QE 946
75
B9
C. 2

APPENDIX II. PARTIAL ANALYSES OF MANGANESE AND IRON SAMPLES.

ANALYSES OF MANGANESE SAMPLES

Samples from bed No. 1

Sample No.†	Mn	Fe	P	SiO_2	Al_2O_3	Insoluble
Outcrop samples:						
2	46.8	11.6	0.20	....	....	1.85
4	46.4	11.5	.08	1.26	2.50	....
6	45.9	11.9	.20	....	....	2.06
8	47.9	9.9	.30	.40	1.73	....
10	47.8	10.7	.17	.56	1.04	....
12	45.2	9.5	.16	....	....	5.8
14	40.3	11.9	.25	....	....	....
16	45.8	11.8	.18	....	....	....
18	45.9	10.8	.15	....	....	....
20	39.4	15.8	.27	3.85	2.20	....
22	39.7	16.1	.23	....	....	....
24	45.9	9.3	.33	....	....	....
26	45.4	10.9	.24	1.77	2.16	....
28	48.4	12.3	.19	.84	.98	....
100	47.4	11.3	.12	....	....	....
102	47.5	10.8	.13	.43	....	....
104	46.3	11.4	.20	.26	....	....
106	44.3	13.0	.11	1.71	2.51	....
Mine samples:						
1 A	49.6	8.50	0.12	0.34	....	....
1 E	47.6	9.6	.19	.14	....	....
1 H	48.7	8.7	.14	.42	....	....
1 L	48.8	8.8	.16	.44	....	....
1 N	46.4	10.7	.14	.29	....	....
2 A	50.7	8.9	.11	....	....	1.32
2 D	47.3	9.9	.17	.46	....	....
3 A	50.3	8.4	.19	1.30	....	....
3 C	48.1	9.1	.08	.56	....	....
3 D	49.3	10.2	.12	....	....	.67
3 F	47.4	8.9	.16	.46	....	....
3 G	48.2	9.1	.12	.54	....	....
4 A	49.2	9.3	.24	.23	....	....
4 B	47.4	10.0	.18	.20	....	....
4 D	46.4	10.6	.17	.19	....	....
5 A	47.0	11.0	.17	1.44	....	....
5 B	47.2	11.0	.16	1.31	....	....
5 C	48.5	8.3	.16	2.15	....	....
5 E	48.7	8.5	.16	.21	....	....
6 A	48.7	11.6	.11	.87	....	....
6 C	47.7	9.9	.05	.78	....	....
6 D	47.6	8.9	.11	.64	....	....
6 E	49.5	9.9	.13	....	....	1.01
7 A	47.9	10.1	.26	.78	....	....
7 D	49.8	9.0	.18	.11	....	....
7 E	47.0	9.9	.07	....	....	1.11
9 A	50.7	8.9	.17	....	....	.64
9 B	48.5	10.7	.15	.02	....	....
9 C	48.7	11.4	.12	....	....	.55
10 A	46.9	12.0	....	....	....	....
12 A	46.6	11.8	.21	....	....	....
12 O	49.2	8.8	.07	....	....	1.13
H	42.7	14.8	.29	2.29	1.77	....
Samples from bed No. 2						
Outcrop samples:						
1	45.8	10.9	0.16	....	....	1.10
3	44.6	11.6	.14	....	....	1.86
5	46.0	12.1	.49	1.03	2.08	....
7	47.3	10.7	.20	....	....	1.00
11	47.2	10.7	.24	....	....	.86
13	47.5	11.2	.10	....	....	1.42
15	48.6	10.6	.12	.36	.92	....
17	48.0	10.8	.13	....	....	2.26
19	46.9	10.4	.23	....	....	.73
21	48.6	9.8	.21	....	....	.67
23	45.1	13.9	.18	1.31	1.90	....
25	46.9	12.4	.23	....	....	1.72
27	47.9	12.3	.13	....	....	.94
29	46.6	11.1	.19	1.11	1.06	....
31	46.8	11.6	.14	1.33	.11	....
33	48.3	10.2	.16	1.70	1.42	....
35	46.9	11.6	.17	.88	.92	....
101	47.0	11.8	.07	.61	....	....
103	47.8	10.8	.19	.50	....	....
105	46.9	12.1	.2	.96	1.94	....

