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Commercial fertilizers

J. H. Stewart

B. H. Hite

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WEST VIRGINIA UNIVERSITY
AGRICULTURAL EXPERIMENT STATION,
MORGANTOWN, W. VA.

BULLETIN 76.

MAY 2nd, 1901.

Commercial Fertilizers.

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BY J. H. STEWART AND B. H. HITE.

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[The Bulletins and Reports of this Station will be mailed free to any citizen of West Virginia upon written application. Address Director of Agricultural Experiment Station, Morgantown, W. Va.]

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Commercial Fertilizers---1901.

The last Legislature passed an Act amending and re-enacting the old law of this State in relation to commercial fertilizers. The new law takes effect May 2d, 1901. For the information of farmers, dealers and manufacturers, and for the purpose of removing any doubt that may remain in regard to this matter, it may be stated that all brands of fertilizers registered for sale during this year, up to and including the 2nd day of May, 1901, will be carried through the year under the provisions of the old law. Brands of fertilizers which manufacturers desire to register for sale in the State after May 2nd will be governed by the provisions of the new law. The amendments to the old law were made at the request of this Department in order to meet the changing conditions in the fertilizer business, and a very general demand among the farmers of the State and those interested in the purchase of fertilizers for information on the subject that was required by that statute. It is believed that this law will serve very largely to promote the interests of all such, and that at the same time it is altogether fair to manufacturers and dealers in this commodity.

The new law embraces a number of marked improvements over the old one, and among them may be mentioned the following:

No official sample is required of the manufacturer. In the bulletins of this Station that have been issued from time to time, we have frequently had occasion to draw attention to the fact that the manufacturers' official sample can never be any more than the duplication of his affidavit, both of which are submitted under oath. If the affidavit is right the official sample ought to be right, and vice versa. So the old Act simply required this Department to devote a large amount of time and money in analyzing these official samples, the results of which analyses, when obtained, could serve no better purpose than to show whether the sample and affidavit agreed, and in as much as it is just about as easy

to doctor a sample as it is to make an unfair affidavit, it will be apparent at once that such results amounted to almost nothing, although involving the expenditure of a large amount of time and money that might have been devoted to the analysis of samples found on sale in the State, which, after all, are the only materials in which any one is very much interested, and but for the fact that much effort was given to sampling and analyzing fertilizers found on sale in the State, our work would have been largely without avail.

The new law confines itself to the affidavit submitted by the manufacturer, who may claim what he pleases so long as he sells what he claims, and the money which was heretofore devoted to the analysis of official samples will be used in analyzing samples of goods actually found on sale in the State or submitted by farmers or purchasers of fertilizers. But while the manufacturer is permitted to make such claims as he pleases in regard to his goods on the conditions named, he is also required to furnish a great deal of other information that was not required by the old law, but which as a matter of fact was of just as much importance, and in many cases of even greater importance. He is required to state not only the amount or per cent. of nitrogen, potash, phosphoric acid, etc., *but also the materials from which these constituents are derived*, and form in which they exist in fertilizers. Under the old law he simply stated the amount of nitrogen, for example, and the farmer who purchased the fertilizer had no way of ascertaining whether this quantity of nitrogen existed as nitrate of soda, which would be immediately available to crops, or as hoof parings, leather waste, tannery tankage, etc., which would lie in the soil almost indefinitely, becoming available so slowly that no one would ever know just what crop, if any, was ever benefitted by it. We might enlarge upon the importance or value of such additional information, but this must be apparent at once to any one who has given the matter any consideration. It is the manufacturer's affidavit that will hereafter be printed on the tags, and this will, of course, contain the information referred to, and it is for this reason that the tag required by the statute to be affixed to every parcel or package of fertilizer

that is offered for sale in this State is a matter of so much importance, and it is for this reason that this Department proposes to enforce this provision of the statute to the letter. It is clearly the intention of this act that purchasers of commercial fertilizers shall, at the time of the purchase, be provided with this information in regard to the composition of fertilizers, and to neglect to affix the tags as required by the statute is simply to deprive the purchaser of this privilege, and this Department takes this occasion to serve notice to all dealers or sellers of commercial fertilizers that any neglect to have affixed conspicuously to every parcel or package of commercial fertilizer offered or exposed for sale in this State, the tag containing this information as required by the statute, will be promptly reported to the prosecuting attorney of the county in which the offense was committed.

