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Commercial fertilizers : report for 1903.

J. H. Stewart

B. H. Hite

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

BULLETIN 91.

NOVEMBER, 1903.

Commercial Fertilizers.

REPORT FOR 1903.

PART I.

From January 1st, to May 1st.

By J. H. STEWART and B. H. HITE.

[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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REPORT ON FERTILIZER INSPECTION.

The following pages are a report of the work of this office in the execution of the statute of the State of West Virginia, concerning Commercial Fertilizers for the first half of the calendar year, 1903. A supplementary report covering the work of the latter half of the year will be issued soon.

GOODS OF

AMERICAN AGRICULTURAL CHEMICAL COMPANY,
NEW YORK AND BALTIMORE.

4782. *REGULAR CORN FERTILIZER.* J. L. Woodyard, Pruntytown. *Guarantee:* Phosphoric acid soluble, 4; reverted, 2; insoluble, 1; total 7; available, 6; potash, 3; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found:* Phosphoric acid, soluble, 1.19; reverted, 5.72; insoluble, 0.93; total, 7.84; available, 6.91; potash, 3.40; *chlorme, 4.7.

*This represents the proportion of chlorine corresponding to one per cent of potash in the fertilizer. The actual percentage of chlorine may be found by multiplying the above by the actual percentage of potash present. Chlorine is a constituent of muriate of potash, of common salt and of certain compounds of lime and magnesia. When high grade sulphate is used as the source of potash the fertilizer should contain no more than traces of chlorine. The quantity of the latter increases directly with the inferiority of the source employed and its estimation serves approximately as an indication of such source.

Where kainit is guaranteed and the chlorine exceeds 4.5, it may be assumed that an inferior grade of this material has been used. (See page 52.)

4792. *REGULAR CORN FERTILIZER*. J. M. Miller & Bro., Ronceverte. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 0.86; reverted, 6.00; insoluble, 0.82; total, 7.68; available, 6.86; potash, 2.86; chlorine, 5.2.

4698. *REGULAR CORN FERTILIZER*. Washington and Alexander, Charles Town. *Guarantee*,—(As above.) *Found*: Phosphoric acid, soluble, 1.39; reverted, 5.78; insoluble, 0.77; total, 7.94; available, 7.17; potash, 3.40; chlorine, 4.4.

4718. *SUPERPHOSPHATES*. Griffith & Howell, Belington. *Guarantee*: Phosphoric acid, soluble, 14.00; reverted, 2; insoluble, 1; total, 17; available, 16.00; phosphoric acid from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 14.30; reverted, 3.47; insoluble, 0.29; total, 18.06; available, 17.77

4694. *GEM ALKALINE BONE*. R. Hunter, Berkeley Springs. *Guarantee*: Phosphoric acid, soluble, 4.00; reverted, 2.00; insoluble, 1.00; total, 7.00; available, 6.00; potash, 3.00; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found*: Phosphoric acid, soluble, 7.60; reverted, 5.27; insoluble, 0.79; total, 7.66; available, 6.87; potash, 3.23; chlorine 4.8.

4759. *GEM ALKALINE BONE*. T. B. Drummond & Co., Buckhannon. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 1.14; reverted, 5.70; insoluble, 0.70; total, 7.54; available, 6.84; potash, 3.13; chlorine, 3.5.

4730. *GEM ALKALINE BONE*. Deberry & Bishop, Terra Alta. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 1.43; reverted, 5.88; insoluble, 0.86; total, 8.17; available, 7.31; potash, 2.86; chlorine, 3.3.

4722. *GEM ALKALINE BONE*. Griffith & Howell, Belington. *Guarantee*—(As above.) *Found*: Phosphoric acid,

soluble, 1.98; reverted, 4.80; insoluble, 0.72; total, 7.50; available, 6.78; potash, 3.01; chlorine, 3.3.

4742. *PURE GROUND BONE*. J. H. Miller & Sons, Martinsburg. *Guarantee*: Total phosphoric acid, 20.00; nitrogen, 3.29; from animal bones. *Found*: Total phosphoric acid, 20.67; nitrogen, 3.89; *availability of nitrogen, 78.

4758. *BONE MEAL*. T. B. Drummond & Co., Buckhannon. *Guarantee*: Total phosphoric acid, 14.00; nitrogen, 1.65; from animal bones. *Found*: Phosphoric acid, total, 17.04; nitrogen, 1.56; availability of nitrogen, 87.

4661. *CANTON CHEMICAL BAKER'S DISSOLVED S. C. BONE*. J. M. Hagerty, Farmington. *Guarantee*: Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 1.00; total, 15.00; available, 14.00; from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 11.16; reverted, 4.34; insoluble, 1.37; total, 16.77; available, 15.40.

4700. *CANTON CHEMICAL BAKER'S DISSOLVED S. C. BONE*. Washington & Alexander, Charles Town. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 10.69; reverted, 4.74; insoluble, 1.15; total, 16.58; available, 15.42.

4774. *CANTON CHEMICAL BAKER'S DISSOLVED S. C. BONE*. C. W. Siever, Keyser. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 10.93; reverted, 2.98; insoluble, 1.25; total, 15.16; available, 13.91.

*The figure for the availability of nitrogen represents that proportion of the total nitrogen of the fertilizer which is immediately available to the plant as food. The test employed is a modification of Street's neutral permanganate method. While the results obtained can be considered as but an approximation to the true quantities as indicated by actual field tests, nevertheless they are valuable as serving to show the *relative* availability of the nitrogen in various brands of fertilizers. An availability of 85 or above is considered high 80-85 medium, below 75, low. The availability of nitrogen in bone meats is necessarily higher than in mixed goods unless nitrate is used in the latter.

4736. *CANTON CHEMICAL BAKER'S DISSOLVED S. C. BONE.* L. P. Licklider, Martinsburg. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 13.32; reverted, 2.21; insoluble, 0.82; total, 16.35; available, 15.53.

4763. *CANTON CHEMICAL BAKER'S DISSOLVED S. C. BONE.* Armstrong, Crislip & Co., Buckhannon. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 6.08; reverted, 10.07; insoluble, 0.90; total, 17.05; available, 16.15.

4663. *CANTON CHEMICAL SOLUBLE BONE AND POTASH.* J. M. Hagerty, Farmington. *Guarantee*: Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00 total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found*: Phosphoric acid, soluble, 7.71; reverted, 3.18; insoluble, 0.74; total, 11.63; available, 10.89; potash, 2.17; chlorine, 5.3.

4766. *CANTON CHEMICAL SOLUBLE BONE AND POTASH.* Armstrong, Chrislip & Co., Buckhannon. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 4.70; reverted, 5.81; insoluble, 0.72; total, 11.23; available, 10.51; potash, 2.12; chlorine, 5.1.

4786. *CANTON CHEMICAL SOLUBLE BONE AND POTASH.* C. W. Siever, Keyser, *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 5.95; reverted, 4.17; insoluble, 1.46; total, 11.58; available, 10.12; potash, 1.71; chlorine, 4.7.

4662. *CANTON CHEMICAL HARROW BRAND CROP GROWER.* J. M. Hagerty, Farmington. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash

from kainit. *Found*: Phosphoric acid, soluble, 7.07; reverted, 1.98; insoluble, 1.04; total, 10.09; available, 9.05; nitrogen, 0.95; potash, 1.24; chlorine, 8.1; availability of nitrogen, 80.

4737. *CANTON CHEMICAL HARROW BRAND CROP GROWER*. L. P. Licklider, Martinsburg. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 4.36; reverted 3.37; insoluble, 0.64; total, 8.37; available, 7.73; nitrogen, 0.93; potash, 1.17; chlorine, 6.6; availability of nitrogen, 80.

4664. *CANTON CHEMICAL POTATO MANURE*. J. M. Hagerty, Farmington. *Guarantee*: Phosphoric acid, soluble, 4.00; reverted, 2.00. insoluble, 1.00; total, 7.00; available, 6.00; nitrogen, 1.23; potash, 5.00; phosphoric acid from dissolved phosphate rock; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit and manure salts. *Found*: Phosphoric acid, soluble, 3.95; reverted, 2.88; insoluble, 1.19; total, 8.02; available, 6.83; nitrogen, 1.27; potash, 5.04; chlorine, 3.2; availability of nitrogen, 80.

