservoir.

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The thanks of the Commission are due to the mill and factory owners, heads of engineering departments, public bodies, shipping agencies, etc., for their cordial co-operation with the Inspectors in securing the abatement of smoke nuisance by dealing departmentally with negligent drivers and firemen responsible for causing unnecessary smoke. Such co-operation is necessary if the best results are to be obtained and although domestic smoke is outside the scope of the Commission, the general public can also assist by using coke or other smokeless fuel.

As usual the officers of the Bombay Municipality and particularly those of the Health and Licensing Departments gave their full co-operation by forwarding complaints, supplying information regarding new and defective installations and advising complainants to get in touch with the Smoke Nuisances Department.

The thanks of the Commission are due to Mr. J. Pratt and to the inspecting and clerical staff for the efficient manner in which the work has been carried out throughout the year.

S. E. DESHPANDE,
Commissioner of Labour and President,
Bombay Smoke Nuisances Commission.

Bombay, 11th May 1940.

Twenty-eighth Annual Report of
the Bombay Smoke-nuisances
Commission

For the Year 1940-41

BOMBAY

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19A1

**TWENTY-EIGHTH ANNUAL REPORT OF THE
BOMBAY SMOKE NUISANCES COMMISSION
FOR THE YEAR 1940-41.**

This report covers the period from 1st April 1940 to 31st March 1941.
The Commission consisted of the following members :—

President.

- (1) Mr. S. R. Deshpande, M.B.E., B.A.
(Bom.), B.Litt. (Oxon.), Commis-
sioner of Labour, from 1st April
1940 to 31st July 1940; *YEx-officio.*
Mr. D. S. Bakhle, I.C.S., Commis-
sioner of Labour, from 1st
August 1940 to 31st March 1941.

Members.

- (2) Mr. N. V. S. Murti
(3) Mr. R. B. McGregor
(4) Vacant from 1st April 1940 to
9th March 1941. >Nominated by Govern-
ment.
Mr. Nathubhai K. Patel, from
10th March 1941 to 31st March
1941.
(5) Mr. W. P. Webb .. ~] Elected by the Bombay
Mill-owners' Associa-
tion.
(6) Mr. Mark Binnie
(7) Mr. H. F. Milne Elected by the Chamber
of Commerce,
Bombay.

SUB-COMMITTEE FOR AHMEDABAD.

Chairman.

- (1) Mr. G. G. Drewe, I.C.S., Collector *Ex-officio.*
of Ahmedabad.

Members.

- (2) Mr. B. S. Vyas, Executive Engineer, *Ex-officio.*
Ahmedabad Division.
(3) Dr. Hariprasad Vrajrai Desai Elected by the
Ahmedabad Municipality.
(4) Seth Nanddas Haridas .. Elected by the Mill-
owners' Association,
Ahmedabad.

During the year three meetings of the Commission were held in Bombay, and the Sub-Committee met twice in Ahmedabad.

In Bombay, the time of one Inspector was mainly devoted to smoke nuisance throughout the year, while in Ahmedabad the work was done by the Resident and District Inspectors in addition to their boiler inspection duties.

The following table summarises the work of the year and compares it with that of the preceding year in the two areas

		Observations of Chimneys.	Visits to factories.	Test of appliances.
Bombay	1939-40	2,420	559	30
	1940-41	2,613	630	29
Ahmedabad ..	1939-40	2,761	710	22
	1940-41	2,831	770	19
Total .. ^	1939-40	5,181	1,269	52
	1940-41	5,444	1,406	48

The changing of the mills and factories from coal to oil fuel still continues in Bombay with encouraging results.

The number of complaints forwarded by the Bombay Municipality and by the public direct to this office was 37 as against 40 received last year. •

The number of observations and visits to factories show an increase over the last year's figures while the number of test of appliances was nearly the same as last year.

The emission of smoke is recorded according to the following table :—

Scale No.	No smoke.
No.	Light grey.
No.	Grey.
No.	Very dark grey.
No.	Black.
No. 6	Dense black.

For the purpose of smoke nuisance inspection, only Scales' Nos. 4, 5 and 6 are important. In Bombay and other areas to which this Act has been applied, the emission of dense black smoke (Scale No. 6) is prohibited. Scales Nos. 5 and 4 are related to Scale No. 6 as follows :—

One minute of Scale No. 5 (black) is taken as equal to * 55 minute of Scale No. 6 (dense black smoke) and one minute of Scale No. 4 (very dark grey) is taken as equal to * 37 minute of Scale No. 6.

On this basis the average emission of smoke was equal to '568 minute per hour of dense black smoke for each of 2,353 full hour observations of the chimneys in Bombay as compared with ' 645 in the proceeding year.

For each of the 2,414 observations of the chimneys for one hour at Ahmedabad, the average emission was equal to ' 88 minute as compared with 1'0 per hour for the preceeding year. The improvement is due to the strict vigilance of the Inspectors and the Sub-Committee who accompanied the Inspector for smoke observations on four occasions during the year and also to several mills working on electrical power purchased from the Supply Company for their extra load.

There were at the close of the year 1,244 stationary chimneys in Bombay Island and Coorla and 161 in Ahmedabad on the Register of the Commission. The above figures represent the number of existing chimneys only, those removed being struck off the Register. During the year 72 chimneys were added to the Register in Bombay and 7 at Ahmedabad. In addition to the registered stationary chimneys, there are many portable chimneys controlled by the Commission such as those connected to Railway Locomotives, road rollers, portable engines, steam* ships and launches etc.

Observations are taken daily of the smoke emitted from the various chimneys to see that they do not exceed the limits prescribed under the Rules. For the purpose of comparison and record, a series of observations of one hour duration are taken from which are compiled the monthly and the annual averages of smoke emission. The following table shows the yearly average emissions of smoke for Bombay and Ahmedabad since the statistics have been maintained.

Year.	BOMBAY.		•	Scales Nos. 6, 5 and 4 reduced to Scale No.6, i.e., dense black, minutes per hour.
1913 February				11-6
1913 March	6*5
1914	T 8 6
1915 <i>a</i>			..	1-474
1916 <i>it</i>				1*432
1917	* .	*		1-235
1918 <i>>></i>			..	1*203
1919 <i>)></i>			..	1*144
1920 <i>if</i>				1*254
1921 <i>)></i>			...	1-406
1922 <i>j t</i>			..	1-82
1923 <i>it</i>	1*55
1924 <i>)</i>			..	1*949
1925 <i>it</i>	* .	»		1'416

Scales Nos. 6, 5 and 4 "
reduced to Scale No. 6,
i.e., dense black,
minutes per hour.

Year,

BOMBAY—*contd.*

1926	March	1*146
1927	„	1*26
1928	„	1*104
1929	„	' < '61
1930	„	•51
1931	„	•477
1932	„	•623
1933	„	•430
1934	„	•392
1935	„	•377
1936	„	•411
1937	„	•499
1938	„	•493
1939	„	•524,
1940	„	•645
1941	„	•568

AHMEDABAD.

1924	(November 1923 to March 1924)	6*56
1925	March	3-95
1926	„	3-5
1927	„	2*68
1928	„	2-63
1929	„	2*00
1930	„	2*23
1931	„	1*4
1932	„	1-59
1933	„	1*73
1934	„	1-52
1935	„	•97
1936	„	•99
1937	„	'99
1938	„	1-01
1939	„	1-1
1940	„	1*0
1941	„	•88

The following notices, intimations and statutory warnings were issued during the year :—

		Notices.	Intima- tions.	Statutory warnings.
Bombay	Factories	222	32	19
	Locomotives	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>
	-(Steam lorries, road Rollers, Cranes and single boilers	4	<i>Nil.</i>	<i>Nil.</i>
	Steamships	22	<i>Nil.</i>	<i>Nil.</i>
	Tugs and launches	1	<i>Nil.</i>	<i>Nil.</i>
Ahmedabad	Factories	353	1	37
	Locomotives	4	<i>Nil.</i>	<i>Nil.</i>
	Road Rollers	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>
	Cranes	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>

Thirty-seven complaints were received from the public in Bombay during the year and all possible steps were taken to minimise the nuisance complained of. Most of the complaints were mainly against small concerns such as bakeries, metal casting bhutties, eating houses etc.

During the year, three complaints were received from the public at Ahmedabad. Two of the complaints were against the metal casting bhutties and were due to the absence of chimneys over the bhutties. The owners of these bhutties have now erected proper hoods and chimneys and eliminated the nuisance complained of. The last complaint was against small factories having short chimneys. The owners have been warned that the full height of 100 feet as required by Rule 26 of the Rules under the Act will be required if smoke is emitted beyond permissible limit.

There was no prosecution in Bombay during the year under report.

Of the two prosecution cases filed in Ahmedabad during the last year and decided during the current year, one was successful resulting in a total fine of Rs. 400. The other prosecution failed in a revision application filed before the High Court and the fine of Rs. 100 imposed by the City Magistrate, Ahmedabad, was ordered to be refunded.

During the year under report three prosecutions were filed in Ahmedabad of which two were successfully decided by the end of March 1941 resulting in the total collection of Rs. 100. The remaining case is pending.

During the year, the Commission examined at Bombay 19 plans of proposed flues and chimneys, and 6 at Ahmedabad. The plans in

Bombay related to new as well as old concerns while plans in Ahmedabad related to additions and alterations to the existing plants.

The question of erecting a cabin on the Madhav Baug High Level Water Reservoir is still under the consideration of the Ahmedabad Municipality.