Under the provisions of the old act the revenue necessary to conduct the inspection work, to make the analyses of the official samples and of samples submitted by farmers and purchasers of commercial fertilizers in the State, was derived from the analysis fee required to be paid at the time the brand was registered. Under the new law, no official sample being required, no analysis is necessary, and only a nominal registration fee of one dollar per brand is required, the necessary revenue for carrying the law into effect being derived from the sale of tags, thus placing the matter on a strictly tonnage basis, which alone can be fair to all parties concerned. We are confident this change will provide many advantages for purchasers of commercial fertilizers. It removes any obstacles in the way of the introduction of any brand of commercial fertilizer in this State. Under the old law the analysis fee for the official sample might amount to thirty dollars, and manufacturers endeavored to introduce the smallest number of brands that would meet the requirements of their trade in the State, and this analysis fee was a barrier to any new firm trying to get a foothold in the State. In a word, it tended to interfere with competition and to give to those manufacturers who already had a market in any particular locality a monopoly of the fertilizer business in that section, thus enabling them to charge what they pleased for their goods. Under the new law there is no barrier in the way of competition.

Any manufacturer may now register any brand he pleases for the nominal sum of one dollar, and we are confident that the differences in the prices at which commercial fertilizers will be sold in this State, as a result of the competition that will be promoted and stimulated by the provisions of the new law, will be far greater than the expenses incurred in the inspection and analysis of fertilizers, as required by the law.

Again, there have been the greatest variety of brands of fertilizers compounded with the greatest care for particular purposes, but under the old law, with its analysis fee, these never found their way into this State, and the purchasers of commercial fertilizers were deprived of any advantages to be obtained from the use of such fertilizers. There is no longer anything in the way of the introduction of any brand of commercial fertilizer into this State, and the farmer will doubtless have not only the advantage of the competition just referred to, but also the advantage of a much larger variety of brands from which to select.

TABLE I.
Analysis of Commercial Fertilizers—1900.

NAME AND ADDRESS OF MANUFACTURER.	NAME OF BRAND.	Soluble Phosphoric Acid in Official Sample.	Soluble Phosphoric Acid Guaranteed.	Reverted Phosphoric Acid in Official Sample.	Reverted Phosphoric Acid Guaranteed.	Insoluble Phosphoric Acid in Official Sample.	Insoluble Phosphoric Acid Guaranteed.	Total Phosphoric Acid in Official Sample.	Total Phosphoric Acid Guaranteed.	Available Phosphoric Acid in Official Sample.	Available Phosphoric Acid Guaranteed.	Nitrogen in Official Sample.	Nitrogen Guaranteed.	Potash in Official Sample.	Potash Guaranteed.	Valuation of Official Sample.	Valuation According to Guaranteed Analysis.
The American Agricultural Chemical Co., New York and Baltimore	Fine Ground Bone.....	.....	.....	.....	.....	.....	.....	26.03	22.00	.....	.....	2.98	2.47	.....	.....	27.25	24.50
The American Agricultural Chemical Co., New York and Baltimore	Bone Meal.....	.....	.....	.....	.....	.....	.....	15.58	9.00	.....	.....	2.25	1.65	.....	.....	18.75	13.25
The American Agricultural Chemical Co., New York and Baltimore	Bradley Fert. Works' Dissolved Bone Phosphate with Potash	6.45	6.00	3.36	2.00	1.15	.....	10.96	9.00	9.81	8.00	1.22	1.03	2.79	2.00	20.50	16.75
The American Agricultural Chemical Co., New York and Baltimore	Bradley Fert. Works' Bean & Potato	6.14	6.00	2.24	2.00	2.80	.....	11.18	9.00	8.38	8.00	1.08	0.82	6.11	4.00	23.00	18.50
The American Agricultural Chemical Co., New York and Baltimore	Bradley Fert. Works' Niagara.	4.55	5.00	2.77	2.00	1.56	...	8.88	8.00	7.32	7.00	0.84	0.82	1.48	1.00	15.25	13.75
The American Agricultural Chemical Co., New York and Baltimore	Bradley Fert. Works' Alkaline Bone	7.28	8.00	3.82	2.00	0.86	.....	11.96	11.00	11.10	10.00	.....	.....	2.70	2.00	17.00	15.00
The American Agricultural Chemical Co., New York and Baltimore	Bradley Fert. Works' Soluble Dissolved Bone	12.15	12.00	2.49	2.00	0.87	.....	15.51	.....	14.64	14.00	.....	.....	.....	.....	17.25	16.50
The American Agricultural Chemical Co., New York and Baltimore	Canton Chemical Baker's Spl. Wheat, Corn and Grass Mix.	4.45	7.00	3.70	2.00	1.38	.....	9.53	10.00	8.15	9.00	0.97	0.82	5.57	2.00	21.25	17.00
The American Agricultural Chemical Co., New York and Baltimore	Canton Chemical Harrow Br'd Crop Grower	2.78	6.00	5.03	2.00	1.93	.....	9.74	9.00	7.81	8.00	0.84	0.82	4.58	1.00	19.50	14.75
The American Agricultural Chemical Co., New York and Baltimore	Canton Chemical Soluble Bone and Potash	6.37	8.00	3.60	2.00	0.70	.....	11.67	11.00	9.97	10.00	.....	.....	5.05	2.00	18.75	15.00
The American Agricultural Chemical Co., New York and Baltimore	Canton Chemical Baker's Dis. S. C. Bone	13.88	12.00	2.82	2.00	0.90	.....	17.10	15.00	16.20	14.00	.....	.....	.....	.....	18.75	16.50

WEST VIRGINIA EXPERIMENT STATION.