4701. *CANTON CHEMICAL POTATO MANURE*. Washington & Alexander, Charles Town. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 4.41; reverted, 2.29; insoluble, 1.27; total, 7.97; available, 6.70; nitrogen, 1.22; potash, 4.67; chlorine, 2.8; availability of nitrogen, 83.

4767. *CANTON CHEMICAL POTATO MANURE*. Armstrong, Chrislip & Co., Buckhannon. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 4.22; reverted, 2.80; insoluble, 0.99; total, 8.01; available, 7.02; nitrogen, 1.33; potash, 5.18; chlorine, 1.9; availability of nitrogen, 84.

4785. *CANTON CHEMICAL POTATO MANURE*. C. W. Seiver, Keyser. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 2.48; reverted, 3.55; insoluble, 0.69; total, 6.72; available, 6.03; nitrogen, 1.40; potash, 4.86; chlorine, 3.1; availability of nitrogen, 82.

4665. *CANTON CHEMICAL GAME GUANO*. J. M. Hagerty, Farmington. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00 total, 9.00 available, 8.00; nitrogen, 1.65; potash, 2.00; phosphoric acid from dissolved phosphate rock and animal bones; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit. *Found*: Phosphoric acid, soluble, 6.37; reverted, 2.11; insoluble, 1.42; total, 9.90; available, 8.58; nitrogen, 2.08; potash, 2.42; chlorine, 3.3; availability of nitrogen, 88.

4666. *CANTON CHEMICAL BAKER'S SPECIAL WHEAT, CORN AND GRASS MIXTURE*. J. M. Hagerty, Farmington. *Guarantee*: Phosphoric acid, soluble, 7.00; reverted, 2.00; insoluble, 1.00; total, 10.00; available, 9.00; nitrogen, 0.82; potash, 2.00; phosphoric acid from dissolved phosphate rock and animal bones; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit. *Found*: Phosphoric acid, soluble, 7.10; reverted, 2.63; insoluble, 1.30; total, 11.03; available, 9.73; nitrogen, 1.16; potash, 1.94; chlorine, 3.8; availability of nitrogen, 83.

4696. *CANTON CHEMICAL BAKER'S SPECIAL WHEAT, CORN AND GRASS GROWER*. W. H. Brady, Berkeley Springs. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 7.29; reverted, 1.73; insoluble, 1.65; total, 10.67; available, 9.02; nitrogen, 0.91; potash, 2.04; chlorine, 3.9; availability of nitrogen, 80.

4793. *CANTON CHEMICAL BAKER'S SPECIAL WHEAT, CORN AND GRASS MIXTURE*. Miller, Ronceverte. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 6.92; reverted, 1.77; insoluble, 1.89; total, 10.58; available, 8.69; nitrogen, 1.08; potash, 2.00; chlorine, 3.3; availability of nitrogen, 85.

4699. *CANTON CHEMICAL BAKER'S SOLUBLE AL-*

KALINE BONE. Washington & Alexander, Charles Town. *Guarantee:* Phosphoric acid, soluble, 10.00; reverted, 2.00; insoluble, 1.00; total, 13.00; available, 12.00; potash, 3.00; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found:* Phosphoric acid, soluble, 8.51; reverted 3.90; insoluble, 1.38; total, 13.79; available, 12.41; potash, 2.76; chlorine, 1.7.

4738. *CANTON CHEMICAL EAGLE PHOSPHATE.* L. P. Licklider, Martinsburg. *Guarantee:* Phosphoric acid, soluble, 5.00; reverted, 2.00; insoluble, 1.00; total, 8.00; available, 7.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit. *Found:* Phosphoric acid, soluble, 4.02; reverted, 3.92; insoluble, 0.91; total, 8.85; available, 7.94; nitrogen, 1.01; potash, 1.21; chlorine, 7.1; availability of nitrogen, 78.

4773. *FINE GROUND BONE.* C. W. Siever, Keyser. *Guarantee:* Total phosphoric acid, 23.00; nitrogen, 2.47; from animal bone. *Found:* Total phosphoric acid, 25.65; nitrogen, 2.66; availability of nitrogen, 93.

4702. *KAINIT.* Washington & Alexander, Charles Town. *Guarantee:* Potash, 12.00. *Found:* Potash, 11.12.

4712. *BRADLEY'S BEAN AND POTATO.* J. W. Ringer & Sons, Terra Alta. *Guarantee:* Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 0.82; potash, 4.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from manure salts and kainit. *Found:* Phosphoric acid, soluble, 4.72; reverted, 3.97; insoluble, 0.47; total, 9.60; available, 8.69; nitrogen, 0.87; potash, 3.86; chlorine, 3.1; availability of nitrogen, 77.

4713. *BRADLEY'S ALKALINE BONE.* J. W. Ringer

& Son, Terra Alta. *Guarantee*: Phosphoric acid, soluble, 8; reverted, 2; insoluble, 1; total 11; available, 10; potash, 2; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found*: Phosphoric acid, soluble, 6.73; reverted, 3.94; insoluble, 0.96; total, 11.63; available, 10.67; potash, 1.86; chlorine, 2.1.

4714. *BRADLEY'S SOLUBLE DISSOLVED BONE*. Thomas Rogers, Rowlesburg. *Guarantee*: Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 1.00; total, 15.00; available, 14.00; phosphoric acid from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 12.10; reverted, 3.56; insoluble, 1.00; total, 16.96; available, 15.66.

4715. *BRADLEY'S NIAGARA PHOSPHATE*. Thos. Rogers, Rowlesburg. *Guarantee*: Phosphoric acid, soluble, 5.00; reverted, 2.00; insoluble, 1.00; total, 8.00; available, 7.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit. *Found*: Phosphoric acid, soluble, 5.28; reverted, 2.35; insoluble, 1.33; total, 8.96; available, 7.63; nitrogen, 0.98; potash, 1.40; chlorine, 6.6; availability of nitrogen, 79.

4765. *CLEVELAND DRYER FOREST CITY BUCK-EYE*. Bishop & Barbe, Jane Lew. *Guarantee*: Phosphoric acid, soluble, 7.00; reverted, 2.00; insoluble, 1.00; total, 10.00; available, 9.00; nitrogen, 2.47; potash, 2.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit. *Found*: Phosphoric acid, soluble, 7.05; reverted, 1.51; insoluble, 1.34; total, 10.90; available, 8.58; nitrogen, 1.92; potash, 2.45; chlorine, 2.1; availability of nitrogen, 88.

4680 *DETRICK'S QUICKSTEP BONE PHOSPHATE FOR POTATOES AND TOBACCO*. Jas. R. Morris, Gath. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insol-

uble, 1.00; total, 9.00; available, 8.00; nitrogen, 2.47; potash, 4.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit and manure salts. *Found*: Phosphoric acid, soluble, 6.24; reverted, 2.83; insoluble, 2.09; total, 11.16; available, 9.07; nitrogen, 2.51; potash, 4.13; chlorine, 1.5; availability of nitrogen, 80.

4679. *DETRICK'S SOLUBLE BONE AND POTASH.*

Jas. R. Morris, Gath. *Guarantee*: Phosphoric acid, soluble, 2; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found*: Phosphoric acid, soluble, 7.64; reverted, 3.40; insoluble, 1.27; total, 12.31; available, 11.04; potash, 2.00; chlorine, 4.7.

4681. *DETRICK'S CORN AND OATS FERTILIZER.*

Jas. R. Morris, Gath. *Guarantee*: Phosphoric acid, soluble, 7.00; reverted, 2.00; insoluble, 1.00; total, 10.00; available, 9.00; nitrogen, 0.82; potash, 3.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit and manure salts. *Found*: Phosphoric acid, soluble, 7.28; reverted, 2.16; insoluble, 1.23; total, 10.67; available, 9.44; nitrogen, 1.13; potash, 3.27; chlorine, 3.5; availability of nitrogen, 82.

4724. *LAZARETTO HIGH GRADE DISSOLVED BONE PHOSPHATE AND POTASH.* Griffith & Howell, Belington.

Guarantee: Phosphoric acid, soluble, 10.00; reverted, 2.00; insoluble, 1.00; total, 13.00; available, 12.00 potash, 5.00; phosphoric acid from dissolved rock; potash from kainit and manure salts. *Found*: Phosphoric acid, soluble, 9.07; reverted, 3.60; insoluble, 0.80; total, 13.47; available, 12.67; potash, 4.70; chlorine, 5.1.