The thanks of the Commission are due to the mill and factory owners, heads of engineering departments, public bodies, shipping agencies etc. for their cordial co-operation with the Inspectors in securing the abatement of smoke nuisance by dealing departmentally with negligent drivers and firemen responsible for causing unnecessary smoke. Such co-operation is necessary if the best results are to be obtained and although domestic smoke is outside the scope of the Commission, the general public can also assist by using coke or other smokeless fuel.

As usual the officers of the Bombay Municipality and particularly those of the Health and Licensing Departments gave their full co-operation by forwarding complaints, supplying information regarding new and defective installations and advising complainants to get in touch with the Smoke Nuisances Department.

The thanks of the Commission are due to Mr. J. Pratt and to the inspecting and clerical staff for the efficient manner in which the work has been carried out throughout the year.

D. S. BAKIILE,

Commissioner of Labour and President,
Bombay Smoke Nuisance Commission.

Bombay, 2nd May 1941.

Thirty-third Annual Report of the
Bombay Smoke-nuisances
Commission

For the Year 1945-46;

BOMBAY

PRINTED AT THE GOVERNMENT CENTRAL PRESS
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1947.

THIRTY-THIRD ANNUAL REPORT OF THE
BOMBAY SMOKE NUISANCES COMMISSION
FOR THE YEAR 1945-46.

This report covers the period from 1st April 1945 to 31st March 1946. The Commission consisted of the following members :—

President.

- (1) Mr S. V. Joshi, B.A. (Cantab) Commissioner of Labour. J JJ

Members.

- (2) Mr. J. F. Paisley, Executive Engineer, Presidency Division. J Do.
- (3) Mr. D. V. Kohli (from 1st April 1945 to 21st September 1945).
Vacant from 22nd September 1945 to 31st December 1945.
Mr. W. F. Fairbairn (from 1st January 1946 to 31st March 1946). ^Nominated by Government.
- (4) Mr. N. K. Patel (from 1st April 1945 to 6th August 1945).
Vacant from 7th August 1945 to 31st March 1946).
- (5) Mr. H. A. Wood ...
- (6) Mr. W. F. Webb (from 1st April 1945 to 31st December 1945). J> Elected by the Mill-owners Association, Bombay.
Mr. G. S. Karpur (from 1st January 1946 to 31st March 1946). j
- (7) Mr. H. F. Milne (from 1st April 1945 to 16th May 1945). I
Vacant from 17th May 1945 to 27th July 1945. TJ, < « A. A. m i I, Elected by the Chamber
Mr. J. G. Milne (from 28th July 1945 to 31st December 1945). > u -Domoay.
Mr. H. F. Milne (from 1st January 1946 to 31st March 1946),

SUB-COMMITTEE FOR AHMEDABAD.

Chairman.

- (1) Mr. J. G. Simms, O.B.E., L.C.S., ^ Collector of Ahmedabad (from 1st April 1945 to 6th June 1945).
Mr. D. G. Chambers, I.C.S. (from 7th June 1945 to 1st July 1945).
Mr. H. A. Khan, B.A. (from 2nd July 1945 to 20th January 1946). T^'Ojjic%o,
Mr. S. G. Barve, I.C.S. (from 21st January 1946 to 31st March 1946).

Members.

- (2) Rao Bahadur K. J. Gandhi, *Ex-officio*.
Executive Engineer, Ahmedabad
Division.
- (3) Sheth Shantilal Mangaldas (from 1st April 1945 to 31st December 1946) ...
Sheth Navnitlal Sakarlal (from 1st January 1946 to 31st March 1946) ...
Association, Ahmedabad.
- (4) Dr. A. M. Seervai ... Elected by the Ahmedabad Municipality.

During the year three meetings of the Commission were held in Bombay and the Sub-Committee met twice in Ahmedabad.

In Bombay, the time of one Inspector was mainly devoted to the smoke nuisances work throughout the year, while in Ahmedabad the work was done by the Resident Inspector and the District Inspector in addition to their boiler inspection duties.

The following table summarises the work of the year and compares it with that of the preceding year, in the two areas :—

Place.	Year.	Observations of chimney i.	Visits to factories.	Tests of appliances.
Bombay	1* 1944-45	3,639	741	37
	[1945-46	8,573	727	17
Ahmedabad ...	[1944 45	4,170	747	37
	[1945-46	• 4,575	656	34

The emission of smoke is recorded according to the following table :—

Scale No. 1	...	...	White.
„ No. 2	...	...	Light Grey.
1* No. 3	...	...	Grey.
No. 4	...	...	Very Dark Grey.
No. 5	...	...	Black.
No. 6	...	...	Dense Black.

For the purpose of smoke nuisances inspection, only Scales **NOB.** 4, 5 and 6 are important. In Bombay and other areas to which this Act has been applied, the emission of dense black smoke (Scale No. 6) is prohibited. The Scales Nos. 5 and 4 are related to Scale No. 6 as follows :—

One minute of Scale No. 5 (black) is taken as equal to 55 minute of Scale No. 6 (dense black) and one minute of Scale No. 4 (Very dark grey) is taken as equal to 37 minute of Scale No. 6.

On this basis the average emission of smoke during the year was equal to "646 minute per hour of dense black smoke for each of 3465 full hour observations of the chimneys in Bombay as compared with "633 minute in the preceding year.

For each of the 4575 observations of chimneys for one hour at Ahmedabad the average emission of smoke was equal to *91 minute as compared with *95 per hour for the preceding year.

There were at the close of the year 1563 stationary chimneys in Bombay Island and Kurla and 173 in Ahmedabad on the registers of the Commission. The above figures represent the number of existing stationary chimneys only, those removed having been struck off the registers. During the year 83 new chimneys were added to the register in Bombay and 3 in Ahmedabad. In Bombay, 10 chimneys were struck off the register and 2 in Ahmedabad. In addition to the registered stationary chimneys, there are many portable chimneys controlled by the Commission such as those connected to Railway Locomotives, road rollers, portable boilers, steam ships and launches etc.

Observations are taken daily of the smoke emitted from various chimneys to see that they do not exceed the limits prescribed under the Rules. For the purpose of comparison and record, a series of observations of one hour duration are taken from which the monthly and annual averages of smoke emission are arrived at. The following table shows the yearly average emission of smoke for 1 ombay and Ahmedabad for the first and last five years since the statistics have been maintained :—

Y. * . -	P l a c e	Scales NOB. 6, 5 and 4 reduced to Scale No. 6. i.e., dense black, minute per hour.
1913 February	Bombay	11-6
1913 March		6-5
1914 „		1*86
1915 „		1-474
1916 „		1-432
1917	„	1-235
1942 March	Bombay	•597
1943 „		•648
1944 „		•666
1945 „		•633
1946 „		•646

Year.	Place.	Scales Nos. 6, 5 and 1 reduced to Scale No. fi. i.e., dense back, minute per hour
1924, November 1923 to March 1924.	Ahmedabad	6*56
1925 March		395
1926 . „		8-5
1927 „		2-68
1928 „		2-63
1929		2-00
1942 March	Ahmedabad	•87
1943		•83
1944 „		•92
1945 „		•95
1946 „		•91

The following number of notices, intimations and statutory warnings were issued during the year :—

		Notices.	Intima- tions.	Statutory •warnings.
Bombay	(Factories	278	17	22
	Locomotives	Nil.	Nil.	Nit.
	Steam Lorries, road rollers, cranes and single boilers.	11	2	11
	Steam ships	1		1
	[Tugs and Launches ...	11		11
(Factories	376	1	1	
Ahmedabad	Locomotives	Nil.	Nil.	Nil.
	V Road Rollers and Cranes			

Twenty-eight complaints were received from the Bombay Municipality and the public in Bombay during the year as against 17 in the preceding year and all possible steps were taken to minimise the nuisance complained of. The majority of the complaints were mainly against smaller industrial concerns such as metal casting and engineering works, soap factories and bakeries etc.

Only one complaint regarding smoke nuisance was received in Ahmedabad during the year and it was suitably dealt with.

One prosecution under the Act for breach of Rule 2(3) for emitting smoke at a lower altitude was filed during the year in Bombay, against Messrs. Crescent Trading Co. (A Metal Casting Factory), 6th Kumbharwada, Kharwa Galli, Bombay. No prosecution under the Act was filed at Ahmedabad during the year.

During the year the Commission examined 15 plans of the proposed flues and chimneys in Bombay, 4 for alterations in the flue arrangements and the remaining 11 for new concerns. Three plans of the proposed flues and chimneys were examined by the Sub-Committee at Ahmedabad, out of which two related to the additions to the existing plants and the third to a new plant-

The provisions of the Bombay Smoke Nuisances Act and the Rules thereunder have been applied from 1st October 1945 to the area covered by the Greater Bombay Laws and the High Court (Declaration of Limits) Act, 1945. The Bombay Smoke Nuisances Commission has decided to increase the present staff of the Smoke Nuisances Department for the proper administration of the Smoke Nuisances Act including the new area. The proposal for the additional staff will be submitted to Government separately.

The thanks of the Commission are due to the mill and factory owners, heads of Engineering Departments, public bodies etc. for their cordial co-operation with the Inspectors in securing the abatement of smoke nuisance by dealing departmentally with the negligent drivers and firemen responsible for causing unnecessary smoke.

As usual the officers of the Bombay Municipality and particularly those of the Health and Licensing Departments gave their full co-operation by forwarding complaints, supplying information regarding new and defective installations and advising complainants to get in touch with the Smoke Nuisances Department to remedy their grievances.

The thanks of the Commission are also due to the Inspecting and clerical staff for the efficient manner in which the work has been carried out throughout the year.

S. V. JOSHI,

Commissioner of Labour and President;
Bombay Smoke Nuisances Commission,

Bombay, 18th June 1946.