TABLE I—Continued.

NAME AND ADDRESS OF MANUFACTURER.	NAME OF BRAND.	Soluble Phosphoric Acid in Official Sample.	Soluble Phosphoric Acid Guaranteed.	Reverted Phosphoric Acid in Official Sample.	Reverted Phosphoric Acid Guaranteed.	Insoluble Phosphoric Acid in Official Sample.	Insoluble Phosphoric Acid Guaranteed.	Total Phosphoric Acid in Official Sample.	Total Phosphoric Acid Guaranteed.	Available Phosphoric Acid in Official Sample.	Available Phosphoric Acid Guaranteed.	Nitrogen in Official Sample.	Nitrogen Guaranteed.	Potash in Official Sample.	Potash Guaranteed.	Valuation of Official Sample.	Valuation According to Guaranteed Analysis.
The American Agricultural Chemical Co., New York and Baltimore	Cleveland Dryer Forest City Buckeye	5.23	7.00	1.51	2.00	0.91	....	10.63	10.00	9.72	9.00	2.26	2.47	4.03	2.00	25.50	23.00
The American Agricultural Chemical Co., New York and Baltimore	Cleveland Dryer Phospho Bone	7.80	8.00	3.33	2.00	1.29	....	12.42	11.00	11.13	10.00	1.08	0.82	2.13	1.00	20.50	16.75
The American Agricultural Chemical Co., New York and Baltimore	Cleveland Dryer Horsehead	7.24	8.00	1.26	2.00	0.83	....	12.33	11.00	11.50	10.00	....	....	3.01	2.00	17.75	15.00
The American Agricultural Chemical Co., New York and Baltimore	Cleveland Dryer XXX Phosphate	12.23	12.00	2.38	2.00	0.90	....	15.51	15.00	14.61	14.00	....	....	....	....	17.25	16.50
The American Agricultural Chemical Co., New York and Baltimore	Cleveland Dryer Horsehead phosphate	6.69	8.00	5.06	2.00	0.83	....	12.88	11.00	11.75	10.00	....	....	....	....	14.50	12.50
The American Agricultural Chemical Co., New York and Baltimore	Detrick's Kangaroo Complete Compound	5.81	6.00	2.76	2.00	2.20	....	10.77	9.00	8.57	8.00	1.66	1.65	3.96	3.00	21.50	20.25
The American Agricultural Chemical Co., New York and Baltimore	Detrick's Imperial Compound	6.98	4.00	2.85	2.00	2.69	....	12.92	7.00	9.83	6.00	0.89	0.82	3.20	5.00	20.00	17.75
The American Agricultural Chemical Co., New York and Baltimore	Detrick's Paragon Amm't'd Bone Phos. and Potash	3.59	5.00	3.83	2.00	1.59	....	9.01	8.00	7.12	7.00	0.84	0.82	2.22	1.00	16.25	13.75
The American Agricultural Chemical Co., New York and Baltimore	Detrick's Soluble Bone Phosphate and Potash.	7.61	8.00	2.72	2.00	1.52	....	11.83	11.00	10.33	10.00	....	....	2.69	2.00	16.50	15.00
The American Agricultural Chemical Co., New York and Baltimore	Detrick's Dissolved S. C. Bone.	12.50	12.00	2.39	2.00	0.92	....	15.81	15.00	14.80	14.00	....	....	....	....	17.50	16.50
The American Agricultural Chemical Co., New York and Baltimore	Great Eastern Corn Fertilizer.	5.23	6.00	3.68	2.00	1.16	....	10.07	....	8.91	8.00	0.99	0.82	1.74	4.00	21.00	18.50
The American Agricultural Chemical Co., New York and Baltimore	Great Eastern Vegetable, Vine and Tobacco	5.73	6.00	3.00	2.00	1.07	....	9.80	....	8.73	8.00	1.97	2.05	3.04	3.00	22.25	21.50