4682. *LAZARETTO HIGH GRADE BONE AND POTASH.* A. G. Chrislip, Philippi. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 8.02; reverted, 4.77; insoluble,

ble, 0.55; total, 13.34; available, 12.79; potash, 4.89; chlorine, 1.7.

4756. *LAZARETTO AMMONIATED BONE PHOSPHATE.* T. B. Drummond & Co., Buckhannon. *Guarantee:* Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 0.82; potash, 2.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit. *Found:* Phosphoric acid, soluble, 3.21; reverted, 5.60; insoluble, 1.88; total, 10.69; available, 8.81; nitrogen, 0.93; potash, 2.19; chlorine, 3.0; availability of nitrogen, 80.

4760. *LAZARETTO BONE COMPOUND.* T. B. Drummond & Co., Buckhannon. *Guarantee:* Phosphoric acid, soluble, 7.00; reverted, 2.00; insoluble, 1.00; total, 10.00; available, 3.00; nitrogen, 1.03; potash, 3.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit and manure salts. *Found:* Phosphoric acid, soluble, 6.35; reverted, 4.10; insoluble, 1.52; total, 11.97; available, 10.45; nitrogen, 1.11; potash, 3.42; chlorine, 1.8; availability of nitrogen, 78.

4761. *LAZARETTO CROP GROWER.* T. B. Drummond & Co., Buckhannon. *Guarantee:* Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 1.65; potash, 2.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit. *Found:* Phosphoric acid, soluble, 5.67; reverted, 2.51; insoluble, 1.93; total, 10.11; available, 8.18; nitrogen, 1.83; potash, 1.97; chlorine, 2.4; availability of nitrogen, 84.

4762. *LAZARETTO SPECIAL POTATO FERTILIZER.* T. B. Drummond & Co., Buckhannon. *Guarantee:* Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00 total, 9.00;

available, 8.00; nitrogen, 0.82; potash, 4.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit and manure salts. *Found*: Phosphoric acid, soluble, 4.80; reverted, 2.39; insoluble, 2.19; total, 9.38; available, 7.19; nitrogen, 1.16; potash, 3.99; chlorine, 2.4; availability of nitrogen, 83.

4764. *LAZARETTO DISSOLVED BONE PHOSPHATE AND POTASH*. T. B. Drummond & Co., Buckhannon. *Guarantee*: Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found*: Phosphoric acid, soluble, 5.82; reverted, 4.44; insoluble, 1.61; total, 11.87; available, 10.26; potash, 2.04; chlorine, 3.1.

4783. *MARYLAND AMMONIATED BONE*. J. L. Woodyard, Pruntytown. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 1.65; potash, 3.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit and manure salts. *Found*: Phosphoric acid, soluble, 3.98; reverted, 5.32; insoluble, 2.94; total, 12.24; available, 9.30; nitrogen, 1.76; potash, 2.97; chlorine, 1.5; availability of nitrogen, 8.7.

4784. *MARYLAND BONE SUPERPHOSPHATE*. J. L. Woodyard, Pruntytown. *Guarantee*: Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found*: Phosphoric acid, soluble, 6.79; reverted, 3.33; insoluble, 1.19; total, 11.31; available, 10.12; potash, 1.93; chlorine, 1.5.

4741. *SUSQUEHANNA SUPERIOR ROCK PHOSPHATE*. J. H. Miller & Sons, Martinsburg. *Guarantee*:

Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 1.00; total, 15.00; available, 14.00; from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 10.59; reverted, 4.40; insoluble, 1.05; total, 16.04; available, 14.99.

4743. *SUSQUEHANNA XXV PHOSPHATE*. J. H. Miller & Sons, Martinsburg. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from dissolved phosphoric rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit. *Found*: Phosphoric acid, soluble, 4.30; reverted, 3.47; insoluble, 1.07; total, 9.84; available, 7.77; nitrogen, 1.15; potash, 1.34; chlorine, 6.1; availability of nitrogen, 83.

4744. *SUSQUEHANNA POTATO PHOSPHATE*. J. H. Miller & Sons, Martinsburg. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 1.65; potash, 5.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit and manure salts. *Found*: Phosphoric acid, soluble, 4.75; reverted, 2.99; insoluble, 0.79; total, 8.53; available, 7.74; nitrogen, 1.92; potash, 5.01; chlorine, 1.9; availability of nitrogen, 84.

4684. *WILLIAMS' & CLARK'S GOOD GROWER POTATO PHOSPHATE*. A. G. Chrislip, Philippi. *Guarantee*: Phosphoric acid, soluble, 4.00; reverted, 2.00; insoluble, 1.00; total, 7.00; available, 6.00; nitrogen, 1.23; potash, 5.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit and manure salts. *Found*: Phosphoric acid, soluble, 5.30; reverted, 2.23; insoluble, 0.95; total, 8.48; available, 7.53; nitrogen, 1.49; potash, 4.86; chlorine, 0.2; availability if nitrogen, 84.

4768. *WILLIAMS' & CLARK'S GOOD GROWER POTATO PHOSPHATE*. Bishop & Barbe, Jane Lew. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 2.89; reverted, 3.66; insoluble, 1.45; total, 8.00; available, 6.55; nitrogen, 1.31; potash, 5.32; chlorine, 2.1; availability of nitrogen, 79.

4719. *WILLIAMS' & CLARK'S ACORN ACID PHOSPHATE*. Griffith & Howell, Belington. *Guarantee*: Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 1.00; total, 15.00; available, 14.00; from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 12.20; reverted, 4.16; insoluble, 1.13; total, 17.49; available, 16.36.

4723. *WILLIAMS' & CLARK'S PROLIFIC CROP PRODUCER*. Griffith & Howell, Belington. *Guarantee*: Phosphoric acid, soluble, 5.00; reverted, 2.00; insoluble, 1.00; total, 8.00; available, 7.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit. *Found*: Phosphoric acid, soluble, 4.22; reverted, 2.90; insoluble, 1.13; total, 8.30; available, 7.12; nitrogen, 1.20; potash, 1.62; chlorine, 1.1; availability of nitrogen, 78.

4676. *ZELL'S DISSOLVED S. C. PHOSPHATE*. W. F. Sill, Pennsboro. *Guarantee*: Phosphoric acid, soluble, 10.00; reverted 2.00; insoluble, 1.00; total, 13.00; available, 12.00; from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 7.37; reverted, 5.95; insoluble, 1.14; total, 14.46; available, 13.32.

4692 *ZELL'S DISSOLVED S. C. PHOSPHATE*. R. Hunter, Berkeley Springs. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 11.86; reverted, 3.73; insoluble, 1.34; total, 16.93; available, 15.59.

4691 *ZELL'S ELECTRIC PHOSPHATE*. Philippi Mill Co., Philippi. *Guarantee*: Phosphoric acid, soluble, 8.00;

reverted, 2.00; insoluble, 1.00; total, 11.00, available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found*: Phosphoric acid, soluble, 7.51; reverted, 3.00; insoluble, 0.67; total, 11.18; available, 10.41; potash, 1.98; chlorine, 5.7.

4721. *ZELL'S ELECTRIC PHOSPHATE*. Benton Teter, Belington. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 7.16; reverted, 3.24; insoluble, 0.79; total, 11.19; available, 10.40; potash, 2.10; chlorine, 5.7.

4693. *ZELL'S DISSOLVED BONE PHOSPHATE*. R. Hunter, Berkeley Springs. *Guarantee*: Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 1.00; total, 15.00; available, 14.00; from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 12.06; reverted, 4.08; insoluble, 1.27; total, 17.31; available, 16.04.

4729. *ZELL'S DISSOLVED BONE PHOSPHATE*. DeBerry & Bishop, Terra Alta. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 12.11; reverted, 4.12; insoluble, 1.32; total, 17.55; available, 16.23.

4795. *ZELL'S DISSOLVED BONE PHOSPHATE*. Johnson & Gwinn, Alderson. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 11.09; reverted, 3.34; insoluble, 1.46; total, 15.89, available, 14.43.

4695. *ZELL'S LITTLE GIANT*. R. Hunter, Berkeley Springs. *Guarantee*: Phosphoric acid, soluble, 5.00; reverted, 2.00; insoluble, 1.00; total, 8.00; available, 7.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from dissolved phosphate rock and animal bone; nitrogen from dissolved fish, tankage and other animal matter; potash from kainit. *Found*: Phosphoric acid, soluble, 5.25; reverted, 2.06; insoluble, 1.22; total, 8.53; available, 7.31; nitrogen, 0.93; potash, 1.64; chlorine, 6.4; availability of nitrogen, 80.