P Bk H 200-2

Thirty-fourth Annual Report of
the Bombay Smoke-nuisances
Commission

For the Year 1946-47



B O M B A Y

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1947

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THIRTY-FOURTH ANNUAL REPORT OF THE BOMBAY SM
 • 'TSANCES* COMMISSION FOB "TEE 1 EAR 19464:.

This report covers the period from 1st April 1946 to 31st March iy*7.
 Thw? Commission consisted of the following members ;—.

President.

- (1) Mr. S. V. Joshi, B.A. (Cantab.), Commissioner of Labour,"
 from 1st April }946 to 28th February 1947... .. ! *Ex officio*
 Mr. M. G. Monani, I.C.S., Commissioner of Labour, from \ ^Jf¹⁰¹⁰⁻
 1st March 1947 to 31st March 1947J

Members.

- (2) Mr. J. F. Paisley, Executive Engineer, Presidency Division... .. Bo.

 (3) Mr. W. F. FairbairnJ,
 (4) (Vacant from 1st April 1946 to 28th October 1946) ... 'Nominated by
 Dr. B. C. Das Gupta, Ex. Health Officer, Bombay f Government.
 Municipality, from 29th October 1946 to 31st March 1947.j
 (5) Mr. H. A. Wood Elected by the
 ! Mi ll o w n e r s
 [Assoc ia 11 o n,
 (6) Mr. G. S. KarpurJ Bombay.
 <7) Mr. H. F. Milne ... Elected by the
 Chamber of
 Co m m e r c e,
 Bombay.

SUB-COMMITTEE, AHMEDABAD.

Chairman.

- (1) Mr. S. G. Barve, I.C.S., Collector of Ahmedabad, **fio**m 1st]
 April 1946 to 15th January 1947... .. {
 Mr. P. N. Damrv, MA. (Oxen.), from 16th January 1947 (
 to 31st March 1947J

M(mbers.

- (2) Rao Bahadur K. J. Gandhi, Executive Engineer,"
 Ahmedabad Division, from 1st April 1946 to 14th
 February 1947 }• *Ex-officio-*
 Mr. R. D. Bakery, from 15th February 1947 to 31st March |
 1947J
 i3) Sheth Navnitlal SakarlalElected by the
 Ah med a b a d
 Mi ll o w n e r s
 Asso elation.
 A) Dr. A. M. Seervai .. Elected by th*
 Ah me d a b a d
 Municipality,

DURING THE YEAR THREE MEETINGS OF THE COMMISSION WERE HELD IN BOMBAY AND THE SUB-COMMITTEE MET TWICE IN AHMEDABAD.

IN BOMBAY, THE TIME OF ONE INSPECTOR WAS MAINLY DEVOTED TO SMOKE NUISANCE WORK THROUGHOUT THE YEAR, AND HE WAS ASSISTED BY A SMOKE OBSERVER FROM 22M FEBRUARY 1947. IN AHMEDABAD, THE WORK WAS DONE BY THE RESIDENT INSPECTOR AND THE DISTRICT INSPECTOR IN ADDITION TO THEIR BOILER INSPECTION DUTIES.

THE FOLLOWING TABLE SUMMARISES THE WORK OF THE YEAR AND COMPARES IT WITH THAT OF THE PRECEDING YEAR, IN THE TWO AREAS:—

Place.	Year.	Observations of chimneys.	Visits to factories.	Tests of appliances^
Bombay	("1945-46	3,573	727	17
	... < /1946-47	3,984	928	21
Ahmedabad	("1945-46	4,575	656	34
	... \ (1046-47	4,510	775	38 \

THE EMISSION OF SMOKE IS RECORDED ACCORDING TO THE FOLLOWING TABLE :—

SCALE NO. 1	... WHITE.
„ NO. 2	... LIGHT GREY.
„ NO. 3	... GREY.
NO. 4	... VERY DARK GREY.
NO. 5	... BLACK.
NO. 6	... DENSE BLACK.

FOR THE PURPOSE OF SMOKE NUISANCE INSPECTION, ONLY SCALES Nos. 4, 5 AND 6 ARE IMPORTANT. IN BOMBAY AND OTHER AREAS TO WHICH THIS ACT HAS BEEN APPLIED, THE EMISSION OF DENSE BLACK SMOKE (SCALE NO. 6) IS PROHIBITED. THE SCALES NOS. 5 AND 4 ARE RELATED TO SCALE NO. 6 AS FOLLOWS:—

ONE MINUTE OF SCALE NO. 5 (BLACK) IS TAKEN AS EQUAL TO 55 MINUTE OF SCALE NO. 1 (DENSE BLACK) AND ONE MINUTE OF SCALE NO. 4 (VERY DARK GREY) IS TAKEN AS EQUAL TO 37 MINUTE OF SCALE NO. 6.

ON THIS BASIS THE AVERAGE EMISSION OF SMOKE DURING THE YEAR WAS EQUAL TO 63; MINUTE PER HOUR OF DENSE BLACK SMOKE FOR EACH OF 3837 FULL HOUR OBSERVATIONS OF THE CHIMNEYS IN BOMBAY AS COMPARED WITH 646 IN THE PRECEDING YEAR.

FOR EACH OF THE 4510 OBSERVATIONS OF CHIMNEYS FOR ONE HOUR AT AHMEDABAD, THE AVERAGE EMISSION OF SMOKE WAS EQUAL TO 897 MINUTE AS COMPARED WITH 91 MINUTE FOR THE PRECEDING YEAR.

THERE WERE AT THE CLOSE OF THE YEAR 1623 STATIONARY CHIMNEYS IN BOMBAY AND 177 IN AHMEDABAD ON THE LIST OF THE COMMISSION. DURING THE YEAR 80 NEW CHIMNEYS WERE ADDED IN BOMBAY AND 7 IN AHMEDABAD. IN ADDITION TO THE STATIONARY CHIMNEYS, THERE ARE MANY PORTABLE CHIMNEYS CONTROLLED BY THE COMMISSION SUCH AS THOSE CONNECTED TO RAILWAY LOCOMOTIVES, ROAD ROLLERS, PORTABLE BOILERS, STEAM TRIPS AND LAUNCHES ETC.

OBSERVATIONS ARE TAKEN DAILY OF THE SMOKE EMITTED FROM VARIOUS CHIMNEYS TO SEE THAT THEY DO NOT EXCEED THE LIMITS PRESCRIBED UNDER THE RULES. FOR THE PURPOSE OF COMPARISON AND RECORD, A SERIES OF OBSERVATIONS OF ONE HOUR DURATION ARE TAKEN FROM WHICH THE MONTHLY AND ANNUAL AVERAGES OF SMOKE EMISSION ARE ARRIVED AT. THE FOLLOWING TABLE SHOWS THE YEARLY AVERAGE EMISSION OF SMOKE FOR

md Ahmedabad for the first and last five years since the statistics have been maintained :—

Year.	Place.		Scales Nos. 6, 5 and 4 reduced to Scale No. 6, i.e., dense black, miniate per hoar.	
BOMBAY/.				
1913 February	11*6
1913 March	65
1914 „	1 8 6
1915 „	1-474
1916 „	1-432
1917	1-235
*	*		*	* *
1943 „	-648
1944 „	-666
1945 „	-633
1946 „	-646
1947 „	-638
AHMEDABAD.				
1924 November 1923 to March 1924			„	6 5 6
1925 March	3-95
1926 „	3'5
1927 „	2-68
1928	2*63
1929 „	* ...	2-00
*	*	.	*	•
1943 March	'83
1944 „	-92
1945 „	'95
1946	-91
1947 „	'897

The following number of notices, intimations and statutory warnings were issued during the year ;—

	Notices.	Intimations.	Statutory warnings.
Bombay	Factories	396	U
	Locomotives	Nil.	Nil
	, Steam Lorries, road rollers, j cranes and single boilers.		
	Steam Ships		
	Tugs and launches		
Ahmedabad	f Factories	370	Nil
	^ Locomotives	Nil	Nil
	Road Rollers		
	Cranes		

Twenty-one complaints of smoke nuisance were received in Bombay, during the year as against 28 in the preceding year and steps were taken to eliminate the nuisance. The majority of the complaints were mainly against smaller industrial concerns such as metal casting, engineering works, bakeries, eating house etc.

One complaint regarding smoke nuisance was received in Ahmedabad during the year.

The prosecution under the Act for breach of Rule 26 filed last year against Messrs. Crescent Trading Co., Kumbharwada, 3rd Lane, Kharwa Galli, was decided during the year under report. The proprietor pleaded guilty and was fined Rs. 600.

Two prosecutions were filed in Bombay for breach of Rule 26 under the Act (1) the New Standard Engineering Co. Ltd., and its Director, Bellasis Road, Byculla, Bombay, and (2) the Proprietor New Ripon Foundry, 236, Ripon Road, Bombay. The case against the New Standard Engineering Co., failed and the accused were acquitted. The case against the New Ripon Foundry has so far not been heard.

No prosecution was filed at Ahmedabad during the year.

During the year the Commission examined one plan of the proposed flues and chimney in Bombay. Six plans of proposed flues and chimneys were examined by the Sub-Committee at Ahmedabad, out of which 3 related to addition of six existing plants and the remaining three to new plants.

Reported last year, smoke nuisance work has been carried out in the Greater Bombay area since August 1946 and so far 17 chimneys in this area have been inspected by the Commission. Many more are still under consideration and will be brought on the list in due course.