TABLE I—Continued,

NAME AND ADDRESS OF MANUFACTURER.	NAME OF BRAND.	Soluble Phosphoric Acid in Official Sample.	Soluble Phosphoric Acid Guaranteed.	Reverted Phosphoric Acid in Official Sample.	Reverted Phosphoric Acid Guaranteed.	Insoluble Phosphoric Acid in Official Sample.	Insoluble Phosphoric Acid Guaranteed.	Total Phosphoric Acid in Official Sample.	Total Phosphoric Acid Guaranteed.	Available Phosphoric Acid in Official Sample.	Available Phosphoric Acid Guaranteed.	Nitrogen in Official Sample.	Nitrogen Guaranteed.	Potash in Official Sample.	Potash Guaranteed.	Valuation of Official Sample.	Valuation According to Guaranteed Analysis.
The American Agricultural Chemical Co., New York and Baltimore	Great Eastern Wheat Special.	4.91	6.00	3.87	2.00	1.96	.....	10.81	.....	8.88	8.00	1.69	1.61	2.00	2.00	20.50	19.00
The American Agricultural Chemical Co., New York and Baltimore	Great Eastern English Wheat Grower	6.37	6.00	1.78	2.00	0.75	.....	8.90	.....	8.15	8.00	0.95	0.82	2.50	2.00	17.50	16.00
The American Agricultural Chemical Co., New York and Baltimore	Great Eastern Soluble Bone and Potash	8.47	8.00	3.58	2.00	0.93	.....	12.98	.....	12.03	10.00	.....	.....	2.08	2.00	17.25	15.00
The American Agricultural Chemical Co., New York and Baltimore	Great Eastern Dissolved Bone.	13.61	12.00	1.25	2.00	1.54	.....	.....	16.40	.....	14.00	1486	.....	.....	.....	17.50	16.50
The American Agricultural Chemical Co., New York and Baltimore	Lazaretto Ammoniated Bone Phosphate	4.40	6.00	3.73	2.00	0.83	.....	8.96	9.00	8.13	8.00	0.95	0.82	3.18	2.00	18.25	16.00
This American Agricultural Chemical Co., New York and Baltimore	Lazaretto Excelstior A.A.A....	4.70	5.00	3.89	2.00	1.62	.....	10.21	8.00	8.59	7.00	1.06	0.82	1.97	1.00	17.75	13.75
The American Agricultural Chemical Co., New York and Baltimore	Lazaretto Dissolved Bone Phos. and Potash	7.15	8.00	4.48	2.00	0.82	.....	12.45	11.00	11.63	10.00	.....	.....	3.17	2.00	18.00	15.00
The American Agricultural Chemical Co., New York and Baltimore	Lazaretto Dissolved Bone Phosphate.	12.05	12.00	2.59	2.00	0.90	.....	15.54	15.00	14.64	14.00	.....	.....	.....	.....	17.25	16.50
The American Agricultural Chemical Co., New York and Baltimore	Maryland O. K. Ammoniated Fertilizer	8.29	6.00	3.02	2.00	1.18	.....	12.49	9.00	11.31	8.00	0.71	0.82	2.53	2.00	19.75	16.00
The American Agricultural Chemical Co., New York and Baltimore	Maryland Tornado Fertilizer.	6.96	10.00	4.57	2.00	0.84	.....	12.37	13.00	11.53	12.00	.....	.....	.85	5.00	22.50	20.50
The American Agricultural Chemical Co., New York and Baltimore	Maryland Bono Superphosphate	6.39	8.00	5.09	2.00	3.01	.....	14.46	11.00	11.45	10.00	.....	.....	2.52	2.00	17.75	15.00
The American Agricultural Chemical Co., New York and Baltimore	Maryland Dissolved S. C. Bone	13.30	12.00	2.62	2.00	0.52	.....	16.44	15.00	15.92	14.00	.....	.....	.....	.....	18.50	16.50

TABLE I—Continued.