4731. *ZELL'S LITTLE GIANT*. De Berry & Bishop, Terra Alta. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 4.80; reverted, 2.70; insoluble, 1.19; total, 8.69; available, 7.50; nitrogen, 1.01; potash, 1.84; chlorine, 3.5; availability of nitrogen, 78.

4720. *ZELL'S AMMONIATED BONE SUPERPHOSPHATE*. Benton Teeter, Belington. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 1.65; potash, 2.00; phosphoric acid, dissolved phosphate rock and animal bone; nitrogen, dissolved fish, tankage and other animal matter; potash from kainit. *Found*: Phosphoric acid, soluble, 5.58; reverted, 3.11; insoluble, 2.09; total, 10.78; available, 8.69; nitrogen, 1.78; potash, 1.98; chlorine, 2.7; availability of nitrogen, 87.

4675. *REESE HIGH GRADE POTASH MIXTURE*. W. F. Sill, Pennsboro. *Guarantees* Phosphoric acid, soluble, 10.00; reverted, 2.00; insoluble, 1.00; total, 13.00; available, 12.00; potash, 5.00; phosphoric acid from dissolved phosphate rock; potash from kainit and manure salts. *Found*: Phosphoric acid, soluble, 9.21; reverted, 3.29; insoluble, 0.75; total, 13.25; available, 12.50; potash, 4.93; chlorine, 1.7.

ARMOUR FERTILIZER WORKS,

CHICAGO, ILL.

4688. *HIGH GRADE POTATO*. W. H. Bailey Hardware Company, Morgantown, W. Va. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 2.00; total, 10.00; available, 8.00; nitrogen, 1.65; potash, 10.00; phosphoric acid from animal bones and superphosphates; nitrogen from bone, blood, tankage and nitrate of soda; potash from muriate and sulphate of potash. *Found*: Phosphoric acid, soluble, 5.49; reverted, 3.05; insoluble, 1.33; total,

9.87; animal, 8.54; nitrogen, 1.63; potash, 10.43; chlorine, 2.9; availability of nitrogen, 89.

4689. *STAR PHOSPHATE.* W. H. Bailey Hardware Company, Morgantown, West Virginia. *Guarantee:* Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 2.00; total, 16.00; available, 14.00; phosphoric acid from superphosphate. *Found:* Phosphoric acid, soluble, 13.07; reverted, 2.64; insoluble, 0.82; total, 16.53; available, 15.71.

4687. *WHEAT, CORN AND OATS SPECIAL.* W. H. Bailey Hardware Company, Morgantown, W. Va. *Guarantee:* Phosphoric acid, soluble, 5.00; reverted, 2.00; insoluble, 2.00; total, 9.00; available, 7.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from animal bone and superphosphate; nitrogen from bone, blood, tankage and nitrate of soda; potash from muriate of potash, sulphate of potash and kainit. *Found:* Phosphoric acid, soluble, 5.97; reverted, 3.47; insoluble, 0.86; total, 10.32; available, 9.46; nitrogen, 0.82; potash, 1.28; chlorine, 2.1; availability of nitrogen, 75.

4690. *GRAIN GROWER.* W. H. Bailey Hardware Co., Morgantown. *Guarantee:* Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 2.00; total, 10.00; available, 8.00; nitrogen, 1.65; potash, 2.00; phosphoric acid from animal bone and superphosphate; nitrogen from bone, blood, tankage and nitrate of soda; potash from muriate of potash, sulphate of potash and kainit. *Found:* Phosphoric acid, soluble, 6.40; reverted, 2.02; insoluble, 0.37; total, 8.79; available, 8.42; nitrogen, 1.59; potash, 2.30; chlorine, 3.4; availability of nitrogen, 90.

4686. *BONE MEAL.* W. H. Bailey Hardware Co., Morgantown. *Guarantee:* Phosphoric acid, reverted, 14; insoluble, 10.00; total, 24; available, 10.00; nitrogen, 2.47; from animal

bones. *Found*: Phosphoric acid, total, 22.49; nitrogen, 2.84; availability of nitrogen, 85.

BAUGH & SONS COMPANY,
BALTIMORE. MD.

4677. *BAUGH'S CORN FERTILIZER*. Harrisville Mill Co., sampled at Pennsboro. *Guarantee*: reverted, 3.00; total, 11.00; available, 8.00; nitrogen, 0.82; potash, 4.00; phosphoric acid from animal bones and phosphate rock; nitrogen from tankage and animal bones; potash from kainit and muriate. *Found*: Phosphoric acid, soluble, 7.18; reverted, 1.59; insoluble, 0.70; total, 9.47; available, 8.77; nitrogen, 1.01; potash, 3.81; chlorine, 2.4; availability of nitrogen, 65.

4748. *BAUGH'S CORN FERTILIZER*. R. T. Lowndes, Clarksburg. *Guarantee*—(As Above.) *Found*: Phosphoric acid, soluble, 5.09; reverted, 3.93; insoluble, 0.83; total, 9.85; available, 9.02; nitrogen, 1.05; potash, 2.38; chlorine, 3.2; availability of nitrogen, 80.

4678. *BAUGH'S SOLUBLE ALKALINE SUPERPHOSPHATE*. Harrisville Mill Co., sampled at Pennsboro. *Guarantee*: Phosphoric acid, available, 10.00; potash, 2.00; phosphoric acid from phosphate rock; potash from kainit and muriate of potash. *Found*: Phosphoric acid, soluble, 6.90; reverted, 3.67; insoluble, 1.16; total, 11.73; available, 10.57; potash 2.15; chlorine, 5.5.

4709. *BAUGH'S GENERAL CROP GROWER*. Offutt & Lakin, Terra Alta. *Guarantee*: Phosphoric acid, insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from animal bone and phosphate rock; nitrogen from tankage and animal bone; potash from kainit. *Found*: Phosphoric acid, soluble, 5.41; reverted, 3.74; insoluble, 1.01; total, 10.16; available, 9.15; nitrogen, 0.90; potash, 1.79; chlorine, 3.7; availability of nitrogen, 76.

4740. *BAUGH'S GENERAL CROP GROWER.* L. P. Licklider, Martinsburg. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 4.61; reverted, 4.22; insoluble, 0.96; total, 9.79; available, 8.83; nitrogen, 0.85; potash, 1.91; chlorine, 3.5; availability of nitrogen, 76.

4745. *BAUGH'S GENERAL CROP GROWER.* R. T. Lowndes, Clarksburg. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 5.17; reverted, 4.87; insoluble, 1.10; total, 10.14; available, 9.04; nitrogen, 1.09; potash, 1.66; chlorine, 3.9; availability of nitrogen, 80.

4770. *BAUGH'S GENERAL CROP GROWER.* R. B. Bollyard, Fetterman. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 5.97; reverted, 2.58; insoluble, 0.90; total, 9.45; available, 8.55; nitrogen, 0.82; potash, 1.32; chlorine, 5.2; availability of nitrogen, 72.

4710. *BAUGH'S HIGH GRADE ACID PHOSPHATE, OR DISSOLVED S. C. ROCK.* Offutt & Lakin, Terra Alta. *Guarantee*: Phosphoric acid, available, 14.00; from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 9.15; reverted, 6.23; insoluble, 2.75; total, 18.13; available, 15.38.

4769. *BAUGH'S HIGH GRADE ACID PHOSPHATE, OR DISSOLVED S. C. ROCK.* R. B. Bolyard, Fetterman. *Guarantee*—(As Above.) *Found*: Phosphoric acid, soluble, 11.65; reverted, 4.62; insoluble, 1.65; total, 17.92; available, 16.27.

4711. *BAUGH'S DOUBLE EAGLE PHOSPHATE.* Offutt & Lakin, Terra Alta. *Guarantee*: Phosphoric acid, insoluble, 3.00; total, 11.00; available, 8.00; nitrogen, 1.64; potash, 1.00; phosphoric acid from animal bone and phosphate rock; nitrogen from tankage and animal bone; potash from kainit. *Found*: Phosphoric acid, soluble, 4.77; reverted, 4.41; insoluble,

1.37; total, 10.55; available, 9.18; nitrogen, 1.67; potash, 1.40; chlorine, 3.2; availability of Nitrogen, 85.

