

The Connecticut Agricultural Experiment Station.

BULLETIN No. 81.

OCTOBER, 1884.

NOTICE.

The Station is now revising the list of those to whom its **Bulletins are sent, in order to avoid waste.** It requests all who now receive the Bulletins and wish to continue to receive them and all others in the State who desire them to send their names and addresses to this Station.

The Bulletins will be sent without further special request to those public institutions and periodicals which have received them hitherto.

In accordance with the requirements of the fertilizer law, a number of copies of each Bulletin are regularly sent to every post office in the State. These are addressed to the Postmaster with request to distribute. The number sent will be increased in any case on application.

TO MANUFACTURERS AND DEALERS IN COMMERCIAL FERTILIZERS IN CONNECTICUT.

Attention is called to the requirements of the Fertilizer Law now in force in this State. A prompt and full compliance with its requirements by manufacturers and dealers next season will save them and the Station much annoyance. The full text of the law has been printed and circulated in the Station Bulletins and copies will be sent on application.

Section 2 requires manufacturers to send a sealed sample of each fertilizer to the director of the Station, and section 9 requires the director to make and publish annually one or more analyses of each brand; but the law does not require, that an analysis shall be made on the sample sent by the manufacturer, nor is this commonly done. Such samples are preserved as manufacturers' standards and are only analyzed in exceptional cases, as for instance, when the agents of the Station have not found and drawn samples of the goods from dealers in the State during the season. In such cases it is necessary for the Station, in order to comply with the law, to make the analyses of those brands on the manufacturers' samples. If, however, the manufacturer has neglected to deposit a sample as required by law or has not deposited one during the current year, it may happen that although the analysis fee has been paid, the Station cannot make an analysis of the goods on which it has been paid.

POLLARD ONCE MORE.

The first work of this Station on its establishment in 1877 was to analyze two samples of Pollard's Fertilizers, sold by "H. M. Pollard Agricultural Chemist" and made by "Pollard Bros." of New Haven, from harbor mud. The goods were a little more valuable agriculturally, and decidedly less valuable commercially than the barrels in which they were put up. The results of analysis were published and Mr. Pollard went elsewhere.

In the Station Report for 1880, p. 26, is some further account of his operations and an analysis of "Pollard's Concentrated Privy Guano," brought to the Station by a person who gave his name and address as F. C. Cook, 119 Ellsworth ave., New Haven, but who probably was H. M. Pollard, and who said he had purchased 10 tons of the material. A sample of it was made up of nitrates and phosphates of potash, soda and ammonia flavored with night soil. It could not be sold by the ton, with any profit to the maker or compounder, for much less than \$130 per ton, but was said to have been bought for \$65.00.

The right to manufacture this fertilizer was afterwards sold or offered for sale at several places in Pennsylvania for \$500 by the enterprising originator. The analysis made at this Station was shown and it was asserted that this concentrated privy guano could be made for \$13.56 per ton.

Last August the Station analyzed four samples of "Pollard's Special Fertilizers," sent by the New England Homestead, being samples got by them of the Perry Oil Co., Pawtucket, R. I., with whom "Prof." H. M. Pollard, the "Agricultural Chemist," had an office at that time.

The analyses and valuations are as follows :

POLLARD SPECIAL FERTILIZERS.

Station No.	Top Dressing.	For Corn.	For Potatoes.	For Cabbage.
	1278	1279	1280	1281
Nitrogen as ammonia	3.11	2.71	2.16	3.03
Nitrogen of organic matter	2.63	-----	-----	-----
Soluble phosphoric acid96	.59	.35	.43
Reverted phosphoric acid	3.03	4.09	4.02	3.85
Insoluble phosphoric acid	2.31	6.07	6.57	5.41
Potash	6.48	6.26	5.83	5.45
Cost	\$50.00	50.00	50.00	50.00
Valuation	\$39.15	31.24	28.31	30.60

The guarantees were :

Ammonia	3½	3½	3	4
Phosphoric acid	5	8¾	7½	8¾
Potash	4	5½	8	5½

According to the N. E. Homestead, Pollard has been operating lately in Rhode Island and southeastern Massachusetts ; "analyzing" soils and prescribing for them at the very modest price of 50 cents per acre. The reason for again referring to the man is to warn Connecticut farmers against him. His effrontery is boundless and it would not be at all surprising if he should before a great while begin his swindling operations in this State again—and practice for a time successfully. "Prof." H. M. Pollard, "Dr." Pollard, or "Prof. Geo. H. Stockbridge," "Agricultural Chemist," "State Chemist to Rhode Island and afterwards to Massachusetts," "not Prof. Stockbridge of the Massachusetts Agricultural College, but "another Stockbridge," sometimes "a brother," sometimes "a nephew," but always the same ubiquitous Pollard, is described as a man "62 years old, 5 feet 7½ inches in height, weighs about 180 pounds, has a light complexion, light eyes, sandy gray whiskers and gray hair."