NAME AND ADDRESS OF MANUFACTURER.	NAME AND BRAND.	ANALYSIS														Valuation According to Guaranteed.	
		Soluble Phosphoric Acid in Official Sample.	Soluble Phosphoric Acid Guaranteed.	Reverted Phosphoric Acid in Official Sample.	Reverted Phosphoric Acid Guaranteed.	Insoluble Phosphoric Acid in Official Sample.	Insoluble Phosphoric Acid Guaranteed.	Total Phosphoric Acid in Official Sample.	Total Phosphoric Acid Guaranteed.	Available Phosphoric Acid in Official Sample.	Available Phosphoric Acid Guaranteed.	Nitrogen in Official Sample.	Nitrogen Guaranteed.	Potash in Official Sample.	Potash Guaranteed.		
The American Agricultural Chemical Co., New York and Baltimore	Pacific Potato Phosphate	5.63	4.00	1.76	2.00	1.13	....	8.52	7.00	7.29	6.00	1.50	1.21	7.19	5.00	24.50	19.25
The American Agricultural Chemical Co., New York and Baltimore	Pacific Nobisque Guano.....	6.23	6.00	3.18	2.00	1.24	....	10.95	9.00	9.71	8.00	1.24	1.03	3.24	2.00	21.00	16.75
The American Agricultural Chemical Co., New York and Baltimore	Pacific A No. 1 Phosphate.....	4.93	5.00	3.63	2.00	1.61	....	10.17	8.00	8.56	7.00	1.68	0.82	2.00	1.00	18.00	13.75
The American Agricultural Chemical Co., New York and Baltimore	Pacific Dissolved Bone and Potash	7.51	8.00	4.00	2.00	0.8	....	12.42	11.00	11.51	10.00	....	....	3.03	2.00	18.00	13.00
The American Agricultural Chemical Co., New York and Baltimore	Pacific Dissolved Bone Phosphate.	12.10	12.00	2.55	2.00	0.84	....	15.49	15.00	14.65	14.00	....	....	....	....	17.25	16.50
The American Agricultural Chemical Co., New York and Baltimore	John S. Reese & Co.'s Half-and-Half	4.43	5.00	3.62	2.00	1.5	....	10.4	8.00	8.55	7.00	1.01	0.82	2.02	1.00	16.50	13.75
The American Agricultural Chemical Co., New York and Baltimore	John S. Reese & Co.'s Elmh Phosphate	12.24	12.00	2.58	2.00	0.83	..	15.65	15.00	11.82	14.00	....	....	....	....	17.50	16.50
The American Agricultural Chemical Co., New York and Baltimore	Susquehanna Alkaline Bone Phosphate	8.17	8.00	2.73	2.00	1.05	....	11.95	11.00	10.90	10.00	....	....	2.04	2.00	16.25	15.00
The American Agricultural Chemical Co., New York and Baltimore	Susquehanna XXV Phosphate	6.58	6.00	2.67	2.00	2.97	....	12.22	9.00	9.25	8.00	1.2	0.82	2.13	1.00	18.25	14.75
The American Agricultural Chemical Co., New York and Baltimore	Susquehanna Superior Rock Phosphate	15.16	2.00	1.65	2.00	0.28	....	17.09	15.00	16.81	14.00	....	....	....	....	19.25	16.50
The American Agricultural Chemical Co., New York and Baltimore	Williams & Clark's Good Grower.	5.28	4.00	2.00	2.00	1.15	....	8.43	7.00	7.28	6.00	1.39	1.21	7.34	5.00	21.00	19.25
The American Agricultural Chemical Co., New York and Baltimore	Williams & Clark's Royal Bone Phosphate	6.40	6.00	3.27	2.00	1.21	....	10.91	9.00	9.67	8.00	1.22	1.03	3.66	2.00	21.50	16.75

TABLE I—Continued.

NAME AND ADDRESS OF MANUFACTURER.	NAME OF BRAND.														Valuation According to Guaranteed Analysis.		
	Soluble Phosphoric Acid in Official Sample.	Soluble Phosphoric Acid Guaranteed.	Reverted Phosphoric Acid in Official Sample.	Reverted Phosphoric Acid Guaranteed.	Insoluble Phosphoric Acid in Official Sample.	Insoluble Phosphoric Acid Guaranteed.	Total Phosphoric Acid in Official Sample.	Total Phosphoric Acid Guaranteed.	Available Phosphoric Acid in Official Sample.	Available Phosphoric Acid Guaranteed.	Nitrogen in Official Sample.	Nitrogen Guaranteed.	Potash in Official Sample.	Potash Guaranteed.		Valuation of Official Sample.	
Hess, S. M., & Bro., Philadelphia...	9.12	8.00	3.07	2.00	1.01	....	13.20	11.00	12.19	10.00	....	....	2.25	1.00	18.25	13.75	
Hess, S. M., & Bro., Philadelphia...	14.53	12.00	2.10	2.00	0.91	....	17.44	15.00	16.33	14.00	....	....	....	....	19.00	16.50	
Jarecki Chemical Co., Sandusky, O.	8.16	....	2.33	....	3.30	....	13.79	11.00	10.49	10.00	0.95	0.86	1.31	1.00	18.75	17.00	
Jarecki Chemical Co., Sandusky, O.	11.33	....	2.20	....	3.01	....	16.57	15.00	13.53	14.00	....	....	....	....	16.75	16.50	
Jarecki Chemical Co., Sandusky, O.	....	....	....	....	....	....	25.35	20.00	....	....	2.61	2.50	....	....	25.75	22.25	
Jarecki Chemical Co., Sandusky, O.	3.78	....	2.32	....	1.68	....	7.78	7.00	6.10	6.00	0.50	0.40	0.89	0.50	12.25	10.75	
Lazaretto Guano Works, Baltimore.	11.28	....	2.90	....	0.82	1.00	15.00	....	14.18	14.00	....	....	....	....	16.75	16.75	
Northwestern Fert. Co., Chicago....	5.71	6.00	1.89	2.00	2.30	....	9.90	10.00	7.60	8.00	1.82	1.65	2.30	2.00	20.25	19.00	
Horseshoe Brand Farmers' Standard Ammo'ted Phosphate	8.65	7.00	1.94	2.00	0.96	....	11.55	11.00	10.59	9.00	1.86	1.75	2.55	2.00	24.00	20.25	
Farmers' Mixture.....		9.22	7.00	0.86	2.00	1.00		11.08	11.00	10.08	9.00	1.19	0.75	2.93	2.00	20.75	16.75
Diss. Bone Phos. and Potash....		9.91	9.00	1.71	2.00	0.26		11.88	13.00	11.62	11.00			4.34	2.00	19.50	17.00
Dissolved Bone Phosphate.....		13.93	11.00	1.85	3.00	0.28		16.06	16.00	15.78	14.00					18.25	17.00
Ohio Farmers' Fer. Co., Columbus,O	....	9.24	6.00	2.79	3.00	1.54	....	13.57	10.00	12.03	9.00	....	....	....	15.00	11.50	
Soluble Bone and Potash.....		7.53	6.00	2.26	2.00	1.36		11.15	10.00	9.79	8.00			8.24	2.00	22.50	13.00
Ohio Farmers' Fer. Co., Columbus,O		5.99	6.00	2.34	2.00	1.01		9.34	10.00	8.33	8.00	0.90	0.82	3.91	1.00	19.50	14.75
General Crop Fish Guano.....																	
Ohio Farmers' Fer. Co., Columbus,O		6.09	6.00	2.06	2.00	1.67		9.82	10.00	8.15	8.00	2.63	1.24	4.05	2.00	25.75	17.50
Corn,Oats&Wheat Fish Guano...																	

