

The above are low-class manures, with an excessive amount of calcic carbonate in the form of coral, shells, &c. If some means could be devised so that the guano could be screened before leaving the islands its value would be increased. The value of phosphatic guanos depends upon the percentage of tricalcic phosphate present. Although no doubt on many of our New Zealand soils the carbonate of lime would be beneficial, yet, where it is desirable to apply lime, it could be done in a cheaper way. One important feature in the Chesterfield guano is the small amount of silica it contains. It is generally dry and in good mechanical condition.

Other phosphatic guanos have been examined—namely, the Coral Queen, Howland Island, Abrolhos or Rat Island, Malden Island, and Port Adelaide. The first four are of much better quality than the guano of the Chesterfield Islands, and if the supply holds out they will probably be the source of the phosphates for our superphosphate industry for some time to come. The Port Adelaide samples are inferior to the Chesterfield, and contain an unusually high percentage of sand. The following analyses will show the composition of these guanos, with that of two others, the sources of which are not known:—

Table III.—Analyses of Phosphate Guanos.

Name of Guano.	Laboratory No.	District received from.	Moisture.	Organic Matter.	Silica.	Tricalcic Phosphate.	Calcic Carbonate.	Alkalies, &c.	Nitrogen.	Money-value per Ton.
Coral Queen	247	Christchurch ..	6.46	13.04	0.26	56.40	24.00		1.09	£ s. d. 5 17 6
"	758	Walton	21.16		0.18	53.62	25.04		0.42	5 4 3
"	826	East Hamilton ..	17.22		0.16	57.60	22.60	2.42	0.56	5 13 3
Howland Island ..	267	Waikato	8.66	10.04	1.60	50.10	29.05	0.55	0.36	4 17 0
"	519	Christchurch ..	12.95	11.89	0.20	61.80	12.06	1.10	0.47	6 0 0
"	633	Dunedin	5.00	9.40	0.20	56.62	25.88	2.90	0.31	5 8 6
Rat Island	580	Christchurch ..	8.90	21.72	4.00	51.52	6.62	7.24*	0.98	5 7 0
"	581	"	9.90	21.44	3.98	54.13	1.49	9.06†	0.89	5 10 9
Malden Island ..	392	Thornbury ..	3.90	8.40	0.10	61.91	24.28	1.41	0.81	6 4 3
Port Adelaide	Christchurch ..	18.83	10.95	31.08	16.02	3.70	19.42‡	1.33	2 5 6
"	380	Invercargill ..	10.15	10.48	36.00	30.49	6.00	6.88§	0.67	3 4 6
Not known	260	Thornbury ..	5.20	10.18	46.82	32.90	4.50	0.40	0.67	3 9 0
"	276	Christchurch ..	16.25	8.09	5.68	60.77	9.21†		0.56	5 19 3

* Containing iron and alumina, 3.45.

† Containing iron and alumina, 3.98.

‡ Containing iron and alumina, 2.25.

§ Containing iron and alumina, 2.76.

|| Containing iron and alumina, 7.00.

Akaroa Guano.

During the years 1888 and 1889 a quantity of guano was brought from the caves at Akaroa. The samples varied considerably in quality. Some were nitrogenous, and equal to the best Peruvian guano, while others were worthless. The better class ones contained feathers, which furnished a portion of the nitrogen represented in the analyses. Most of the samples, however, contained rather a high percentage of silica and insoluble matter; and, as this contained iron, the guano would not be suitable for the preparation of superphosphate, even supposing it could be procured with a higher percentage of tricalcic phosphate. The varied composition and value of these guanos shows well the importance of purchasing manures only on the results of analysis.

Table IV.—Analyses of Akaroa Guano.

Laboratory No.	District received from.	Moisture.	Organic Matter.	Silica.	Phosphoric Anhydride.	Equivalent to Tricalcic Phosphate.	Calcic Ditto.	Alkalies, &c.	Nitrogen.	Money-value per Ton.
237	Christchurch ..	15.32	9.78	54.99	13.39	29.25	15.86	9.89	1.66	£ s. d. 3 18 6
238	"	16.48	21.64	10.02	13.68	29.88	16.20	2.75	3.92	5 7 0
250	"	22.28	30.26	20.80	9.25	20.21	10.96	6.45	5.11	5 1 9
251	"	23.15	49.49	5.13	6.28	13.73	7.45	8.50	11.83	8 9 6
252	Kirwee	19.83	51.53	8.33	6.52	14.23	4.59	9.20	11.62	8 7 9
259	Christchurch ..	45.74		34.73	7.47	16.30	5.76	5.30	4.97	4 12 6
284	"	14.40	50.46	3.32	15.07	32.99	11.00	5.75	10.43	9 11 0
286	Lincoln	13.37	24.53	17.84	19.78	43.17	16.11	8.37	3.71	6 10 9
293	"	16.85	20.67	27.88	12.90	28.16	12.32	9.38	2.94	4 12 0
347	Christchurch ..	45.12		16.32	11.20	24.44	8.40	18.96	3.85	4 15 0
348	"	29.46		31.10	9.80	20.39	9.85	19.79	1.68	3 1 0
349	"	40.03		27.05	9.20	20.08	9.18	14.54	1.75	3 1 0
388	"	15.50	10.32	51.64	5.27	11.50	6.21	11.06	0.70	1 11 6
389	"	13.27	12.67	47.92	6.35	13.86	8.02	11.77	0.63	1 15 4