

# TUBERCULOSIS IN NATAL

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During the period June to November 1954, an X-ray tour of Western Natal was undertaken at the request of various local authorities. The itinerary included the towns of Estcourt, Colenso, Ladysmith, Newcastle, Dannhauser, Dundee, Glencoe, Greytown, Nottingham Road, Karkloof and Gillitts.

Unselected volunteers of all ages and racial groups and of both sexes were X-rayed at their own request. Many of the town employees live outside the municipal boundary but fall within a magisterial area, classed as

a rural district. Urban and rural non-Europeans so intermingle that comparisons between population groups X-rayed would not be reliable.

A special group encountered included those who laboured in quarries, brickworks and other dusty occupations. It was intended to keep this data separate, for comparison with other groups, but it was found that Natives commonly work alternately on the mines and in other industries in this area, where there are many collieries dotted about. No higher rate of tuber-

TABLE I. DISTRIBUTION OF CASES BY RACE, SEX AND AGE

Age-Group (years)	Europeans			Coloured			Indian			Native		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total
0-9												
X-rayed .. .. .	884	849	1,733	78	90	168	629	581	1,210	928	1,059	2,023
Tuberculosis cases ..	0	1	1	0	0	0	0	1	1	8	2	10
% " " " "	0	0.1	0.06	0	0	0	0	0.2	0.09	0.9	0.2	0.4
10-19												
X-rayed .. .. .	1,367	1,360	2,727	88	84	172	1,282	829	2,111	3,040	2,958	5,998
Tuberculosis cases ..	1	1	2	1	0	1	2	1	3	11	9	20
% " " " "	0.07	0.07	0.07	1.1	0	0.6	0.2	0.1	0.1	0.3	0.3	0.3
20-29												
X-rayed .. .. .	388	214	602	16	27	43	263	122	385	2,401	597	2,998
Tuberculosis cases ..	1	1	2	1	0	1	2	0	2	31	2	33
% " " " "	0.3	0.5	0.3	6.2	0	2.3	0.7	0	0.5	1.3	0.3	1.1
30-39												
X-rayed .. .. .	409	176	585	19	15	34	136	77	213	1,680	289	1,969
Tuberculosis cases ..	1	0	5	0	0	2	3	0	0	29	4	34
% " " " "	0.2	0	0.9	0	0	5.9	2.2	0	0	1.7	1.4	1.7
40-49												
X-rayed .. .. .	203	144	347	12	4	16	74	47	121	1,027	184	1,211
Tuberculosis cases ..	1	0	1	0	0	0	3	0	3	29	4	33
% " " " "	0.5	0	0.3	0	0	0	4.1	0	2.4	2.8	2.2	2.7
50-59												
X-rayed .. .. .	145	56	201	5	1	6	32	22	54	454	137	591
Tuberculosis cases ..	1	0	1	0	0	0	1	0	1	21	3	24
% " " " "	0.7	0	0.5	0	0	0	3.1	0	1.8	4.6	2.2	4.1
60 and over												
X-rayed .. .. .	40	41	81	3	2	5	21	7	28	235	158	393
Tuberculosis cases ..	1	0	1	0	0	0	1	0	1	10	7	17
% " " " "	2.5	0	1.2	0	0	0	4.7	0	3.5	4.3	4.4	4.3
Total												
X-rayed .. .. .	3,436	2,840	6,276	221	223	444	2,437	1,685	4,122	9,765	5,418	15,183
Tuberculosis cases ..	9	4	13	2	2	4	9	2	11	141	30	171
% " " " "	0.3	0.1	0.2	0.9	0.9	0.9	0.4	0.1	0.2	1.4	0.5	1.1

culosis was in fact detected in the group working in dusty occupation; a few cases in this group diagnosed as suffering from silicosis gave a mining history.

Many colliery managements requested the services of the mass X-ray unit. Findings in this group form the subject of a separate report.

*Criteria for Diagnosis:*

Initial diagnosis was made on the radiological appearance of the 70 mm. miniature film. Where no certain opinion could be given, the patient was recalled for large X-ray plates. In a minority of cases sputum tests were done.

Patients were diagnosed as having active tuberculosis if their X-ray plates presented certain characteristic features, viz:

1. Pleural effusion.
2. Primary or minimal tuberculosis.
3. Unilateral or bilateral pulmonary densities having the usual appearance and distribution of tuberculosis.
4. Pulmonary densities with cavitation.

Classification of positive cases by race, sex and age is given in Table I.