The New England Homestead of Sept. 6, 1884 contains a full and entertaining account of the operations of this persistent and picturesque swindler.

FERTILIZER ANALYSES.

MISCELLANEOUS AND WASTE PRODUCTS.

1297. Ashes from brick kiln, Berlin, Conn. Sent by R. A. Moore, Kensington.

ANALYSIS.	
Phosphoric acid80
Potash	1.42
Sand and clay insoluble in acid	64.80

Large quantities of wood are yearly consumed in this State in burning brick, especially at North Haven, Berlin and Windsor. At Berlin alone 15-20 million brick are annually burned requiring 3000 to 4000 cords of wood. What amount of wood is consumed at the other brick yards is unknown. A low estimate of the amounts of phosphoric acid and potash recoverable in the ashes of 3500 cords of wood is

Phosphoric acid	700 lbs.
Potash	1300 lbs.

Which is about equal to what would be found in one and two-fifths tons of Charleston rock and one and one-third tons high grade muriate.

If the brick kiln ashes could be kept from large admixture of sand and brick dust, they would be valuable to farmers in the vicinity. Poor as they are now (three-fifths sand and brick dust) they would no doubt be beneficial on many soils, but the *profitableness* of their use at \$4.00 a ton besides hauling, is very doubtful.

1166. Unleached house ashes. Sent by D. H. Van Hoosear, Wilton. These ashes weigh 35 lbs. to the bushel.

ANALYSIS.	
Potash (soluble in water)	7.51
Phosphoric acid	1.98

1258. Paper mill dusting or waste. Sent by Henry Barrows, North Manchester. Cost, \$5.00 per ton.

ANALYSIS.	
Water	5.40
Organic and volatile matters	45.16
Ash	49.44
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	100.00

The organic matter contains nitrogen 1.39 per cent. The ash contains phosphoric acid .39 and sand and matters insoluble in acid 41.84 per cent.

1167. Hen manure, dry. Sent by D. H. Van Hoosear, Wilton.

ANALYSIS.

Phosphoric acid	2.43
Potash	1.59
Nitrogen	2.81

CASTOR POMACE.

1315. R. B. Brown Oil Co's Castor Pomace. Made by the R. B. Brown Oil Co., St. Louis, Mo. Sampled and sent by the company. *Manufacturer's sample.*

1154. Collier White Lead and Oil Co's Castor Pomace. Made by Collier White Lead and Oil Co., St. Louis, Mo. Stock of Olds & Whipple, Hartford. Sample drawn by Station Agent.

1306. St. Louis Lead and Oil Co's Castor Pomace. Made by St. Louis Lead and Oil Co. Stock of F. Ellsworth, Hartford. Sample drawn by Station Agent.

ANALYSES AND VALUATIONS.

	1315	1154	1306
Nitrogen	5.35	5.68	5.60
Phosphoric acid	1.80	1.99	1.90
Potash	1.19	1.16	.94
Cost per ton	-----	\$25.00	24.00
Valuation per ton.....	\$22.43	23.83	23.24

The price of Castor Pomace was \$25.00 in the spring, when sample **1154** was obtained. It could be got a little cheaper in the fall, when sample **1306** was drawn.

GROUND BONE.

1308. Bosworth Bro's Ground Bone. Made by Bosworth Bros., Putnam. *Manufacturer's sample.*

1290. E. F. Coe's Ground Bone. Made by E. F. Coe, 16 Burling Slip, N. Y. Stock of Buck, Durkee & Stiles, Willimantic. Sample drawn by Station Agent.

1309. Harris's Ground Bone. Made by G. H. Harris & Son, Eagleville. *Manufacturer's sample.*

1284. Preston's Ground Bone. Made by Preston & Son, Greenpoint, L. I. Stock of J. B. Merrow & Sons, Merrow. Sample drawn by Station Agent.

MECHANICAL ANALYSES.

		1308	1290	1309	1284
Finer than	$\frac{1}{50}$ -----	36	43	16	38
"	" $\frac{1}{25}$ -----	32	14	22	17
"	" $\frac{1}{12}$ -----	29	18	21	23
"	" $\frac{1}{6}$ -----	3	13	17	13
Coarser	" $\frac{1}{6}$ -----	0	12	24	9
		100	100	100	100

CHEMICAL ANALYSES AND VALUATIONS.