4746. *BAUGH'S DOUBLE EAGLE PHOSPHATE.*

R. T. Lowndes, Clarksburg. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 5.03; reverted, 4.08; insoluble, 2.01; total, 11.12; available, 9.11; nitrogen, 1.94; potash, 1.48; chlorine, 4.1; availability of nitrogen, 86.

4771. *BAUGH'S DOUBLE EAGLE PHOSPHATE.*

R. B. Bollyard, Fetterman. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 5.76; reverted, 2.95; insoluble, 0.74; total, 9.45; available, 8.71; nitrogen, 1.96; potash, 1.71; chlorine, 3.5; availability of nitrogen, 81.

4739. *BAUGH'S POTATO FERTILIZER.* L. P. Lick-

lider, Martinsburg. *Guarantee*: Phosphoric acid, insoluble, 3.00; total, 11.00; available, 8.00; nitrogen, 1.64; potash, 2.00; phosphoric acid from animal bones and phosphate rock; nitrogen from tankage and animal bones; potash from kainit and muriate of potash. *Found*: Phosphoric acid, soluble, 4.73; reverted, 3.90; insoluble, 1.02; total, 9.65; available, 8.63; nitrogen, 2.04; potash, 2.40; chlorine, 3.7; availability of nitrogen, 90.

4788. *BAUGH'S POTATO FERTILIZER.* R. B. Bolly-

yard, Fetterman. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 5.49; reverted, 3.05; insoluble, 1.33; total, 9.87; available, 8.54; nitrogen, 1.63; potash, 2.48; chlorine, 2.9; availability of nitrogen, 84.

4747. *BAUGH'S SPECIAL POTATO MANURE.* R. T.

Lowndes, Clarksburg. *Guarantee*: Phosphoric acid, insoluble, 2.00; total, 7.00; available, 5.00; nitrogen, 1.64; potash, 10.00; phosphoric acid from animal bones and phosphate rock; nitrogen from tankage and animal bones; potash from high grade sulphate, kainit, and muriate of potash. *Found*: Phosphoric

acid, soluble, 3.56; reverted, 4.07; insoluble 1.11; total, 8.74; available, 7.63; nitrogen, 1.67; potash, 7.39; chlorine, 1.0; availability of nitrogen, 83.

4787. *BAUGH'S CORN FERTILIZER.* R. B. Bollyard, Fetterman. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 0.91; reverted, 7.57; insoluble, 0.54; total, 9.02; available, 8.48; nitrogen, 1.09; potash, 4.21; chlorine, 2.6; availability of nitrogen, 83.

BOWKER FERTILIZER COMPANY,

CINCINNATI, OHIO.

4757. *BOWKER'S HARVEST BONE.* T. B. Drummond & Co., Buckhannon. *Guarantee*: Phosphoric acid, soluble, 2.00; total, 10.00; available, 8.00; nitrogen, 0.75; potash, 1.00; phosphoric acid from dissolved animal bone and mineral phosphate; nitrogen from dissolved bone and tankage; potash from muriate of potash. *Found*: Phosphoric acid, soluble, 0.81; reverted, 6.60; insoluble, 4.14; total, 11.55; available, 7.41; nitrogen, 0.84; potash, 1.45; chlorine, 0.8; availability of nitrogen, 72.

4775. *BOWKER'S HARVEST BONE.* J. E. Loudermilk, Ronceverte. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 5.09; reverted, 3.94; insoluble, 2.75; total, 11.78; available, 9.03; nitrogen, 0.93; potash, 1.19; chlorine, 1.6; availability of nitrogen, 84.

4777. *BOWKER'S BONE MEAL.* J. E. Loudermilk, Ronceverte. *Guarantee*: Total phosphoric acid, 20.00; nitrogen, 1.50; from ground animal bone; total phosphoric acid, 24.17; nitrogen, 1.76; availability of nitrogen, 85.

4780. *BOWKER'S SOLUBLE BONE.* J. E. Loudermilk, Ronceverte. *Guarantee*: Phosphoric acid, insoluble, 2.00; total, 16.00; available, 14.00; from dissolved mineral phosphate.

Found: Phosphoric acid, soluble, 8.51; reverted, 5.89; insoluble, 3.83; total, 18.23; available, 14.44.

4794. *BOWKER'S DISSOLVED BONE AND POTASH.*

J. E. Loudermilk, Ronceverte. *Guarantee*: Phosphoric acid, insoluble, 2.00; total, 12.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved mineral phosphate; potash from muriate of potash. *Found*: Phosphoric acid, soluble, 5.40; reverted, 3.46; insoluble, 2.70; total, 11.56; available, 8.86; potash, 1.86; chlorine, 3.6.

THE CINCINNATI PHOSPHATE COMPANY,

CINCINNATI, OHIO.

4797. *CAPITOL GRAIN AND GRASS GROWER.*

Shanklin Bros., Lowell. *Guarantee*: Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from mineral phosphate, bone and animal tankage; nitrogen from tankage; potash from muriate and carbonate. *Found*: Phosphoric acid, soluble, 7.15; reverted, 5.00; insoluble, 1.09; total, 13.24; available, 12.15; nitrogen, 0.92; potash, 1.35; chlorine, 1.6; availability of nitrogen, 70.

MARIETTA BONE AND PHOSPHATE COMPANY,

MARIETTA, OHIO.

4673. *MARIETTA POTATO AND TRUCK SPECIAL.*

R. A. Johnson, Parkersburg. *Guarantee*: Phosphoric acid, total, 11.00; available, 8.00; nitrogen, 3.00; potash, 5.00; phosphoric acid from acid phosphate; nitrogen from nitrate of soda, tankage and bone; potash from sulphate of potash. *Found*: Phosphoric acid, soluble, 2.19; reverted, 7.55; insoluble, 2.83; total, 12.67; available, 9.84; nitrogen, 1.56; potash, 4.66; chlorine, 0.6; availability of nitrogen, 86.

4674. *MARIETTA HORSE BRAND CORN, OATS AND WHEAT GROWER.* R. A. Johnson, Parkersburg. *Guarantee:* Total phosphoric acid, 11.00; available, 8.00; nitrogen, 2.00; potash, 2.00; phosphoric acid from acid phosphate and bone; nitrogen from bone and tankage; potash from sulphate of potash. *Found:* Phosphoric acid, soluble, 0.50; reverted, 8.26; insoluble, 3.51; total, 12.27; available, 8.76; nitrogen, 1.69; potash, 2.62; chlorine, 1.7; availability of nitrogen, 78.

MILLER FERTILIZER COMPANY,
BALTIMORE, MD.

4703. *GROUND BONE.* J. L. Loughrie, Rowlesburg. *Guarantee:* Total phosphoric acid, 14.00; nitrogen, 2.47 from animal bone. *Found:* Phosphoric acid, total, 16.34; nitrogen, 3.02; availability of nitrogen, 75.

4704. *S. C. ROCK.* J. L. Loughrie, Rowlesburg. *Guarantee:* Phosphoric acid, soluble, 10.00; reverted, 4.00; insoluble, 1.5; total, 15.50; available, 14.00; from acid phosphate. *Found:* Phosphoric acid, soluble, 2.12; reverted, 4.62; insoluble, 0.70; total, 17.44; available, 16.74.

4705. *WOOLDRIDGE & ANDERSON'S GERMAN ALKALINE MIXTURE.* J. L. Loughrie, Rowlesburg. *Guarantee:* Phosphoric acid, soluble, 7.00; reverted, 3.00; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from acid phosphate; potash from manure salts. *Found:* Phosphoric acid, soluble, 2.12; reverted, 6.40; insoluble, 1.51; total, 10.03; available, 8.52; potash, 2.49; chlorine, 2.8.

4706. *WOOLDRIDGE & ANDERSON'S TIGER BONE STOCK PHOSPHATE.* J. L. Loughrie, Rowlesburg. *Guarantee:* Phosphoric acid, soluble, 5.00; reverted, 3.00; insoluble, 1.50; total, 9.50; available, 8.00; nitrogen, 0.82; potash, 5.00; phosphoric acid from dissolved bone, tankage and acid phos-

phate; nitrogen from dissolved bone and tankage, nitrate of soda; potash from muriate of potash. *Found*: Phosphoric acid, soluble, 3.68; reverted, 4.33; insoluble, 1.97; total, 9.98; available, 8.01; nitrogen, 0.78; potash, 4.63; chlorine, 1.6; availability of nitrogen, 84.