TABLE I--Continued.

NAME AND ADDRESS OF MANUFACTURER.	NAME OF BRAND.	ANALYSIS										Valuation of Official Sample.	Valuation According to Guaranteed analysis.				
		Soluble Phosphoric Acid in Phosphoric Acid.	Soluble Phosphoric Acid Guaranteed.	Reverted Phosphoric Acid in Official Sample.	Reverted Phosphoric Acid Guaranteed.	Insoluble Phosphoric Acid in Official Sample.	Insoluble Phosphoric Acid Guaranteed.	Total Phosphoric Acid in Official Sample.	Total Phosphoric Acid Guaranteed.	Available Phosphoric Acid in Official Sample.	Available Phosphoric Acid Guaranteed.	Nitrogen in Official Sample.	Nitrogen Guaranteed.				
Piedmont-Mt. Airy Guano Co., Balto	Farmers' H. Gr. Bone and Pot.	7.10	.....	2.82	.....	1.82	.....	11.74	.....	9.92	10.00	.....	2.46	2.00	16.00	15.00	
Piedmont-Mt. Airy Guano Co., Balto	Dis. Bone Phos. Potash Goods.	7.58	.....	3.42	.....	2.23	.....	13.23	.....	11.00	10.50	.....	1.75	1.00	16.25	14.25	
Piedmont-Mt. Airy Guano Co., Balto	Royal Am. Bone and Potash..	5.20	.....	2.28	.....	1.60	.....	9.08	.....	7.48	6.00	1.57	1.30	3.65	3.00	20.50	17.00
Piedmont-Mt. Airy Guano Co., Balto	Pure Raw Bone Mixture	4.97	.....	4.59	.....	6.02	.....	15.58	.....	9.56	8.00	1.25	1.25	1.86	1.50	20.25	17.00
Piedmont-Mt. Airy Guano Co., Balto	High Grade S. C. Bone.....	12.81	.....	1.74	.....	2.70	.....	17.25	.....	14.55	14.00	.....	.....	.....	.....	17.50	16.50
Rasin-Monumental Co., Baltimore.	Wm. Penn Crop Grower.....	5.37	7.00	2.20	1.00	1.22	.....	8.79	9.00	7.57	8.00	1.33	0.82	2.47	1.00	18.25	14.75
Rasin-Monumental Co., Baltimore.	Rasin's Empire Guano.....	6.42	7.00	2.06	1.00	0.87	.....	9.35	9.00	8.48	8.00	1.76	1.64	3.15	1.00	20.26	17.75
Rasin-Monumental Co., Baltimore.	Rasin's Bone & Potash Fert...	11.00	8.70	2.44	1.50	0.38	.....	13.82	11.00	13.44	10.00	.....	.....	3.23	2.00	20.25	15.00
Rasin-Monumental Co., Baltimore.	Rasin's Acid Phosphate	15.11	12.00	0.63	2.00	0.56	.....	16.30	15.00	15.74	14.00	.....	.....	.....	.....	18.25	16.50
Richmond Guano Co., Richmond..	Bone Mixture.....	6.18	6.00	2.57	2.00	1.10	.....	10.17	.....	9.65	8.00	1.24	0.82	1.44	1.00	18.25	14.75
Richmond Guano Co., Richmond..	Premium Wheat Grower.....	6.58	6.00	2.69	2.00	0.93	.....	10.20	.....	9.27	8.00	1.26	0.82	2.39	2.00	19.50	16.00
Richmond Guano Co., Richmond...	High Grade Acid Phosphate..	12.23	10.00	3.53	4.00	1.63	.....	17.39	.....	15.76	14.00	.....	.....	.....	.....	14.50	16.50
Swift & Co., Chicago.....	Special Tobacco Fertilizer	7.98	.....	2.09	.....	0.66	.....	10.73	13.00	10.07	10.00	2.69	2.47	3.35	3.00	26.00	25.00
Swift & Co., Chicago.....	Ammonia Bone and Potash.....	6.41	.....	3.50	.....	4.77	.....	15.08	12.00	10.31	8.00	2.47	1.64	2.34	2.00	25.75	19.00
Swift & Co., Chicago.....	Superphosphate	5.71	.....	3.22	.....	1.76	.....	10.52	12.00	8.96	8.00	2.09	1.75	2.96	2.00	23.00	14.50
Swift & Co., Chicago.....	Complete Fertilizer.....	5.95	.....	2.67	.....	2.38	.....	11.00	11.00	8.62	8.00	1.26	1.00	2.10	1.00	18.75	15.50
Swift & Co., Chicago.....	Potato and Tobacco Grower ..	7.06	.....	3.68	.....	0.90	.....	11.64	11.00	10.74	10.00	3.52	3.25	7.24	5.00	35.00	30.25