The thanks of the Commission are due to the mill and factory owners, heads of engineering departments, public bodies etc. for their cordial co-operation with the Inspector in securing the abatement of smoke nuisance by dealing departmentally with the negligent drivers and firemen responsible for causing unnecessary smoke*

As usual the officers of the Bombay Municipality and particularly those of the Health and Licensing Departments gave their full co-operation by forwarding complaints, supplying information regarding new and defective installations and advising complainants to get in touch with the Smoke Nuisances Department to remedy their grievances,

The thanks of the Commission are also due to the Inspecting and clerical staff for the efficient manner in which the work has been carried out.

M. a. MOKANI,
 Commissioner of Labour and President,
 Nuisances Commission.

Annual Report on the Administration
of the Bombay Smoke Nuisances
Act for the Year 1949-50

BOMBAY

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1950

THIRTY-SEVENTH ANNUAL REPORT OF THE BOMBAY
SMOKE NUISANCES COMMISSION
FOR THE YEAR 1949-50,

This report covers the period from 1st April 1949 to 31st March 1950. The Commission consisted of the following members

Pres idetit.

- (1) Shri A. S. Iyengtr, B.A., LL.B., } *Ex-o iioio.*
Commissioner of Labour.

Members.

- (2) Shri N. C. Patel, Executive Engineer, Presidency Division, from 1st April 1949 to 21st June 1949.
Shri P. M. Mane, from 22nd June 1949 to 3rd August 1949. j
Shri M. N. Mewada, from 4th August 1949 to 31st March 1950. T^ ^ o ^ io
- (3) Shri N. G. Kewalramani, Chief Inspector of Factories, Bombay State, from 1st April 1949 to 5th March 1950.
Shri A. R. Kagal, from 6th March 1950 to 31st March 1950.
- (4) Shri H. K. Gurtu ^
- (5) Dr. B. C. Das Gupta, from 1st April 1949 to 30th November 1949 { ,r - , . , " }
(Vacant fiora 1st December 1949 j .Nominated by Govern-
to 31st March 1950). J
- (6) Shri H. A. Wood, from 1st April 1949 to 20th June 1949.
(Vacant from 21st June 1949 to 12th August 1949). V Elected by the Mill-owners' Association, Bombay.
Shri K. S. Iyer, from 11th August 1949 to 31st March 1950.
- (7) Shri G. S. Karpnr. ...
- (8) Shri H. F. Milne, from 1st April 1949 to 2nd May 1949.
(Vacant from 3rd May 1949 to 20th July 1949). J Elected by the Chamber of Commerce, Bombay.
Shri N. D. Sheppard, from 21st July 1949 to 31st December 1949. J
Shri J. V. Patel, from 1st January 1950 to 31st March 1950. J Elected by the Engineering Association of India, Bombay.

- (9) Shri H. N. Trivedi, from 1st April 1949 to 31st December 1949 | Elected by the Government
 January 1950 to 31st March 1950. Mazdooi-S^vakSan*.

SUB-COMMITTEE, AHMTSNABAD.

Chairman.

- (1) Shri P. N. Darary, Collector of Ahmedabad, from 1st April 1949 to 31st August 1949.
 Shri Jasjit Singh, from 1st September 1949 to 15th November 1949. *yEz-ogivio.*
 Shri P. N. Darary, from 16th November 1949 to 31st March 1950.

Members.

- (2) Shri A. G. Doshi, B.E., Executive Engineer, Ahmedabad Division, from 1st April 1949 to 14th November 1949. ^Nomfna".td by Government.
 Shri D. S. Borkar, B.E., from 15th November 1949 to 31st March 1950.
- (3) Sheth Navnitlal Sakarlal | Elected by the Mill-owners' Association, Ahmedabad.
- (4) Dr. Hariprasad "rajrai" Desai, from 1st April 1949 to 1st December 1949. ^Elected by the Ahmedabad Municipality,
 Shri Jayantilal Jamiatram Vyas, from 1st January 1950 to 31st March 1950.

In Bombay, three meetings were held during the year, while the Sub-Committee at Ahmedabad met twice.

In Bombay, the time of one Inspector throughout the year, one Inspector occasionally, and of the Smoke Observer from 1st December 1949 to 31st March 1950, was mainly devoted to smoke nuisance work. In Ahmedabad the work was done by the Resident Inspector alone in addition to his boiler inspection duties. The District Inspector being fully engaged on boiler inspection work in the district and in the merged states of Gujarat could not assist him in the smoke nuisance work.

The following table summarises the work of the year and compares it; with that of the preceding year, in the two areas :—

Place.	Year.	Observations of chiwaoys.	Visits to factories.	Tests of appliances-
Bombay	M 948-49	7,187	951	15
		8,935	1,130	12
Ahmedabad ...	(1948-49	3,110	657	22
	11049-50	2,290	809	36

In Bombay, there is an average increase in the number of observations and visits to factories over the last year's figures, and the number of tests **Shows** a slight decrease over the last year's figures.

In Ahmedabad, there has been a noticeable decline in the total number of observations during the year, as the Resident Inspector received no assistance in this respect from the District Inspector stationed at Ahmedabad. This was due in the main to the fact that the District Inspector was fully employed in registering and inspecting boilers in the States that had merged with Bombay.

The emission of smoke is recorded according to the following table :—

Scale No. 1	White.
„ No. 2	Light Grey.
„ No. 3	Grey.
„ No. 4	Very Dark Grey.
„ No. 5	Black.
„ No. 6	Dense Black.

For the purpose of smoke nuisance observations, only Scales Nos. 4, 5 and 6 are cognizable. In Bombay and other areas to which this Act has been applied, the emission of dense black smoke (Scale No. 6) is prohibited. The Scales Nos. 5 and 4 are related to Scale No. 6 as follows :—

One minute of Scale No. 5 (black) is taken as equal to 55 minute of Scale No. 6 (dense black) and one minute of Scale No. 4 (Very dark grey) is taken as equal to 37 minute of Scale No. 6.

On this basis the average emission of smoke during the year was equal to 494 minute per hour of dense black smoke for each of the 8820 full hour observations of the chimneys in Bombay as compared to 411 in the preceding year.

For each of the 2290 one hour observations of chimneys at Ahmedabad, the average emission of smoke was equal to 774 as compared to 783 minute for the preceding year.

There were at the close of the year 1834 stationary chimneys in Bombay and 179 at Ahmedabad on the list of the Commission' excluding those dismantled and therefore removed from the list. During the year, 64 new chimneys were added in Bombay and 3 in Ahmedabad. In addition to the stationary chimneys, there are many portable chimneys controlled by the Commission such as those connected to railway locomotives, road rollers, portable boilers, steamships, launches, etc. Erection of many chimneys has been held up for want of the necessary material for the purpose being released.

Observations are taken daily of the smoke emitted from various chimneys to see that they do not exceed the limits prescribed under the Rules. For the purpose of comparison and record, a series of observations of one hour duration are taken from which the monthly and annual averages of smoke emission are arrived at.

The telephones fitted in the observation boxes at the Tata Memorial Hospital, and Bhandarwada Hill are being used daily and they have had a remarkable effect in checking heavy emission of smoke in most cases, for the negligent furnace attendant can no longer escape without the management becoming aware of his carelessness almost immediately.

The following table shows the yearly average emission of smoke for Bombay and Ahmedabad for the first and last five years during which statistics have been maintained:—

Year.	p.j...			(Scales Nos. 6, 5 and 4 reduced to Scale No. 6, i.e., dense black). Minute per hour.
	Bombay.			
1913 February	11-6
1913 March	6"5
1914 "	1-86
1915 "	1-474
1916 "	1*432
1917 "	1-235
* * *	«	•	#	
1946 March	-646
1947 "	-638
1948 "	-637
1949 "	-612
1950	-494

Ahmedabad.

1924—November 1923 to March 1924.	..	...	656
1925 March	..	...	395
1926 "	..	...	3*5
1927 "	..	...	268
1928 "	..	...	2-63
1929 "	..	...	2-00
* * *	* * *	* * *	

1946 March	..	...	-91
1947 "	..	...	'897
1948 "	..	...	-886
1949 "	..	...	-783
1950 "	..	...	-774

The following number of notices, intimations and statutory warnings were issued during the year :—

		Notices.	Intima- tions.	Statutory warnings.
Bombay	j- Factories	244	30	10
	Locomotives	8	1	Nil,
	Steam Lorries, Road Rollers, Cranes and single boilers.	Nil.	Nil	Nil.
	Steam ships	45	Nil.	Nil.
	..Tugs and Launches	2	Nil.	Nil.
Ahmedabad	'Factories	174	Nil.	Nil.
	| Locomotives	1	Nil.	Nil.
	Road Rollers	Nil.	Nil.	Nil.
	LCranes	Nil.	Nil.	Nil.

In Bombay, ninety-two complaints of smoke nuisance were received during the year, as against 81 in the preceding year, and they were suitably dealt with. The majority of the complaints were mainly against small industrial concerns such as metal casting and engineering works, bakeries, eating houses, dhobi ghats, etc.

In Ahmedabad, no complaint regarding smoke nuisance was received from the public during the year.

In Bombay, one prosecution was filed during the year for emission of smoke beyond permissible limits, and the accused was convicted and fined Rs. 75 on 3 counts at the rate of Rs. 25 for each offence. No prosecution was filed during the year in Ahmedabad.

During the year, the Commission examined 94 plans in Bombay of proposed flues furnaces and chimneys etc. of which 64 were for new erections and the rest related to re-erections, alterations and additions to the previously approved arrangements. Three plans for new erections were examined by the Sub-Committee in Ahmedabad.

In Greater Bombay, 5 new chimneys were approved by the Commission during the year.