Within recent years the Union Health Department has organized a number of mass X-ray surveys and by various tours has provided urban and rural local

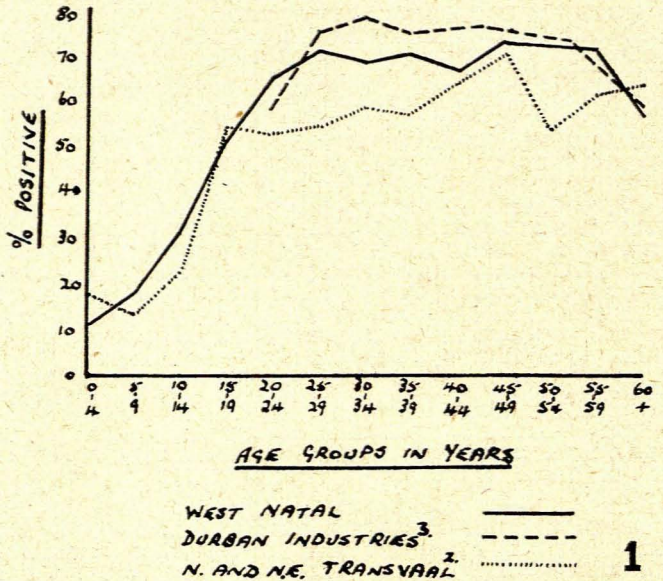


Fig. 1. Comparison of Mantoux results in Natives from (1) West Natal; (2) Durban (industries), (3) N. and N.E. Transvaal.

TABLE II. COMPARISON OF POSITIVE TUBERCULOSIS FINDINGS

Area and Author	Age-Group	Europeans		Coloured		Indian		Natives	
		No. X-Rayed	% Tub <sup>s</sup> .	No. X-Rayed	% Tub <sup>s</sup> .	No. X-Rayed	% Tub <sup>s</sup> .	No. X-Rayed	% Tub <sup>s</sup> .
Bechuanaland—Schechter <sup>1</sup>	All Ages	—	—	—	—	—	—	—	—
Western and North Western Cape—Osburn <sup>5</sup>	20 yrs and over	4,429	0.8	15,497	3.9	—	—	5,603	1.4
N. & E. Transvaal—Schneider <sup>2</sup>	15 yrs and over	—	—	—	—	—	—	3,918	1.5
Transkei—Wiles & Rabie <sup>4</sup>	16 yrs and over	—	—	—	—	—	—	16,105	2.9
West Natal—Osburn	20 yrs and over	1,816	0.5	104	2.9	801	0.9	7,162	2.0

authorities with X-ray facilities, often where they were lacking.

Although much of the work was not done on statistically selected samples of the population, and was not planned as a survey, some idea of the prevalence of tuberculosis has been gained.

From recent reports, comparisons of the prevalence of tuberculosis in racial groups from different areas have been made in Table II.

TUBERCULIN TESTING

The procedure adopted was that described by Fine.<sup>3</sup>

TABLE III. REACTION TO MANTOUX TEST IN NATIVES BY AGE

Age-Group (years)	Number tested	Number positive	% Positive
0-4	218	24	11.0
5-9	1,465	267	18.2
10-14	1,431	477	33.2
15-19	326	161	49.3
20-24	199	131	65.8
25-29	187	133	71.1
30-34	134	92	68.6
35-39	257	181	70.3
40-44	63	42	66.7
45-49	49	37	75.5
50-54	22	9	40.9
55-59	31	22	70.9
60 and over	26	15	57.7
Total	4,408	1,591	36.3%

Test dose was 0.1 c.c. of 1/1000 P.P.D. solution injected intradermally into the forearm. A positive reaction was taken as an area of induration measuring not less than 6 mm. in diameter.

The results (for Natives) are shown by age in Table III. In Fig. 1 these results are compared in graphic form

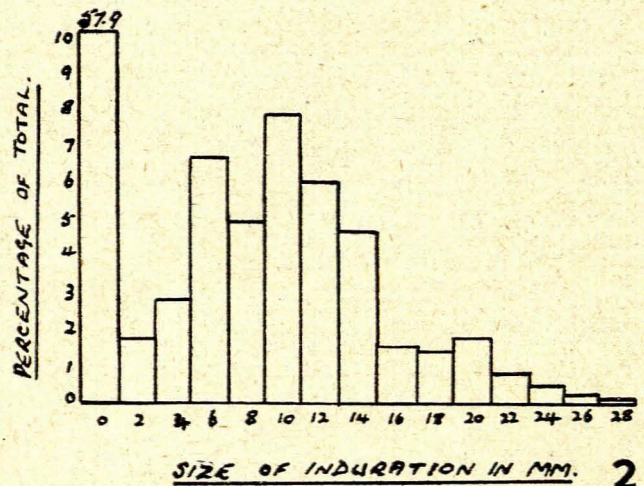


Fig. 2. Frequency distribution of size of positive Mantoux reactions.

with the findings obtained in Durban industries and in the Transvaal.

The frequency distribution of different sizes of the indurated area of the tuberculin reaction according to transverse diameter is shown for the present survey by the histogram in Fig. 2.

#### SUMMARY

A mass X-ray tour of Western Natal disclosed the following prevalence of active pulmonary tuberculosis in the population examined:

	Europeans	Coloured	Indian	Native
	%	%	%	%
All ages .. ..	0.2	0.9	0.2	1.1
Excluding children	0.5	2.9	0.9	2.0

Mantoux test were also carried out. Statistical tables and graphs are presented.

I thank the Secretary for Health for permission to publish this report and Dr. Dormer for his advice.

#### REFERENCES

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