4707. *WOOLDRIDGE & ANDERSON'S SPECIAL POTATO AND TOMATO GROWER*. J. L. Loughrie, Rowlesburg. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 3.00; insoluble, 1.50; total, 10.50; available, 9.00; nitrogen, 1.65; potash, 5.00; phosphoric acid from dissolved bone and tankage and acid phosphate; nitrogen from dissolved bone and tankage and nitrate of soda; potash from muriate of potash. *Found*: Phosphoric acid, soluble, 6.49; reverted, 2.25; insoluble, 0.78; total, 9.52; available, 8.74; nitrogen, 1.65; potash, 4.53; chlorine, 1.0; availability of nitrogen, 89.

4708. *WOOLDRIDGE & ANDERSON'S BATTLE-AXE POTASH MIXTURE*. J. L. Loughrie, Rowlesburg. *Guarantee*: Phosphoric acid, soluble, 9.00; reverted, 3.00, insoluble, 1.00; total, 13.00; available, 12.00; potash, 3.00; phosphoric acid from acid phosphate; potash from manure salts. *Found*: Phosphoric acid, soluble, 3.98; reverted, 8.40; insoluble, 0.95; total, 13.33; available, 12.38; potash, 2.82; chlorine, 2.0.

BALTIMORE PULVERIZING COMPANY,

BALTIMORE, Md.

4733. *SPECIAL SPRING MIXTURE*. R. N. Stewart & Son, Martinsburg. Unregistered. *Found*: Phosphoric acid soluble, 1.04; reverted 6.77; insoluble, 1.10; total, 9.91; available, 8.81; potash, 1.39; chlorine, 3.00.

G. OBER & SONS COMPANY,

BALTIMORE, Md.

4685. *OBER'S FARMERS MIXTURES*. A. G. Chris-

lip, Philippi. *Guarantee*: Phosphoric acid, soluble, 7.00; reverted, 2.00; insoluble, 2.00; total, 11.00; available, 9.00; nitrogen, 0.82; potash, 2.00; phosphoric acid from high grade Florida phosphate, bone, tankage and fish; nitrogen from high grade bone and blood, tankage and fish; potash from sulphate of potash. *Found*: Phosphoric acid soluble, 7.37; reverted, 2.09; insoluble, 0.99; total, 10.45; available, 9.46; nitrogen, 0.89; potash, 2.54; chlorine, trace; availability of nitrogen, 85.

4683. *OBER'S DISSOLVED BONE PHOSPHATE.*

A. G. Chrislip, Philippi. *Guarantee*: Phosphoric acid, soluble, 11.00; reverted, 3.00; insoluble, 2.00; total, 16.00; available, 14.00; from high grade Florida phosphate. *Found*: Phosphoric acid, soluble, 16.53; reverted, 1.45; insoluble, 0.15; total, 18.13; available, 17.98.

4732. *OBER'S DISSOLVED BONE PHOSPHATE.*

R. N. Stewart & Son, Martinsburg. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 10.57; reverted, 6.18; insoluble, 1.33; total, 18.06; available, 16.73.

PIEDMONT MT. AIRY GUANO COMPANY,

CINCINNATI, OHIO.

4727. *PIEDMONT POTATO PRODUCER.* C. Phillips, Belington. *Guarantees* Phosphoric acid, insoluble, 2.00; total, 7.00; available, 5.00; nitrogen, 2.47; potash, 6.00; phosphoric acid from dissolved bone and phosphate rock; nitrogen from bone, blood, tankage and nitrate of soda; potash from high grade muriate of potash. *Found*: Phosphoric acid, soluble, 4.98; reverted, 1.80; insoluble, 0.65; total, 7.43; available, 6.78; nitrogen, 2.38; potash, 5.61; chlorine, 1.40; availability of nitrogen, 85.

4728. *PIEDMONT FARMERS' HIGH GRADE BONE AND POTASH.* C. Phillips, Belington. *Guarantee*: Phos-

phoric acid, soluble, 2.00; reverted: total, 12.00; available, 10.00; potash, 2.00; phosphoric acid from S. C. rock; potash from kainit. *Found*: Phosphoric acid, soluble, 7.94; reverted, 2.78; insoluble, 0.68; total, 11.40; available, 10.72; potash, 2.33; chlorine, 3.2.

SWIFT & COMPANY,

CHICAGO, ILL.

4776. *SWIFT'S CHAMPION WHEAT AND CORN GROWER*. J. M. Miller & Bro., Ronceverte. *Guarantee*: phosphoric acid, insoluble, 1.00; total, 13.00; available, 12.00; nitrogen, 1.64; potash, 2.00; phosphoric acid from pure animal bone, acidulated; nitrogen from animal bone; potash from muriate. *Found*: Phosphoric acid, soluble, 2.03; reverted, 11.27; insoluble, 2.18; total, 15.48; available, 13.30; nitrogen, 1.82; potash, 2.00; chlorine, 0.9; availability of nitrogen, 93.

4778. *SWIFT'S POTATO AND TOBACCO GROWER*. J. M. Miller & Bro., Ronceverte. *Guarantee*: Phosphoric acid, insoluble, 1.00; total, 11.00; available, 10.00; nitrogen, 3.25; potash, 5.00; phosphoric acid from acidulated rock and animal bone; nitrogen from bone, blood and tankage; potash from muriate of potash. *Found*: Phosphoric acid, soluble, 7.14; reverted, 4.05; insoluble, 4.07; total, 15.26; available, 11.19; nitrogen, 2.72; potash, 4.44; chlorine, 0.1; availability of nitrogen, 82.

4779. *SWIFT'S SPECIAL BONE MEAL*. J. M. Miller & Bro., Ronceverte. *Guarantee*: Total phosphoric acid, 27.50; nitrogen, 0.82; from animal bone. *Found*: Phosphoric acid, 31.32; nitrogen, 1.19; availability of nitrogen, 89.

4781. *SWIFT'S SUPERPHOSPHATE*. J. M. Miller & Bro., Ronceverte. *Guarantee*: Phosphoric acid, insoluble, 4.00; total, 12.00; available, 8.00; nitrogen, 1.64; potash, 2.00; phosphoric acid from animal bone and acidulated phosphate rock; nitrogen from animal bone, blood and tankage; potash from

muriate. *Found*: Phosphoric acid, soluble, 3.77; reverted, 3.92; insoluble, 2.26; total, 9.95; available, 7.69; nitrogen, 1.46; potash, 1.96; chlorine, 0.7; availability of nitrogen, 88.

4734. *SWIFT'S SUPERPHOSPHATE*. R. N. Stewart & Son, Martinsburg. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 3.59; reverted, 3.99; insoluble, 2.10; total, 9.68; available, 7.58; nitrogen, 1.53; potash, 2.17; chlorine, 0.7; availability of nitrogen, 89.

4735. *SWIFT'S BONE MEAL*. R. N. Stewart & Son, Martinsburg. *Guarantee*: Total phosphoric acid, 25; nitrogen, 2.50; from animal bone. *Found*: Phosphoric acid, total, 27.47; nitrogen, 2.10; availability of nitrogen, 84.

VIRGINIA CAROLINA CHEMICAL COMPANY.

RICHMOND, VA.

4697. *V. C. C. CO.'S GUARANTEED 14 PER CENT ACID PHOSPHATE*. J. H. Phillips & Son, Berkeley Springs. Goods not registered. *Found*: Phosphoric acid, soluble, 11.37; reverted, 3.74; insoluble, 1.52; total, 16.63; available, 15.11.

4791. *ALLISON & ADDISON'S STANDARD ACID PHOSPHATE*. E. W. McNeer, Lowell. *Guarantee*: Phosphoric acid, soluble, 9.00; reverted, 3.00; insoluble, 1.00; total, 13.00; available, 12.00; from phosphate rock. *Found*: Phosphoric acid, soluble, 5.04; reverted, 6.43; insoluble, 3.61; total, 15.08; available, 11.47.

4798. *ALLISON & ADDISON'S LITTLE GIANT GRAIN AND GRASS GROWER*. J. M. Miller & Bro., Ronceverte. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 2.00; total, 10.00; available, 8.00; nitrogen, 0.82; potash, 2.00; phosphoric acid from phosphate rock and animal bone; nitrogen from fish, animal, tankage and cotton-seed meal; potash from muriate, sulphate and double manure salts. *Found*:

Phosphoric acid, soluble, 3.45; reverted, 4.43; insoluble, 2.34; total, 10.22; available, 7.88; nitrogen, 0.92; potash, 2.24; chlorine, 1.9; availability of nitrogen, 74.