Owing to very heavy pressure of work in the Steam Boiler Inspection Department the services of the additional Inspector sanctioned by Government for smoke work have had to be utilized for that Department till the return of the Steam Boiler Inspector from long leave in August 1949. Since then, the additional Inspector has been assisting in the smoke nuisance work.

The siting of observation points in Ahmedabad on the same lines as in Bombay has been under consideration for some time and this took concrete shape during the course of this year when 2 points were brought into use, viz. one on the top of Delhi Gate and the other on the highest point of the main building of St. Xavier's High School. These points at present are only fair weather observation points and it is hoped in time to erect shelters at these places fitted with telephones. Negotiations are proceeding with the Ahmedabad Municipality for the siting of an observation box in the garden at Kankaria Hill.

The Sub-Committee had recommended the installation of a telephone which could be immediately used for the better control of excessive smoke emission from mill chimneys, the installation of which has been referred to the appropriate authorities.

The thanks of the Commission are due to mill and factory owners, heads of engineering departments, public bodies etc., for their cordial co-operation with the department in securing the abatement of smoke nuisance by dealing department ally with the negligent drivers and firemen responsible for causing unnecessary smoke.

As usual, the officers of the Bombay Municipality and particularly those of the Health and Licensing Departments co-operated by forwarding complaints, supplying information regarding new and defective installations and advising complainants to get in touch with the Smoke Nuisances Department to remedy their grievances.

The thanks of the Commission are also due to the inspecting and clerical staff for the efficient manner in which the work has been carried out.

A. S. IYENGAR,

Commissioner of Labour and President,
Bombay Smoke Nuisances Commission.

Bombay, 8th August 1950.

Annual Report on the Administration
of the Bombay Smoke Nuisances Act
for the Year 1950-51

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1952

THIRTY-EIGHTH ANNUAL REPORT OF THE BOMBAY SMOKE
NUISANCES COMMISSION FOR THE YEAR 1950-51.

This report covers the period from 1st April 1950 to 31st March 1951.
The Commission, consisted of the following members :—

President :

- (1) Shri A. S. Iyengar, B.A., LL.B., Commissioner of Labour,
from 1st April 1950 to 25th August 1950. *y Ex-officio.*
- Shri P. N. Damry, I.A.S., Commissioner of Labour,
from 26th August 1950 to 31st March 1951.

Members:

- (2) Shri M. N. Mewada, Executive Engineer, Presidency[^]
Division.
- (3) Shri N. G. Kewalramani, Chief Inspector of Factories, ,
Bombay State. *J> Ex-officio.*
- (4) Vacant from 1st April 1950 to 16th August 1950. }
Dr. K. N. Choksv from 17th August 1950 to 31st March 1
1951. * J
- (5) Shri R. K. Gurtu ... Nominated by Government.
- (6) Shri K. S. Iyer)
[... Elected by the Millowners' Association,
Bombay.
- (7) Shri G. S. Karpur j
- (8) Shri J. V. Patel ... Elected by the Engineering Association of
India, Bombay.
- (9) Shri D. S. Marathe ... Elected by the Hindustan Mazdoor
Sevak Sangh.

SUB-COMMITTEE, AHMEDABAD.

Chairman :

- (1) Shri P. N. Damry, I.A.S., Collector of Ahmedabad.[^]
from 1st April 1950 to 14th May 1950. j
- Shri S. A. Ghatge, M.A., from 15th May 1950 to 13th \ *Ex-officio.*
August 1950. |
- Shri M. G. Pimputkar, I.C.S., from 14th August 1950 [
to 31st March 1951. j

Members:

- (2) Shri D. S. Borkar, B.E. ... *Ex-officio.*
- (3) Seth Navivtlal Sakarlal ... Elected by the Millowners' Association
Ahmedabad.
- (4) Shri Jayantilal Jamiatram Vyas...Elected by the Ahmedabad Munia'p;!!
Corporation.

In Bombay, three meetings were held during the year while the Sub-Committee at Ahmedabad held two ordinary meetings besides an informal meeting on 19th January 1951.

In Bombay, the two Inspectors and the Smoke Observer were mainly pre-occupied with smoke nuisance checking. In Ahmedabad this work was mainly done by the Resident Inspector in addition to his boiler inspection duties. The District Inspector being fully engaged on boiler inspection, work in the District and in the merged States of Gujarat, could only occasionally assist him in the smoke nuisance work.

The following table summarises the work of the year and compares it with that of the preceding year, in the two areas

Place.	Year.	Observations of chimney.	Visits to factories.	Tests of appliances.
Bombay	.. 1049-50	8,935	1,130	12
	1950-51	18,446	1,325	12
Ahmedabad	.. 1949-50	2,290	809	36
	1950-51	2,170	730	45

"While these figures represent, on the whole an over-all increase in observations and visits, the slight decrease in the number of hours devoted to smoke nuisance observations at Ahmedabad is accountable for by repeated visits being paid to the same mills and factories from time to time where emission of smoke was found to be excessive and where several tests of appliances had to be carried out to find out the cause of excessive smoke. This is evident from the increase in the number of tests of appliances during the year as compared with the preceding year.

The emission of smoke is recorded according to the following table :—

Scale No. 1	White.
Scale No. 2	Light grey.
Scale No. 3	Grey.
Scale No. 4	Very dark grey.
Scale No. 5	Black.
Scale No. 6	Dense black.

For the purpose of smoke nuisance observations only scales Nos. 4, 5 and 6 are cognizable. In Bombay and other areas to which this Act has been applied, the emission of dense black smoke (scale No. 6) is prohibited. The scales Nos. 5 and 4 are related to scale No. 6 as follows :—

One minute of scale No. 5 (black) is taken as equal to 55 minute of scale No. 6 (dense black) and one minute of scale No. 4 (very dark grey) is taken as equal to 37 minute of scale No. 6.

On this basis the average emission of smoke during the year was equal to 43 minute per hour of dense black smoke for each of the 18350 full hour observations of the chimneys in Bombay as compared to '494 in the preceding year.

For each of the 2120 one-hour observations of chimneys at Ahmedabad, the average emission of smoke was equal to '788 as compared to "774 minute for the preceding year.

There were at the close of the year, 1880 stationary chimneys in Bombay and 17 at Ahmedabad on the list of the Commission excluding those dismantled and therefore removed from the list. During the year, 56 new chimneys were added in Bombay and 9 in Ahmedabad. In addition to the stationary chimneys, there are many portable chimneys controlled by the Commission such as those pertaining to railway, locomotives, road rollers, portable boilers, steam ships, launches, etc.

Observations are taken daily of the smoke emitted from various chimneys to ensure that they do not exceed the limits prescribed under the Rules. For the purposes of comparison and record, a series of observations of one-hour duration are taken from which the monthly and annual averages of smoke emission are arrived at.

The following table shows the yearly average emission of smoke for Bombay and Ahmedabad for the first and last five years during which statistics have been maintained :—

Year.	Place.	(Scales Nos. 6, 5 and 4 reduced to scale No. 6, i.e., dense black) Minute per hour.
1913 February	Bombay	11 6
1913 March	Do.	6 5
1914 J * . . * * *	Do.	1-86
1915	Do.	1-474
1916 j	Do.	1-432
1917	Do.	1-235
1947 53	Do.	•638
1948	Do.	•637
1949	Do.	-612
1950 >5	Do.	*494
1951 jj	Do.	•343
1924 November 1923 to March	Ahmedabad	6 5 6
1924.		
1925 March	Do.	5*39
1926 D	Do.	3-5
1927 >	Do.	2'68
1928	Do.	2 6 3
1929 ?>	Do.	2-00

Year.	Place.	(Scales Nos. G, 5 and 4 reduced to scale No. G, i.e., dense black) Minuto por hour.
1947 March	Ahmedabad	'897
1948 „	Do.	•886
1949 „	Do.	•783
1950 „	Do.	*774
1951 „	Do.	•788

The following number of notices, intimations and statutory warnings were issued during the year :—

		Notices.	Intimations.	Statutory warning;
Bombay	Factories	156		
	Locomotives	9		
	Steam lorries			
	Road Rollers.			
	Cranes and single boilers	N	Nil.	Nil.
	Steam ships	28		
	Tugs and launches	Nil.	Nil.	Nil.
Ahmedabad	Factories	123	11	8
	Locomotives	7	Nil.	Nil.
	Road Rollers	NU.	Nil.	Nil.
	Cranes	Nil.	Nil.	Nil.

In Bombay, 110 complaints of smoke nuisances were received during the year as against 92 in the preceding year, and they were suitably dealt with. The majority of the complaints were mainly against small industrial concerns such as metal casting and engineering works, bakeries, eating houses, dhobighats, etc. The complaints largely related to inadequate heights of chimneys, improper arrangement of hoods and chimneys over the furnaces, chimneys worn out due to corrosion and standing at lower heights than the approved ones and over-loading of boiler. In all such cases the defects were rectified and the cause of smoke nuisance eliminated. In some cases the complaints did not pertain to smoke nuisance, and in appropriate cases exemptions from the provisions of the Bombay Smoke Nuisances Act, 1912 and the Rules thereunder were granted. A few complaints were also found to be not genuine.

In Ahmedabad, three complaints of smoke nuisance were received from the public during the year. Suitable action was taken in one case while 2 other cases were sent to the Health Department of the Ahmedabad Municipality as they referred to small pit bhutties for brazing brass buckets and only fumes were created.

In Bombay, 4 prosecutions were filed during the year for*the erection and use of furnaces and chimneys without the approval of the Commission. In all cases the parties were convicted and fined from Rs. 25 to Rs. t>0. In Ahmedabad a prosecution was also filed against the Proprietor of a factory for unauthorised erection of furnaces and chimneys under section 9A(7) of the Bombay Smoke Nuisances Act, 1912, but the prosecution failed as the Magistrate held that the accused was not responsible for the erection of the furnaces and chimneys, as he had purchased the factory from a previous owner.