Station No.	Nitrogen.		Phosphoric acid.		Cost per ton.	Valuation per ton.
	Found.	Guaranteed.	Found.	Guaranteed.		
1308	4.09	3-4	21.95	22-23	35.00	37.26
1290*	2.20	1.8-3.0	12.68	9.1-11.4	35.00	21.89
1309	3.99	---	20.48	---	---	31.03
1284	4.02	3-4	9.18	9-11	\$34.00	\$22.01

* No. 1290 also contains 2.00 per cent. of potash (2-3 per cent. sulphate of potash guaranteed).

SUPERPHOSPHATES AND GUANOS.

Stat. No.	Name or Brand.	Manufacturer.	Dealer from whom Sample was taken.	Sampled by
1301	Bowker's Dissolved Bone.	Bowker Fertilizer Co., Boston.	Coburn & Gale, Hartford.	Station Agent.
1320	Bradley's B. D. Sea Fowl Guano.	Bradley Fertilizer Co., Boston.	Manufacturer.	Manufacturer.
1291	Davidge's Fish and Potash.	Russel Coe, Linden, N. J.	Smith & Sons, West Cornwall.	Station Agent.
1293	" " Special Favorite.	" " " "	" " " "	" " " "
1292	Common Sense Fertilizer No. 2.	The Common Sense Fertil. Co., Boston.	Quinebaugh Store, Danielsonville.	" " " "
1313	Buffalo Superphosphate, No. 2.	L. L. Crocker, Buffalo, N. Y.	Manufacturer.	Manufacturer.
1305	Soluble Pacific Guano.	Glidden & Curtis, Boston.	H. A. Stillman, Hartford.	Station Agent.
1310	Harris' Superphosphate.	G. H. Harris & Son, Engleville.	Manufacturer.	Manufacturer.
1311	Lister's Standard Phosphate.	Lister Bros., Newark, N. J.	" " " "	" " " "
1288	Lombard & Mathewson's Superphos.	Lombard & Mathewson, Warrenville.	Buck, Durkee & Sales, Willimantic.	Station Agent.
1314	Cooke's Dissolved Ground Bone.	National Fertilizer Co., Bridgeport.	Manufacturer.	Manufacturer.
1317	Quinnipiac Extra Superphosphate.	Quinnipiac Fertilizer Co., New London.	" " " "	" " " "
1282	Farmer's Friend Dissolved Bone.	Read & Co., N. Y.	" " " "	" " " "
1319	Swift-Sure Superphosphate.	M. L. Shoemaker, Philadelphia, Pa.	M. V. B. Lamb, Norwich.	" " " "
1316	Sparrow's Bone & Potash Phosphate.	Judson & Sparrow, Boston.	F. Ellsworth, Hartford.	F. Ellsworth.
1289	Stearns' Eagle Brand, Fish & Potash.	Stearns & Co., N. Y. & Fall River, Mass.	Manufacturer.	Manufacturer.
1287	Wilcox's Acidulated Fish Guano.	L. Wilcox & Co., Mystic Bridge, Conn.	A. S. Russell & Co., Meriden.	Station Agent.
1285	" " Fish Guano, Dry Ground.	" " " "	J. A. Lewis, Willimantic.	" " " "
SPECIAL FERTILIZERS.				
1300	Complete Grass Manure.	H. J. Baker & Bro., 215 Pearl St., N. Y.	R. B. Bradley, New Haven.	Station Agent.
1302	Special Oat Manure.	" " " "	Tolles & McFwen, Naugatuck.	" " " "
1286	Bowker's Storage Crop Manure.	Bowker Fertilizer Co., Boston.	Coburn & Gale, Hartford.	" " " "
1307	Chittenden's Complete Fertil. for Grain.	National Fertilizer Co., Bridgeport.	E. A. Watrous, Meriden.	" " " "
1304	Mapes' Tobacco Manure, Conn. Brand.	Mapes' F. & P. G. Co., New York.	Mapes' Conn. Valley Branch, Hartford.	Station Agent.
1303	" " " " for use with stems.	" " " "	" " " "	" " " "
1318	Matchless Tobacco Manure.	Read & Co., New York, N. Y.	A. C. Sternberg, Hartford, Conn.	A. C. Sternberg.
1283	Bosworth's Potato Phosphate.	Bosworth Bros., Putnam.	John A. Paine, Danielsonville.	Station Agent.

SUPERPHOSPHATES AND GUANOS.—ANALYSES AND VALUATIONS.