4801. *ALLISON & ADDISON'S LITTLE GIANT GRAIN AND GRASS GROWER*. E. W. McNeer, Lowell. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 4.71; reverted, 2.94; insoluble, 2.16; total, 9.81; available, 7.65; nitrogen, 0.80; potash, 2.31; chlorine, 2.9; availability of nitrogen, 80.

4799. *ALLISON & ADDISON'S B. P. POTASH MIXTURE*. E. W. McNeer, Lowell. *Guarantee*: Phosphoric acid, soluble, 7; reverted, 3; insoluble, 1; total, 11; available, 10; potash, 2.00; phosphoric acid from phosphate rock; potash from muriate, sulphate and double manure salt. *Found*: Phosphoric acid, soluble, 3.17; reverted, 6.14; insoluble, 2.19; total, 11.50; available, 9.31; potash, 1.77; chlorine, 3.2.

4790. *S. W. TRAVER'S DISSOLVED BONE PHOSPHATE*. E. W. McNeer, Lowell. *Guarantee*: Phosphoric acid, soluble, 11.00; reverted, 3.00; insoluble, 1.00; total, 15.00; available, 14.00; from phosphate rock. *Found*: Phosphoric acid, soluble, 6.68; reverted, 7.06; insoluble, 2.93; total, 16.67; available, 13.74.

4800. *S. W. TRAVER'S CHAMPION CORN GROWER*. E. W. McNeer, Lowell. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 2.00; total 10.00; available, 8.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from phosphate rock; nitrogen from fish, animal, tankage, and cotton-seed meal; potash from muriate, sulphate and double manure salts. *Found*: Phosphoric acid, soluble, 5.08; reverted, 4.93; insoluble, 2.81; total, 12.82; available, 10.01; nitrogen, 1.01; potash, 1.29; chlorine, 1.3; availability of nitrogen, 80.

4789. *S. W. TRAVER'S CAPITOL DISSOLVED S. C.*

BONE. E. W. McNeer, Lowell. *Guarantee:* Phosphoric acid, soluble, 9.00; reverted, 3.00; insoluble, 1.00; total, 13.00; available, 12.00; from phosphate rock. *Found:* Soluble, 7.43; reverted, 7.13; insoluble, 1.89; total, 16.45; available, 14.56.

4796. *TINSLEY'S ACID PHOSPHATE.* E. W. McNeer, Lowell. Goods not registered. *Found:* Phosphoric acid, soluble, 6.06; reverted, 6.56; insoluble, 2.00; total, 14.62; available, 12.62.

WALKER STRATMANN & COMPANY,
PITTSBURG, PA.

4658. *FOUR FOLD.* Moore & Hibbs, Mannington. *Guarantee:* Phosphoric acid, soluble, 4.00; reverted, 4.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 1.50; potash, 2.00; phosphoric acid, one-third from tankage, two-thirds from mineral phosphates; nitrogen, from blood and tankage; potash from sulphate of potash. *Found:* Phosphoric acid, soluble, 4.81; reverted, 1.88; insoluble, 1.65; total, 8.24; available, 6.69; nitrogen, 1.95; potash, 2.43; chlorine, 2.7; availability of nitrogen, 76.

4670. *FOUR FOLD.* J. S. Liggett, Wellsburg. *Guarantee*—(As above.) *Found:* Phosphoric acid, soluble, 3.99; reverted, 1.96; insoluble, 1.93; total, 7.88; available, 5.95; nitrogen, 1.06; potash, 2.41; chlorine, 2.9; availability of nitrogen, 85.

4749. *FOUR FOLD.* J. D. Owens, Weston. *Guarantee*—(As above.) *Found:* Phosphoric acid, soluble, 4.31; reverted, 2.16; insoluble, 1.80; total, 8.29; available, 6.49; nitrogen, 0.96; potash, 2.15; chlorine, 2.8; availability of nitrogen, 86.

4751. *FOUR FOLD.* A. P. Russell & Co., Buckhannon. *Guarantee*—(As above.) *Found:* Phosphoric acid, soluble, 4.29; reverted, 1.71; insoluble, 2.00; total, 2.00; total, 8.47; available, 6.00 nitrogen, 1.16; potash, 2.20; chlorine, 2.7; availability of nitrogen, 82.

4659. *POTATO SPECIAL*. Moore & Hibbs, Mannington. *Guarantee*: Phosphoric acid, soluble, 4.00; reverted, 4.00; insoluble, 2.00; total, 10.00; available, 8.00; nitrogen, 2.50; potash, 6.00; phosphoric acid, two-fifths from tankage, three-fifths from mineral phosphates; nitrogen from tankage and blood; potash from muriate of potash. *Found*: Phosphoric acid, soluble, 3.61; reverted, 3.48; insoluble, 2.94; total, 10.03; available, 7.09; nitrogen, 2.53; potash, 5.86; chlorine, 0.9; availability of nitrogen, 89.

4668. *POTATO SPECIAL*. J. S. Liggett, Wellsburg. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 4.29; reverted, 3.44; insoluble, 3.57; total, 11.30; available, 7.73; nitrogen, 2.69; potash, 4.35; chlorine, 1.3; availability of nitrogen, 88.

4772. *POTATO SPECIAL*. Thomas Nuzum, Grafton. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 3.35; reverted, 3.36; insoluble, 3.04; total, 9.75; available, 6.71; nitrogen, 2.38; potash, 5.20; chlorine, 0.9; availability of nitrogen, 90.

4660. *HELP MATE*. Moore & Hibbs, Mannington. *Guarantee*: Phosphoric acid, soluble, 7.00; reverted, 5.00; insoluble, 1.00; total, 13.00; available, 12.00; from mineral phosphate. *Found*: Phosphoric acid, soluble, 5.59; reverted, 4.62; insoluble, 2.29; total, 12.50; available, 10.21.

4669. *HELP MATE*. J. H. Liggett, Wellsburg. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 6.05; reverted, 5.93; insoluble, 2.35; total, 14.33; available, 11.98.

4753. *HELP MATE*. J. D. Owens, Weston. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 6.00; reverted, 4.13; insoluble, 2.69; total, 12.82; available, 10.13.

4667. *GRAIN KING*. J. S. Liggett, Wellsburg. *Guarantee*: Phosphoric acid, soluble, 5.00; reverted, 4.00; insoluble, 1.00; total, 10.00; available, 9.00; nitrogen, 0.82; potash, 4.00;

phosphoric acid, one-fifth from tankage; four-fifths from mineral phosphate; nitrogen from tankage and blood; potash from muriate of potash. *Found*: Phosphoric acid, soluble, 4.48; reverted, 2.42; insoluble, 2.23; total, 9.13; available, 6.90; nitrogen, 1.10; potash, 1.99; chlorine, 21; availability of nitrogen, 82.

4754. *GRAIN KING*. J. D. Owens, Weston. *Guarantee*: — (As above.) *Found*: Phosphoric acid, soluble, 5.14; reverted, 1.96; insoluble, 1.36; total, 8.46; available, 7.10; nitrogen, 0.87; potash, 1.63; chlorine, 2.4; availability of nitrogen, 68.

4755. *GRAIN KING*. A. P. Russell & Co., Buckhannon. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 5.26; reverted, 1.72; insoluble, 1.41; total, 8.39; available, 6.98; nitrogen, 1.10; potash, 1.62; chlorine, 2.4; availability of nitrogen, 78.

4671. *GRAIN MANURE*. J. S. Liggett, Wellsburg. *Guarantee*: Phosphoric acid, soluble, 4.00; reverted, 4.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 0.82; potash, 1.00; phosphoric acid, one-fifth from tankage; four-fifths from mineral phosphate; nitrogen from tankage and blood; potash from sulphate of potash. *Found*: Phosphoric acid, soluble, 4.58; reverted, 1.93; insoluble, 1.93; total, 8.44; available, 6.51; nitrogen, 0.93; potash, 1.45; chlorine, 2.6; availability of nitrogen, 79.