During the year, the Commission examined 68 plans of proposed flues and chimneys in Bombay and the Sub-Committee at Ahmedabad examined two plans for new plants and 4 for alterations to the existing plants.

The Bombay Smoke Nuisances Act, 1912 (Bom- VII of 1912) has been extended to the area within limits of Sholapur Borough Municipality with effect on and from the 15th Day of August 1950 and Shri D. B. Arte, Junior Inspector of Factories, Sholapur (now Senior Inspector of Factories) has been appointed as Assistant Inspector of Smoke Nuisances for the area in addition to his own duties. He has already taken an appreciable number of observations after compiling the basic requirements that are essential for arriving at the permissible limits for observation work and has visited almost all the existing chimney plants for the purpose.

In the Greater Bombay Area 9 chimneys were approved by the Commission during the year.

The thanks of the Commsision are due to various mill and factory owners, heads of engineering departments, public bodies, etc., for their cordial co-operation with the department in securing the abatement of smoke nuisance by dealing departmentally with the negligent drivers and firemen responsible for causing unnecessary smoke.

As in the past, the officers of the Bombay Municipality and particularly those of the Health and Licensing Departments, co-operated by forwarding complaints, supplying information regarding new and defective installations and advising complainants to get in touch with the Smoke Nuisances Department to remedy their grievances.

The Commission was satisfied with the smoke nuisance work done by the Inspecting and Clerical staff during the year.

P. N. Danny,

Commissioner of Labour and President,
Bombay Smoke Nuisances Commissions

Bombay, 17th August 1951,

Annual Report on the Administration
of the Bombay Smoke Nuisances Act
for the Year 1951-52

BOMBAY .

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THIRTY-NINTH ANNUAL REPORT OF THE BOMBAY SMOKE
NUISANCES COMMISSION FOR THE YEAR 1951-52.

GENERAL.

The Bombay Smoke Nuisances Act, 1912 operates in Bombay including the greater Bombay Area and Ahmedabad City, and the provisions of the Act have now been extended to cover the Municipal limits of Sholapur Town and a Sub-committee for its proper functioning has also been constituted by Government, as there is no sub-office of the Steam Boiler and Smoke Nuisances Department seated in Sholapur, the Senior Inspector of Factories who is stationed at Sholapur has been deputed to undertake the duties of a Smoke Nuisance Inspector in addition to his normal duties. Before taking up his duties in Sholapur he was given preparatory training in the duties of a Smoke Inspector at Bombay. At the close of the year there were 1,928 stationary chimneys in Bombay and 197 at Ahmedabad on the list of the Commission. During the year, 18 new chimneys were added in Bombay and 10 in Ahmedabad. In addition to the stationary chimneys there are many portable chimneys controlled by the Commission such as those pertaining to railway locomotives, road rollers, portable boilers, steam-ships, launches etc. 10,866 observations were taken and 1,324 visits paid during the year to different mills and concerns in Bombay and 1,935 observations and 133 visits in Ahmedabad.

The emission of dense black smoke (Scale No. 6) is prohibited in Bombay and other areas to which the Act has been applied. The average emission of smoke during the year was equal to 350 minute per hour of dense black smoke for each of the 10,866 full hour observations of the chimneys in Bombay and to 74¹/₂ minute for each of the 1,930 one hour observations of chimney; in Ahmedabad.

In Bombay, 40 complaints of smoke nuisances were received during the year as against 110 in the preceding year, and they were suitably dealt with. The majority of the complaints were mainly against small industrial concerns such as metal casting and engineering works, bakeries, eating houses, dhobighats etc. The complaints largely related to inadequate heights of chimneys, improper arrangement of hoods and chimneys over the furnaces, chimneys worn out due to corrosion and standing at lower height than the approved ones and over loading of boiler. In all such cases the defects were rectified and the cause of smoke nuisance eliminated. In some cases the complaints did not pertain to smoke nuisance, and in appropriate cases exemptions from the provisions of the Bombay Smoke Nuisances Act, 1912 and the rules thereunder were granted.

In Ahmedabad, one complaint of smoke nuisance was received from the public during the year and action was taken.

In Bombay, 9 prosecutions were filed for the erection and use of furnaces and chimneys without the approval of the Commission. Two cases were dismissed on a technical plea. In six cases the parties were convicted and fined from Rs. 10 to Bs. 25. One case is pending. In Ahmedabad no prosecution was filed during the year.

During the year, the Commission examined 48 plans of proposed flues and chimneys and 12 for alterations and additions to in Bombay.

These figures represent on the whole an over-all decrease in the observations in Bombay as the work was to be carried out single handed since 1st September 1951 till the appointment of a Smoke Observer on 16th September 1951. The reduction in observations and test of appliances at Ahmedabad was due to unavoidable absence of the Resident Inspector for a prolonged period.

The emission of smoke is recorded according to the following table :—

Scale No. 1	... White.
Scale No. 2	... Light Grey.
Scale No. 3	... Grey.
Scale No. 4	... Very dark grey.
Scale No. 5	... Black.
Scale No. 6	... Dense black.

For the purpose of smoke nuisance observations only scales Nos. 4, 5 and 6 are cognizable. The scales Nos. 5 and 4 are related to scale No. 6 as follows :—

One minute of scale No. 5 (black) is taken as equal to 0.55 minute of scale No. 6 (dense black) and one minute of scale No. 4 (very dark grey) is taken as equal to 0.1 minute of scale No. 6.

Observations are taken daily of the smoke emitted from various chimneys to at that they do not exceed the limits prescribed under the Rules. For the purpose of comparison and record, a series of observations of one hour duration are taken from which the monthly and annual averages of smoke emission are arrived at.

The following table shows the yearly average emission of smoke for Bombay and Ahmedabad for the first and last five years during which statistics have been maintained.

Year.	Place.	(Scales Nos. 6, and 4 reduced to Scale No. 6 i.e. dense black Minute per hour)
1913 February ...	... Bombay	... 11.6
1913 March ...	... Do.	... 6.5
1914 „ ...	... Do.	... 1.86
1915 „ ...	... Do.	... 1.474
1916 „ ...	... Do.	... 1.432
1917 „ ...	... Do.	... 1.235
1948 „ ...	... Do.	... 0.637
1949 „ ...	... Do.	... 0.612
1950 „ ...	... Do.	... 0.494
1951 „ ...	... Do.	... 0.343
1952 „ ...	... Do.	... 0.350

Year.	Place.	(Scales Nos. 5 and 4 reduced to Scale No. 6 i.e. dense black) Minute per hour.
1924 November 1923 to March 1924.	Ahmedabad	0-56
1925 March ...	Do.	5-39
1926 „ ...	Do.	3-5
1927 „ ...	Do.	2-68
1928 „ ...	Do.	2-63
1929 „ ...	Do.	2 0 0
1948 „ ...	Do.	•886
1949 „ ...	Do.	•783
1950 „ ...	Do.	•774
1951 „ ...	Do.	•788
1952 „ ...	Do.	•742

The following number of notices, intimations and statutory warnings were issued during the year :—

		Notices.	Intimations.	Statutory warnings.
Bombay	FactorioH ..	115	0	1
	Locomotives ..	TIT.		
	Steam lorries			
	Road roller...			
	Cranes and single boilers			
	Steam ships			
	Tugs and launches			
Ahmedabad	"Factories	15	•	
	Locomotives			
	Uoad Hollers			
	Cranes			

The thanks of the Commission are due to various mill and factory owners, heads of engineering departments, public bodies, etc. for their cordial co-operation with the department in securing the abatement of smoke nuisance by dealing departmentally with the negligent drivers and firemen responsible for causing unnecessary smoke,

As in the past, the officers of the Bombay Municipality and particularly those of the Health and Licencing Department co-operated by forwarding complaints, supplying information regarding new and defective installations and advising complainants to get in touch with the Smoke Nuisances Department to remedy their grievances.

The Commission hereby places on record its appreciation of the efficient manner in which their work has been carried out by the Inspecting and the clerical staff.

.P. N. DAMRY,
Commissioner of Labour and President,
Bombay Smoke Nuisances Commission.

kombay, 20th August 1952.

Annual Report on the Administration
of the Bombay Smoke Nuisance Act,
for the Year 1952-53

BOMBAY

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1958

Fortieth Annual Report of the Bombay Smoke Nuisances Commission
for the year 1952-53.

*General**

The Bombay Smoke Nuisances Act, 1912, operates in Bombay including the Greater Bombay Area, Ahmedabad City and the Municipal Limits of Sholapur Town. In Bombay the Smoke Nuisances work was carried through out the year by one Inspector. He was assisted by the Smoke Observer from 1st April 1952 to 30th June 1952 and from 17th February 1953 to 31st March 1953. In Ahmedabad this work was done by the Resident Inspector in addition to his poller inspection duties and the District Inspector assisted him occasionally when he was at the headquarters. The Smoke nuisance work at Sholapur was carried out by the Senior Inspector of Factories in addition to his factory inspection duties.

2. At the close of the year there were 1,999 stationary chimneys in Bombay, 202 in Ahmedabad and 20 in Sholapur. During the year 71 new chimneys were added to the register in Bombay and six in Ahmedabad while one chimney was removed from the Register at each of these two places. No chimney was added or removed from the Register at Sholapur. In addition to the stationary chimneys there are many portable chimneys controlled by the Commission such as those pertaining to railway locomotives, road-rollers, portable boilers, steam ships, launches, etc.

