

527. The Bird Guano and Fertilizer. Sample received Jan. 26, from Samuel Hubbard, Hartford. Dealer L. A. Bradley, 17 Colony St. West Meriden. "Selling Price at Factory \$30 per ton."

COMPOSITION.

Organic and volatile matter,*	5.37
Carbonate of lime,	56.19
Carbonate of magnesia,	2.38
Sand silica and clay,	33.45
Oxide of iron with traces of alkalies, chlorine, sulphuric and phosphoric acid,	2.70

100.00

*With nitrogen, 0.20

This sample is an inferior quality of shell-marl, said, in the accompanying circular, to be taken from the shores of Cayuga lake in New York. It corresponds most nearly in composition and fertilizing value to leached ashes, is however rather inferior to ordinary leached ashes which cost from \$4.50 to \$7.50 per ton according to the amount of transportation.

APPLE POMACE AS A FERTILIZER.

Last spring a sample of decaying apple pomace was sent to the Station by D. H. Van Hoosear Esq., East Wilton with an inquiry as to its fertilizing value. Prof. F. H. Storer having made an analysis of fresh pomace, it appeared unnecessary to analyze the sample. Practical trial has established that there is very trifling fertilizing value in apple pomace, and the analysis sustains and explains this view. Prof. Storer found in it as made from Baldwin apples:*

Water,	77.21
Organic matter,†	23.29
Ash,	.50

100.00

†With nitrogen, .16

The ash is nearly half potash. The organic matter consisting mainly of carbohydrates, might be serviceable in a compost, in the same sense that the organic matter of swamp muck or saw, dust may be, but evidently there is nothing in the apple pomace to justify much handling of a material which consists so largely of water.

APPLE POMACE AS CATTLE FOOD.

Recently Mr. J. H. Dickerman of Mt. Carmel brought a

sample of frozen fresh apple pomace to the Station with the statement that while horned cattle scarcely touched it, his horses and colts ate it with evident relish and benefit. The sample, No. xcviI, was analyzed with the following result. Prof. Storer's analysis is given by way of comparison:

	XCVI.	
Water	72.62	77.21
Ash	0.81	.50
Albuminoids	1.63	.98
Crude Fiber	5.93	3.99
Nitrogen-free extract	17.08	15.71
Fat and wax	1.97	1.79
	100.00	100.00

In respect to the quantities of the various food-elements the analysis shows that this pomace is superior to corn-fodder and to turnips, mangolds and all of our root crops except the potato, and that it is but little inferior to the last-named tuber.

The digestibility of the food-elements in the pomace is not known with certainty but probably the nitrogen free-extract, is nearly equivalent to the same amount of digestible carbohydrates (starch, sugar) and there can be little doubt that the pomace is, in nutritive quality, equal if not superior to the feeding stuffs above named, potatoes alone excepted.

This sample was from a press of more than ordinary power and therefore rather dryer than apple pomace commonly is. It is considerably richer in albuminoids and fiber than Prof. Storer's sample, which may probably be due to the greater proportion of seeds, cores, and skins contained in common cider apples over that found in the sound Baldwins from which his sample was obtained.

Prof. Storer in his paper,* published in 1875, remarks: "It would be interesting to determine by actual trial whether a process of preservation which is largely employed in Europe for keeping a variety of soft and juicy materials might not be available for the preservation of pomace." He refers here to the "sour fodder" of the Germans, which is neither more nor less than "ensilage," and his suggestion is well worth considering.

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*Bulletin of the Bussey Institution, vol. I, p. 365.