TABLE I--Continued.

NAME AND ADDRESS OF MANUFACTURER.	NAME OF BRAND.	Soluble Phosphoric Acid in Official Sample.	Soluble Phosphoric Acid Guaranteed.	Reverted Phosphoric Acid in Official Sample.	Reverted Phosphoric Acid Guaranteed.	Insoluble Phosphoric Acid in Official Sample.	Insoluble Phosphoric Acid Guaranteed.	Total Phosphoric Acid in Official Sample.	Total Phosphoric Acid Guaranteed.	Available Phosphoric Acid in Official Sample.	Available Phosphoric Acid Guaranteed.	Nitrogen in Official Sample.	Nitrogen Guaranteed.	Potash in Official Sample.	Potash Guaranteed.	Valuation of Official Sample.	Valuation According to Guaranteed Analysis.
Swift & Co., Chicago.	Ammoniated Bone and Potash	.....	.....	.....	.....	.....	.....	14.85	16.00	.....	.....	4.96	4.75	4.06	3.00	30.25	30.00
Swift & Co., Chicago.	Phosphate and Potash	7.57	6.36	.....	1.13	.....	.....	15.06	13.00	13.33	12.00	.....	.....	2.02	2.00	19.00	17.25
Swift & Co., Chicago.	Bone and Potash	.....	.....	.....	.....	.....	.....	25.01	23.50	.....	.....	2.51	2.50	3.85	3.00	30.00	29.00
Swift & Co., Chicago.	Raw Bone Meal	.....	.....	.....	.....	.....	.....	23.52	23.00	.....	.....	3.96	3.75	.....	.....	28.75	27.50
Swift & Co., Chicago.	Diamond <S> Phosphate.	6.50	2.53	0.56	.....	.....	.....	9.59	11.00	9.03	10.00	.....	.....	.....	.....	11.75	12.50
Swift & Co., Chicago.	Bone Meal	.....	.....	.....	.....	.....	.....	25.66	25.00	.....	.....	2.81	2.50	.....	.....	26.50	25.25
Swift & Co., Chicago.	Pure Acid Phosphate.	11.00	5.80	0.91	.....	.....	.....	17.71	17.00	16.80	16.00	.....	.....	.....	.....	19.25	18.50
Swift & Co., Chicago.	Vegetable Grower	4.97	4.28	0.77	.....	.....	.....	10.02	10.00	9.25	9.00	3.30	3.25	1278	1000	39.25	35.25
Virginia-Carolina Chem. Co., Richmond, Va.	Allison & Addison's Star Br'd Guano	6.52	2.23	3.25	.....	.....	.....	12.00	.....	8.75	8.00	1.85	1.61	1.67	1.00	20.75	17.75
Virginia-Carolina Chem. Co., Richmond, Va.	Allison & Addison's Little G't Grain and Grass Grower	6.36	2.87	1.82	.....	.....	.....	11.03	.....	9.21	8.00	0.98	0.82	3.00	2.00	19.25	16.00
Virginia-Carolina Chem. Co., Richmond, Va.	Allison & Addison's Standard Acid Phosphate	8.39	3.70	2.37	.....	.....	.....	14.46	.....	12.09	12.00	.....	.....	.....	.....	15.25	14.50
Virginia-Carolina Chem. Co., Richmond, Va.	S. W. Travers' Beef Blood and Bone Feat.	6.65	6.00	2.60	2.00	1.15	.....	10.40	9.00	9.25	8.00	2.03	1.64	1.99	1.00	21.75	17.75
Virginia-Carolina Chem. Co., Richmond, Va.	S. W. Travers' Champion Corn Grower	6.23	6.00	2.43	2.00	0.93	.....	9.59	9.00	8.66	8.00	0.95	0.82	1.77	1.00	17.00	14.75
Virginia-Carolina Chem. Co., Richmond, Va.	S. W. Travers' Capital Bone & Potash Compound	7.00	8.00	3.54	2.00	0.28	.....	10.82	11.00	10.54	10.00	.....	.....	2.23	2.00	16.00	15.00
Virginia-Carolina Chem. Co., Richmond, Va.	S. W. Travers' Capital Disso'd S. C. Bone	9.02	9.00	3.82	3.00	0.78	.....	13.62	13.00	12.84	12.00	.....	.....	.....	.....	15.50	14.50

TABLE I—Continued.