3. During the year 10,214 hourly observations were taken and 1,159 visits were paid to different mills and industrial concerns in Bombay. In Ahmedabad, 2,370 hourly observations were made and 777 visits were paid and in Sholapur 477 hourly observations were made and 10 visits were paid to mills and factories.

4. In addition to the above full-hour observations, 75 in Bombay and 4 in Ahmedabad were made for less than an hour.

The emission of dense "black smoke (scale No. 6) is strictly prohibited in Bombay as well as in other areas to which the Act has been applied. The average emission of smoke during the year was equal to 0.307 minutes per hour of dense black smoke for each of the 10,214 full-hour observations of the chimneys in Bombay, 0.77 minute for each of the 2,370 one hour observations of chimneys in Ahmedabad and 0.36 minute for each of the 477 one hour observations of chimneys in Sholapur.

5. In Bombay 75 complaints of smoke nuisance were received during the year as against 40 in the preceding year and they have been suitably dealt with. The majority of the complaints were mainly against small industrial concerns such as metal-casting and engineering works, bakeries, eating houses, hotels, dhobighats etc. The complaints largely related to inadequate heights of chimneys, improper arrangement of hoods and chimneys over the furnaces, chimneys worn out due to corrosion and standing at lower heights than the approved ones and over-loading of boilers. In all such cases the defect were rectified and the cause of smoke nuisance eliminated. In some cases the complaints did not pertain to smoke nuisance but to fume nuisance and they were directed to the Assistant Health officers of the respective Wards of the Bombay Municipality and in appropriate cases exemptions from the provisions of the Bombay Smoke Nuisances Act, 1912, and the Rules thereunder were granted.

6. In Ahmedabad 3 complaints of smoke nuisance were received and suitable action was taken in each case to eliminate the nuisance. In Sholapur one complaint of smoke nuisance was received and it was properly dealt with.

7. The prosecution which was pending last year resulted in conviction and the party was fined Rs. 15. In Bombay, one prosecution was filed during the year for emission of smoke beyond permissible limits and the accused was convicted and fined Rs. 15 in default of simple imprisonment. No prosecution was filed during the year in Ahmedabad or Sholapur.

8. During the year, the Commission examined 79 plans of proposed flues and chimneys and 27 for alterations, additions and renewals of furnaces, chimneys, etc. in Bombay.

9. The Sub-Committee at Ahmedabad examined five plans*for new plants and 8 for the alterations and additions to the existing plants. No such plans were examined in Sholapur.

10. The Smoke Nuisances Commission consisted of the following numbers :—

President.

- (1) Shri P. N. Damvy, I.A.S., Commissioner of Labour. Ex-officio.

Members.

- Shri M. N. Mewada, Executive Engineer, Presidency Division from 1st April 1952 to 1st March 1953.
- Shri B. K. Choksi, from 2nd March 1953 to 31st March 1953. Ex-officio.
- Shri N. G. Kevalraraani, Chief Inspector of Factories, Bombay State. Ex-officio.
- (4) Dr. V. V. Puri, Executive Health officer, Bombay Municipality. Ex-officio.
- 0) Shri R. K. Gurtu Nominated by Government.
- (0) Shri K. S. Iyer } Elected by the Millowners' Association, Bombay.
- (7) Shri M. M. Shah }
Shri D. S. Mulla } Elected by the Engineering Association of India, Bombay.
- (9) Shri D. S. Marathe Elected by the Hindustan Mazdoor Sevak Sangh.

SUB-COMMITTEE, AHMEDABAD.

Chairman.

- (1) Shri V. M. Joshi, I.C.S., Collector of Ahmedabad, from 1st April 1952 to 25th July 1952. Ex-officio.
- Shri M. D. Rajpal, I.A.S., from 26th July 1952 to 31st March 1953. Ex-officio.

Members.

- (2) Shri R. D. Bakeri, B.E., Executive Engineer, Ahmedabad Division. Ex-officio.
- (3) Shri Nanddas Haridaa ... Elected by the Millowners* Association, Ahmedabad.
- (4) Shri Jayantilal J. Vyas ... Elected by the Ahmedabad Municipal Corporation.

Sub-Committee, Sholapur.*Chairman,*

- (1) Shri R. F. Boga, I.A.S., Collector of Sholapur. Ex-officio.

Members.

- (2) Shri Otia, Executive Engineer, Sholapur Division. Ex-officio.
- (3) Shri Kiledar, President, Sholapur Borough Municipality. Elected by the Sholapur Borough Municipality.
- (4) Mr. C. A. Cookson ... Elected by the Sholapur Mill-owners* Association.

11. In Bombay three meetings were held and the Sub-Committees at Ahmedabad and Sholapur met twice during the year.

12. The following table summarises the work of the year and also gives similar information of the preceding year in the three areas :—

Place.	Year,	Observations of chimneys.	Visit to factories.	Teats of appliances.
Bombay	1951-52	10,866	1,324	8
	1952-53	10,289	1,159	14
Ahmedabad	1951-52	1,935	733	17
	1952-53	2,374	777*	41
Sholapur	1951-52	473	5	
	1952-53	477	10	

The emission of smoke is recorded according to the following table :—

Scale No. 1	White.
Scale No. 2	Light grey.
Scale No. 3	Grey.
Scale No. 4	Very dark grey.
Scale No. 5	Black.
Scale No. 6	Dense black.

For the purpose of smoke nuisance observations, only scales Nos. 4, 5 and 6 are cognizable. The scales Nos. 5 and 4 are related to scale No. 6 as follows.

One minute of scale No. 5 (black) is taken as equal to 0.55 of scale No. 6 (dense black) and one minute of scale No. 4 (very dark grey) is taken as equal to 0.37 minute of scale No. 6.

Observations are taken daily of the smoke emitted from various chimneys to see that they do not exceed the limits prescribed under the Rules. For the purposes of comparison and record, a series of observations of one hour duration are taken from which the monthly and annual averages of smoke emissions are arrived at.

The following table shows the yearly average emission of smoke for Bombay and Ahmedabad for the first and last five years and during which statistics have been maintained and for Sholapur for the year 1952-53.

Year.	Place.	(Scales Nos. 6, 5 and 4 reduced to scale No. 6 i.e. dense black) minute per hour
1913 February	Bombay	11.6
1913 March	Do.	6.5
1914 Do.	Do.	1.86
1915 Do.	Do.	1.474
1916 Do.	Do.	1.432
1917 Do.	Do.	1.235
1949 Do.	Do.	•612
1950 Do.	Do.	•494
1951 Do.	Do.	•343
1952 Do.	Do.	•350
1953 Do.	Do.	•307

	Place.	(Scales Nos. 6, 5 and 4 reduced to scale No. 6 i.e. dense black) minute per hour.
1934 November 1923 to March 1924	Ahmedabad	6-56
1925 March	Do.	5*39
1926 Do.	Do.	35
1927 Do.	Do.	2*68
1928 Do.	Do.	2-63
1929 Do.	Do.	200
1949 Do.	Do.	•783
1950 Do.	Do.	•774
1951 Do.	Do. ...	•788
1952 Do.	Do. ...	•742
1953 Do.	Do. ...	•748
1952 March	Sholapur ...	3-605
1953 Do.	Do. ...	4456

The following number of notices, intimations and statutory warnings were issued during the year :—

	Notices.	Intimations.	Statutory warning
<i>Bombay.</i>			
Factories	88	2	25
Locomotives	1	Nil.	Nil.
Road rollers, cranes and single boilers	Nil.	Nil.	Nil.
Steamships	Nil.	Nil.	Nil.
Tugs and launches	Nil.	" Nil.	Nil.
	89	2	25
<i>Ahmedabad.</i>			
Factories	4	Nil.	Nil.
Locomotives	2	Nil.	Nil.
Road Rollers	Nil.	Nil.	Nil.
Oranei	Nil.	Nil.	Nil.
<i>Sholapur.</i>			
Factories	30	Nil.	Nil.

The thanks of the Commission are due to the **Tarious** mills and factory owners, heads of engineering Departments etc. for their co-operation with the department in securing the abatement of, smoke nuisance by dealing departmentally with the negligent drivers and firemen responsible for causing unnecessary smoke.

As in the past the officers of the Bombay Municipality and particularly those of the Health and Licencing Department co-operated by forwarding complaints, supplying information regarding new and defective installations and advising complainants to get in touch with the Smoke Nuisances Department to remedy their grievances.

The Commission hereby places on record its appreciation of the efficient manner in which their work has been carried out by the Inspecting and the clerical staff.

V. P. KENI,

**Commissioner of Labour & President,
Bombay Smoke Nuisances Commission.**

Bombay, 23rd July 1953.

Annual Report on the Administration
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for the Year 1954-55

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[Price—Anna 1 *and* 6 Pies.]

1955

***orty-second Annual Report of the Bombay Smoke Nuisances
Commission for the year 1954-55.**

General.

The Bombay Smoke Nuisances Act, 1912 operates in Bombay including the Greater Bombay Area, Ahmedabad City and the Municipal limits of Sholapur Town. In Bombay the work was carried out by two Inspectors, The Smoke Observer assisted the Inspectors throughout the year. In Ahmedabad this work was done by the Resident Inspector in addition to his boiler inspection work and the District Inspector assisted him occassionally when he was at headquarters. The smoke nuisance work at Sholapur was carried out by the Senior Inspector of Factories in addition to his factory inspection duties whenever he was at Sholapur.