Station No.	Name or Brand.	Nitrogen.				Phosphoric Acid.						Potash.		Cost per Ton.	Valuation per Ton.	
		From Nitrates.	From Ammonia.	From Organic Matter.	Total Nitrogen Found.	Soluble in Water.	Reverted.	Insoluble.	Total Phosphoric Acid.	Available.		Found.	Guaranteed.			
										Found.	Guaranteed.					
1301	Bowker's Dissolved Bone	---	---	1.51	1.51	1.65	7.70	1.16	.99	9.85	8.0	8.86	5.0	1.77	---	\$25.92
1320	Bradley's Sea Fowl Guano	.28	---	2.70	2.98	2.50	7.70	1.43	2.51	11.64	11.0	9.13	9.0	3.14	2.0	34.71
1291	Davidge's Fish and Potash	---	---	3.07	3.07	2.88	1.99	3.30	1.78	9.07	7.0	5.29	4.0	4.81	4.0	27.89
1293	" Special Favorite.	---	---	2.22	2.22	1.24	4.22	3.16	2.61	9.99	11.0	7.38	8.0	1.81	1.5	40.00
1292	Common Sense Fertilizer, No. 2	.03	---	1.58	2.36	2.00	.44	6.86	1.12	8.42	4.0	7.30	---	3.78	3.0	27.76
1313	Buffalo Superphosphate, No. 2	---	---	2.37	2.37	2.50	6.97	3.97	2.03	12.37	13.0	10.94	11.0	1.02	2.5	23.79
1305	Soluble Pacific Guano.	---	---	2.76	2.76	---	6.48	1.50	4.17	12.15	10.0	7.98	8.0	3.16	2.0	31.58
1310	Harris' Superphosphate	---	---	2.47	2.47	2.35	9.40	2.07	.31	11.78	12.0	8.14	---	---	---	30.38
1311	Lister's Standard Phosphate	---	---	2.66	2.66	---	3.32	5.50	3.61	12.43	---	11.47	10.0	2.53	1.5	36.89
1288	Lombard & Mathewson's Superphos.	---	---	---	---	---	4.14	1.88	7.42	13.44	11.4	6.02	---	---	---	30.43
1314	Cooke's Dissolved Bone.	---	---	1.99	2.55	1.75	3.92	3.84	2.47	10.23	10.0	7.76	8.0	2.59	2.0	21.94
1317	Quinnipiac Extra Superphosphate.	.65	---	42	1.95	1.85	4.77	4.23	2.58	11.58	8.0	9.00	---	1.62	2.0	29.59
1282	Farmer's Friend Dissolved Bone	.42	---	2.94	---	2.47	8.78	2.88	1.86	13.52	14.0	11.66	9.0	3.99	4.0	28.74
1319	Swift-Sure Superphosphate	---	---	1.94	3.00	2.50	10.55	1.78	.40	12.73	---	12.33	9.0	4.32	4.0	41.07
1316	Sparrow's Bone & Potash Phosphate.	.45	---	1.97	2.42	2.47	1.51	2.39	1.65	5.55	6.0	3.90	3.0	4.62	4.0	40.75
1289	Stearns' Eagle Brand Fish & Potash.	---	---	6.01	6.06	3.29	1.47	4.47	.26	6.20	2.3	5.94	---	---	---	22.60
1287	Wilcox's Acidulated Fish Guano	---	---	8.54	8.54	7.40	1.85	4.70	.53	---	---	---	---	---	---	35.54
1285	" Ground Fish Guano.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	46.80
SPECIAL FERTILIZERS.																
1300	Baker's Complete Grass Manure	.94	---	3.12	5.8	3.70	4.72	.68	1.04	6.44	5.0	5.40	---	7.95	7.5	37.77
1302	" Special Oat Manure	---	---	3.61	4.42	4.12	4.86	.38	.14	5.38	---	5.24	5.0	10.13	9.0	43.12
1286	Bowker's Forage Crop Manure	1.12	---	1.66	3.81	4.12	6.14	.87	1.74	8.75	7.0	7.01	6.0	3.60	4.0	33.68
1307	Chittenden's Comp. Fertil. for Grain	---	---	3.51	3.51	3.70	5.08	2.55	1.30	8.93	8.0	7.63	6.0	6.49	5.0	35.48
1304	Mapes' Tobacco Man., Conn. Brand.	84	---	3.97	4.5	2.6	5.42	2.23	2.44	10.09	7.75	7.65	---	7.44	7.7	50.13
1303	" " for use with Stems	81	---	3.34	1.94	6.09	7.85	3.39	2.43	13.67	10.50	11.24	---	3.70	2.5	54.61
1318	Read's Matchless Tobacco Manure	---	---	4.85	---	5.35	5.74	.92	1.20	7.86	9.00	6.66	---	4.59	4.5	41.40
1283	Bosworth's Potato Phosphate	---	---	2.17	.60	2.77	5.87	3.33	2.24	11.44	10.00	9.20	---	7.89	7.5	39.98

* Reckoned from cost per 100 lbs.

S. W. JOHNSON, Director.