ANALYSES OF IRON SAMPLES

Samples from Band' Alta formation

Sample No.†	Fe	SiO_2	Mn	P	Al_2O_3	TiO_2	S	CaO	MgO	H_2O	Analyst
Outcrop samples:											
1	53.7	23.4	0.1	0.1	....	....	....	Tr.	...	...	Helena Dantas Grande
2	58.4	14.9	.1	.07	....	....	....	Tr.	...	...	Do.
3	51.4	26.2	.1	.1	....	....	....	Tr.	...	...	Do.
4	58.2	16.4	.1	.08	....	....	....	Tr.	...	...	Do.
5	53.0	23.1	.1	.09	....	....	....	Tr.	...	...	Do.
10	49.5	27.8	.60	.07	0.36	0.01	0.017	...	...	...	Michael Fleischer
11	62.9	9.02	.07	.09	.48	0.	.036	...	...	...	Do.
12	59.6	14.1	.24	.05	.04	.02	.04	...	...	...	Do.
13	62.0	11.0	.06	.05	.39	.03	.056	...	...	...	Do.
14	59.7	14.66	.05	.02	.02	.01	.018	...	...	...	Do.
15	56.6	12.8	2.16	.03	.89	.06	.04	...	...	...	J. J. Fahey
16	48.7	28.4	.41	.07	1.01	.04	.05	...	...	...	Do.
18	58.9	14.6	.21	.02	0.00	.06	.03	...	...	...	Do.
19	61.5	10.2	.15	.01	1.10	.05	.05	...	...	...	Do.
21	62.1	10.1	.04	.03	.56	.05	.05	...	...	...	Do.
22	60.9	11.7	.03	.06	.86	.07	.02	...	...	...	R. E. Stevens
23	56.6	17.1	.06	.07	1.71	.07	Tr.	...	...	...	Do.
24	58.1	16.4	.07	.05	.13	.03	.02	...	...	...	Do.
25	61.3	11.4	.01	.05	.86	.03	Tr.	...	...	...	Do.
26	59.2	14.2	.02	.09	1.08	.03	Tr.	...	...	...	Do.
28	58.9	14.3	.02	.06	.83	.05	....	...	...	...	M. K. Carron
29	61.8	10.7	.02	.06	.63	.07	....	...	...	...	Do.
30	61.8	10.3	.01	.06	.65	.07	....	...	...	...	Do.
31	60.0	13.4	.01	.06	.89	.12	....	...	...	...	Do.
32	56.1	18.2	.39	.06	1.11	.07	....	...	...	...	Do.
33	51.6	24.7	.03	.03	1.09	....	....	...	...	...	Charles Milton
34	56.3	18.3	.02	.02	.59	....	....	...	...	...	Do.
35	58.2	17.0	.01	.02	.32	....	....	...	...	...	Do.
36	56.1	19.0	.01	.015	.81	....	....	...	...	...	Do.
37	60.6	13.3	.01	.015	.62	....	....	...	...	...	Do.
38	55.3	20.7	.02	.07	.10	.01	....	...	...	...	J. M. Axelrod
39	34.9	49.4	.02	.03	.24	.05	....	...	...	...	Do.
40	55.1	21.1	.01	.06	.04	.02	....	...	...	...	Do.
41	51.3	26.3	.11	.06	.07	.04	....	...	...	...	Do.
44	53.6	21.9	.11	.10	.07	.05	....	...	...	...	Do.
45	60.3	12.5	.005	.08	.32	.04	....	...	...	...	R. C. Wells
46	56.3	17.3	.02	.07	.88	.06	....	...	...	...	Do.
47	59.0	14.6	.009	.09	.82	.03	....	...	...	...	Do.
48	56.3	18.1	.02	.08	.24	0.00	....	...	...	...	Do.
49	61.5	10.6	.13	.10	1.05	.04	....	...	...	...	R. C. Wells and G. Switzer
50	55.7	18.2	.01	.03	1.88	.05	....	...	...	...	Do.
51	54.7	19.6	.01	.06	1.97	.10	....	...	...	...	Do.
52	53.0	18.9	.01	.07	.15	.12	....	...	...	...	Do.
53	60.4	12.2	.01	.14	.52	.20	....	...	...	...	Do.
54	59.9	12.7	.02	.10	.72	.30	....	...	...	...	Do.
Average...	56.9	17.3	.08*	.06	.65	.05	.036	...	...	...	
Samples from colluvial ore											
6 (Coarse)	63.6	3.1	2.6	0.12	....	....	....	Tr.	...	...	
(Fine)	29.1	33.5	.5	.11	....	....	....	...	...	...	
Samples from canga											
55	61.3	4.5	0.40	0.16	4.22	0.17	....	None	0.02	2.96	R. C. Wells and G. Switzer

† Locations of samples shown on plates 5 and 6.
* Sample 15 is omitted from the average because it was secondarily enriched.

Source of analyses.—The analyses of the manganese outcrop samples are, except where individually credited, values arrived at by averaging results of analyses made in the laboratories of the Departamento Nacional da Produção Mineral, the Geological Survey, and the Instituto Paulista Technologica de São Paulo on split fractions of the same samples. The values for the mine samples are averages of analyses performed by the Departamento and the Survey laboratories only. Analyses of the first five iron samples are by an analyst of the Departamento Nacional da Produção Mineral; the other iron analyses are by analysts of the Geological Survey.

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