2. At the close of the year there were 2,123 stationary chimneys in Bombay, 207 in Ahmedabad and 20 in Sholapur, on the register. During the year 62 new chimneys were added to the register in Bombay and 3 in Ahmedabad. No chimney was added to the register in Sholapur as there was no new erection. Four chimneys were struck off from the register in Bombay and one in Ahmedabad. In addition to the stationary chimneys there are portable chimneys controlled by the Commission, such as pertaining to Railway Locomotives, Road Rollers, Portable Boilers, Steam Ships, Launches etc.

3. During the year 31,240 hourly observations wore taken and 1,747 visits were paid by the Inspectors to different mills and industrial concerns in Bombay. In Ahmedabad 2,710 hourly observations were made and 843 visits were paid. In Sholapur 487 hourly observations were made and 14 visits were paid to the mills and factories.

4. In addition to the above full hourly observations 45 observations in Bombay and 16 in Ahmedabad were made for less than

one hour. No observation for less than one hour was taken in Sholapur.

The emission of dense black smoke (Scale No. 6) is strictly prohibited in Bombay as well as in other areas to which the Act has been applied. The average emission of smoke during the year was equal to *224 minute per hour of dense black smoke for each of the 31,240 full hour observations of the chimneys in Bombay?, '697 minute for each of 2,710 one hour observations of chimneys in Ahmedabad and 1*567 minute for each of the 487 one hour observations of chimneys in Sholapur.

5. In Bombay, 91 complaints of smoke nuisance were received during the year as against 88 in the preceding year and they have been suitably dealt with. The majority of the complaints were mainly against small industrial concerns such as metal casting, engineering works, bakeries, eating houses, hotels, dhobighats, confectionaries etc. The complaints largely related to inadequate heights of chimneys, improper arrangements of hoods and chimneys over the furnaces, chimneys worn out due to corrosion and standing at lower heights than the approved ones and overloading of boilers. In all such cases, the defects were rectified and the cause of the smoke nuisance eliminated. In some cases the complaints did not pertain to smoke nuisance but to heat and fume nuisance and they were directed to the Assistant Health Officers of the respective Wards of the Bombay Municipality for necessary action.

6. In Ahmedabad, two complaints of smoke nuisances were received and suitable action was taken to eliminate the nuisance. In Sholapur, no smoke nuisance complaint was received.

7. During the year, 28 prosecutions were filed in Bombay for breach of the provisions of the Act out of which 26 resulted in convictions and fines ranging from Rs. 5/- to Rs 100/-. Two cases were abated as summons could not be served on the accused owing to their death. No prosecutions for the breach of the provisions of the Act were filed at Ahmedabad. Four prosecutions were filed in Sholapur and they are pending for decision.

8. During the year the Commission examined 62 plans of proposed flues and chimneys and 27 for alterations, additions and renewals of the furnaces, chimneys etc. in Bombay.

9. The Sub-Committee in Ahmedabad examined 2 plans of new plants and 6 for alterations and additions in the existing plants. The Sub-Committee at Sholapur examined three plans for alterations and additions.

10. The Smoke Nuisance Commission consisted of the following members.

President.

- | | |
|--|-------------|
| 1. Shri R. F. Boga, I. A. S.,
Commissioner of Labour
from 1st April 1954 to
20th February 1955. | Ex-officio. |
| Shri V. P. Keni, Commis-
sioner of Labour from
21st February 1955 to 19th
March 1955. | do- |
| Shri R. F. Boga, I. A. S.,
Commissioner of Labour
from 20th March 1955 to
31st March 1955. | - d o |

Members.

- | | |
|--|---------|
| Shri D. S. Borker, Executive
Engineer, P r e s i d e n c y
Division. | - d o - |
| 3. Shri. N. G. Kevalramani,
Chief Inspector of Facto-
ries, "Bombay state, from
1st April 1954 to 31st
October 1954. | - d o - |

Shri N. L. Gadkari, Chief Inspector of Factories, Bombay State, from 1st November 1954 to 31st March 1955.	-do-
Dr. V. V. Puri, Executive Health Officer, Bombay Municipality.	'do-
Shri R. K. Gurtu.	Nominated by Govern- ment.
Shri K. S. Iyer. Shri K. G. Parikh. }	Elected by Millowners' Association, Bombay.
Shri S. H. Commissariat,	Elected by the Engineer- ing Association of India, Bombay.
Shri D. S. Marathe.	Elected by the Bombay Provincial National Trade Union Congress.

Sub-Committee, Ahmedabad.

*Chairman**

Shri M. D. Rajpal, I. A. S., Collector of Ahmedabad from 1st April 1954 to 4th May 1954.	Ex-officio.
Shri N. G. Saswadkar, Collector of Ahmedabad from 5th May 1954 to 31st March 1955.	-do-

Members.

Shri J. J. Patel, B. E.,
B. S. E., (1) Executive
Engineer, Ahmedabad
Division.

- | | | |
|----|---------------------------------|---|
| 3. | Shri Nanddas Haridas. | Elected by the Mill-owners' Association, Ahmedabad. |
| 4. | Shri Jayantilal Jamiatram Vyas. | Elected by Municipal Corporation, Ahmedabad. |

Sub-Committee, Sholapur.

Chairman.

- | | | |
|----|--|-------------|
| 1. | Shri GL L. Sheth, Collector of Sholapur. | Ex-officio. |
|----|--|-------------|

Members,

- | | | |
|----|--|---------------------------------------|
| 2. | Executive Engineers, Sholapur Division. | |
| | (1) Shri S. V. Lonkar. | -do- |
| | (2) Shri Godse. | -do- |
| 3. | The President Sholapur Borough Municipality. | Elected by the Sholapur Municipality, |
| | (1) Shri S. B. Baswanti, | -do- |
| | (2) Shri N. B. Soni. | -do- |
| 4. | Shri C. A. Cookson. | Elected by the Sholapur Millowners. |

11. In Bombay three meetings of the Commission were held and Sub-Committees at Ahmedabad and Sholapur met twice during the year.

12. The following table summarises the work of the year and also gives similar information of the preceding year in the areas.

(Bk) R 3-2

Place.	Year,	Observations of chimneys.	Visits to factories.	Test of appliances.
Bombay.	1953-54	27,191	1,437	7
	1954-55	31,285	1,747	8
Ahmedabad.	1953-54	1,936	760	33
	1954-55	2,726	843	.32
Sholapur.	1953-54	541	18	Nil.
	1954-55	487	14	Nil.

IB. The emission of smoke is recorded according to the following table:—

Scale No. 1	White.
Scale No. 2	Light Grey.
Scale No. 3	Grey.
Scale No. 4	Very Dark Grey.
Scale No. 5	Black.
Scale No. 6	Dense black.

For the purpose of smoke nuisance observations, only scales Nos. 4, 5 and 6 are cognizable. The scales Nos. 5 and 4 are related to scale No. 6 as follows :—

One minute of scale No. 5 (black) is taken as equal to 0'55 of scale No. 6 (dense black) and one minute of scale No. 4 (very dark grey) is taken as equal to 0'37 minute of scale No. 6.

Observations of the smoke emitted are taken daily from various chimneys to see that they do not exceed the limits prescribed under the Rules. For the purposes of comparison and record, a series of observations of one hour duration are taken from which the monthly and annual average of smoke emissions are arrived at.

14. The following table shows the yearly average emission of smoke for Bombay and Ahmedabad for the first and last five years.

during which period statistics have been maintained, and for Sholapur for the years 1952-53, 1953-54 and 1954-55.

Year.	Place.	(Scales Nos. 6 and 5 and 4 reduced to scale No. 6 i. e. dense black) minute per hour.
1913 February.	Bombay,	11-6
1913 March.		6'5
1914 5)		1-86
1915 J)		1-474
1916 L>		1-432
1917)'	»	1-235
1951 i>		0*343
1952 i>		0-350
1953 V		0-307
1954 >>		0-322
1955		0-308
1924 (November 1923 to March 1924)	Ahmedabad.	6-56
1925 March.	»	5-39
1926		3-5
1927 '''		2-68
1928 March.	Ahmedabad.	2-63
1929	»	2'00
1951 J>		0-788
1952)J		0-742
1953 *J		0-748
1954		0-7
1955 j>		0-714
1952 March.	Sholapur.	3-605
1953)»	j)	4-156
1954)J		3-162
1955	»	1-567

15. The following number of notices, intimations and statutory warnings were issued during the year :—

Place.	Notices.	Intimations.	Statutory Warnings.
Bombay.			
Factories.	110	16	102
Locomotives.	1		
Road Rollers, Cranes and Single boilers.	1		
Steam Ships.			
Tugs and Launches.			
	112	16	102
Ahmedabad,			
Factories.	23	Nil	Nil
Locomotives.			
Road Rollers, Cranes and Single boilers.			
	23	Nil	Nil
Sholapur.			
Factories.	23	1	1
Locomotives.			
Road Rollers.			
Cranes.			
	23	1	1

16. The Smoke Observation Cabin at Rifle Range Hill at Grhatkopar is erected and the same is now being used for taking smoke observations.

17. The thanks of the Commission are due to the various mills and factory owners, heads of Engineering Departments etc. for their co-operation with the Department in securing the abatement of smoke nuisance by dealing departmentally with the negligent drivers and firemen responsible for causing offensive smoke.

As in the past, the officers of the Municipality and particularly those of the Health and Licencing department co-operated by forwarding complaints, supplying information regarding new and defective installations and advising complainants to get in touch with this Department to redress their grievances.

The Commission hereby places on record its appreciation of the efficient manner in which the Inspecting and clerical staff carried out their work.

V. P. KENI,

Commissioner of Labour & President,
Bombay Smoke Nuisances Commission.

Bombay, 11th July 1955

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(Bk) R 3-3

RECORD OFFICE,
SECRETARIAT, BOMBAY