NAME AND ADDRESS OF MANUFACTURER.	NAME OF BRAND.	Soluble Phosphoric Acid in (Official Sample.	Soluble Phosphoric Acid (Guaranteed.	Reverted Phosphoric Acid In Official Sample.	Reverted Phosphoric Acid (Guaranteed.	Insoluble Phosphoric Acid In Official Sample.	Insoluble Phosphoric Acid (Guaranteed.	Total Phosphoric Acid in Official Sample.	Total Phosphoric Acid (Guaranteed.	Available Phosphoric Acid in Official Sample.	Available Phosphoric Acid (Guaranteed.	Nitrogen in Official Sample.	Nitrogen Guaranteed.	Potash in Official Sample.	Potash Guaranteed.	Valuation of Official Sample.	Valuation According to Guaranteed Analysis.
Virginia-Carolina Chem. Co., Richmond.	S. W. Travers' Dissolved Bone Phosphate	12.90	11.00	2.00	3.00	0.46	.....	15.45	15.00	14.99	14.00	.....	.....	.....	.....	17.50	16.50
Walker, Stratman & Co., Pittsburg.	Four Fold	5.66	3.75	3.27	4.25	2.69	.....	11.62	9.00	8.93	8.00	2.16	1.61	2.80	2.00	23.25	19.00
Walker, Stratman & Co., Pittsburg.	Grain King	7.48	4.25	3.41	4.75	1.40	.....	12.29	10.00	10.89	9.00	1.20	0.82	4.83	4.00	24.00	19.50
Walker, Stratman & Co., Pittsburg.	Big Bonanza	6.18	4.00	3.30	5.00	3.24	.....	13.02	10.00	9.78	9.00	2.17	1.61	5.04	4.00	27.00	22.25
Walker, Stratman & Co., Pittsburg.	Potato Special	5.08	3.75	3.47	4.25	4.45	.....	13.00	9.00	8.55	8.00	2.89	2.50	7.90	6.00	32.25	27.00
Walker, Stratman & Co., Pittsburg.	Meat, Blood, and Bone with Potash	5.17	3.75	2.45	4.25	2.90	.....	11.02	9.00	8.12	8.00	3.49	3.25	8.90	8.00	34.75	32.00
Walker, Stratman & Co., Pittsburg.	Pure Raw Bone Meal .....	.....	.....	.....	.....	.....	.....	23.92	22.00	.....	.....	3.67	3.25	.....	.....	28.00	25.50
Walker, Stratman & Co., Pittsburg.	Bone and Meal .....	.....	.....	.....	.....	.....	.....	19.49	16.00	.....	.....	4.31	3.25	.....	.....	27.00	22.00
Walker, Stratman & Co., Pittsburg.	Phosphoric Acid and Potash ..	8.04	5.50	3.75	4.50	0.36	.....	12.15	11.00	11.79	10.00	.....	.....	2.77	2.00	17.75	15.00
Walker, Stratman & Co., Pittsburg.	Help Mate	9.28	7.00	5.53	5.00	0.47	.....	15.58	13.00	15.11	12.00	.....	.....	.....	.....	17.50	14.50
Wheeling Butchers' Ass'n, Wheeling	Ohio Valley Bone Dust .....	.....	.....	.....	.....	.....	.....	15.29	17.00	.....	.....	3.00	3.12	.....	.....	20.75	22.25
Wooldridge, Rob't A., Co., Balto ...	Florida Acid Phosphate	9.74	.....	6.56	.....	0.88	.....	17.18	.....	16.30	14.00	.....	.....	.....	.....	18.75	16.50
Wooldridge, Rob't A., Co., Balto ...	German Potash Mixture	7.23	.....	4.09	.....	0.78	.....	12.10	.....	11.32	10.00	.....	.....	2.10	2.00	16.50	15.00
Wooldridge, Rob't A., Co., Balto....	Liberty Bell Potash Mixture..	8.79	.....	2.63	.....	0.65	.....	12.07	.....	11.42	12.00	.....	.....	4.28	3.00	19.25	18.00
Wooldridge, Rob't A., Co., Balto	Old Sledge Phosphate	4.90	.....	4.08	.....	1.77	.....	10.75	.....	8.98	8.00	1.11	0.82	1.61	1.00	18.00	14.75
Wooldridge, Rob't A., Co., Balto	Champion Giant Phosphate..	8.79	.....	0.63	.....	1.52	.....	10.34	.....	8.82	9.00	1.03	0.82	2.60	2.00	18.75	17.00