4672. *PURE RAW BONE MEAL*. J. S. Liggett, Wellsburg. *Guarantee*: Total phosphoric acid, 22.00; nitrogen, 3.25; from bone. *Found*: Total phosphoric acid, 21.16; nitrogen, 3.21; availability of nitrogen, 87.

4750. *BIG BONANZA*. A. P. Russell & Co., Buckhannon. *Guarantee*: Phosphoric acid, soluble, 4.05; reverted, 4.05; insoluble, 1.00; total, 10.00; available, 9.00; nitrogen, 1.50; potash, 4.00; phosphoric acid, one-third from tankage, two-thirds from mineral phosphates; nitrogen from blood and tankage; potash

from muriate of potash. *Found*: Phosphoric acid, soluble, 3.90; reverted, 3.03; insoluble, 2.05; total, 9.07; available, 7.02; nitrogen, 1.69; potash, 3.91; chlorine, 1.0; availability of nitrogen, 87.

4752. *PHOSPHORIC ACID AND POTASH*. J. D. Owens, Weston. *Guarantee*: Phosphoric acid, soluble, 5.50; reverted, 4.50; insoluble, 1; total, 11; available, 10; potash, 2; phosphate from mineral phosphate; potash from sulphate of potash. *Found*: Phosphoric acid, soluble, 5.21; reverted, 3.23; insoluble, 1.92; total, 10.36; available, 8.44; potash, 1.87; chlorine, 3.1.

ROBT. A. WOOLDRIDGE COMPANY,

BALTIMORE, MD.

4717. *FLORIDA ACID PHOSPHATE*. Griffith & Howell, Belington. *Guarantee*: Phosphoric acid, available, 14.00. from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 11.71; reverted, 3.87; insoluble, 1.05; total, 16.63; available, 15.58.

4725. *GERMAN POTASH MIXTURE*. Griffith & Howell, Belington. *Guarantee*: Phosphoric acid, available, 10.00; potash, 2.00; phosphoric acid, from dissolved phosphate rock; potash from German kainit. *Found*: Phosphoric acid, soluble, 7.46; reverted, 4.36; insoluble, 0.76; total, 12.58; available, 11.82; potash, 2.16; chlorine, 4.3.

4726. *LIBERTY BELL POTASH MIXTURE*. Griffith & Howell, Belington. *Guarantee*: Phosphoric acid, available, 12.00; potash, 3.00; phosphoric acid, from dissolved phosphate rock; potash from kainit and manure salts. *Found*: Phosphoric acid, soluble, 9.81; reverted, 2.19; insoluble, 0.46; total, 12.36; available, 11.90; potash, 3.09; chlorine, 3.0.

BRANDS FOUND DEFICIENT OR CONTRARY TO GUARANTEE.

The results of the analyses of fertilizers found on sale in the State show the following brands to have fallen short or to be contrary to guarantee, as stated blow:

4786. CANTON CHEMICAL SOL. BONE AND POTASH. *Guarantee*: Potash, 2.00. *Found*: 1.71.

4701. CANTON CHEMICAL POTATO MANURE. *Guarantee*: Potash, 5.00. *Found*: 4.67

4785. CANTON CHEMICAL POTATO MANURE. *Guarantee*: Potash, 5.00. *Found*: 4.86.

4699. CANTON CHEMICAL SOLUBLE ALKALINE BONE. *Guarantee*: Potash, 3.00. *Found*: 2.67.

4765. CLEVELAND DRYER FOREST CITY BUCKLEY. *Guarantee*: Available, 9.00. *Found*: 8.58. *Guarantee*: Nitrogen, 2.47. *Found*: 1.92

4724. LAZARETTO HIGH GRADE DIS. BONE PHOSPHATE AND POTASH. *Guarantee*: Potash, 5.00. *Found*: 4.70.

4762. LAZARETTO SPECIAL POTATO FERTILIZER. *Guarantee*: Available, 8.00. *Found*: 7.19.

4748. BAUGH'S CORN FERTILIZER. *Guarantee*: Potash, 4.00. *Found*: 2.38.

4747. BAUGH'S SPECIAL POTATO MANURE. *Guarantee*: Potash, 10.00. *Found*: 7.39 *Guarantee*: Sulphate, muriate and kainit. *Found*: Muriate.

4757. BOWKER'S HARVEST BONE. *Guarantee*: Available, 8.00. *Found*: 7.41.

4794. *BOWKERS DIS. BONE AND POTASH. Guarantee: Muriate. Found: Kainit.*

4673. *MARIETTA POTATO AND TRUCK SPECIAL. Guarantee: Nitrogen, 3.00. Found: 1.56. Guarantee: Potash, 5.00. Found: 4.66.*

4674. *MARIETTA CORN, OATS AND WHEAT GROWER. Guarantee: Nitrogen, 2.00. Found: 1.69. Guarantee: Sulphate of potash. Found: Muriate.*

4705. *MILLER'S W. AND A. GERMAN ALKALINE MIXTURE. Guarantee: Available, 10.00. Found, 8.52.*

4706. *MILLER'S W. AND A. TIGER BONE STOCK PHOSPHATE. Guarantee: Potash, 5.00. Found: 4.63.*

4707. *MILLER'S W. AND A. SPECIAL POTATO AND TOMATO GROWER. Guarantee: Potash, 5.00. Found: 4.53.*

4733. *BALTIMORE PULVERIZING CO., SPECIAL SPRING MIXTURE. (Not registered.)*

4727. *PIEDMONT POTATO PRODUCER. Guarantee: Potash, 6.00. Found: 5.61.*

4778. *SWIFT'S POTATO AND TOBACCO GROWER. Guarantee: Nitrogen, 3.25. Found: 2.72. Guarantee: Potash, 5.00. Found: 4.44. Old tags.*

4781. *SWIFT'S SUPERPHOSPHATE. Guarantee: Nitrogen, 1.64. Found: 1.46. Guarantee: Available, 8.00. Found: 7.69.*

4734. *SWIFT'S SUPERPHOSPHATE. Guarantee: Nitrogen, 1.64. Found: 1.53. Guarantee: Available, 8.00. Found: 7.58.*

4735. *SWIFT'S BONE MEAL. Guarantee: Nitrogen, 2.50. Found: 2.10.*

4791. ALLISON & ADDISON'S STANDARD ACID PHOSPHATE. *Guaranteed*: Available, 12.00. *Found*: 11.47.

4799. ALLISON & ADDISON'S B. P. POTASH MIXTURE. *Guarantee*: Available, 10.00. *Found*, 9.31. *Guarantee*: Potash, 2.00. *Found*: 1.77. *Guarantee*: Muriate, sulphate and double manure salt. *Found*: Kainit.

4796. TINSLEY'S ACID PHOSPHATE. (V. C. C. CO.)
Not registered nor tagged.

WALKER, STRATMAN & COMPANY'S GOODS.

4658. FOUR FOLD. *Guarantee*: Available, 8.00. *Found*: 6.69. *Guarantee*: Sulphate of potash. *Found*: Kainit.

4670. FOUR FOLD. *Guarantee*: Available, 8.00. *Found*: 5.95. *Guarantee*: Nitrogen, 1.50. *Found*: 1.06. *Found*: Kainit.

4749. FOUR FOLD. *Guarantee*: Available, 8.00. *Found*: 6.49. *Guarantee*: Nitrogen, 1.50. *Found*: 0.96. *Found*: Kainit.

4751. FOUR FOLD. *Guarantee*: Available, 8.00. *Found*: 6.00. *Guarantee*: Nitrogen, 1.50. *Found*: 1.16. *Found*: Kainit, or low grade muriate.

4659. POTATO SPECIAL. *Guarantee*: Available, 8.00. *Found*: 7.09.

4668. POTATO SPECIAL. *Guarantee*: Available, 8.00. *Found*: 7.73. *Guarantee*: Potash, 6.00. *Found*: 4.35.

4772. POTATO SPECIAL. *Guarantee*: Available, 8.00. *Found*: 6.71. *Guarantee*: Potash, 6.00. *Found*: 5.20.

4660. HELP MATE. *Guarantee*: Available, 12.00. *Found*: 10.21.

4753. *HELP MATE.* *Guarantee:* Available, 12.00.
Found: 10.13.

4667. *GRAIN KING.* *Guarantee:* Available, 9.00.
Found: 6.90. *Guarantee:* Potash, 4.00. *Found:* 1.99.
 From low grade muriate.

4754. *GRAIN KING.* *Guaranteed:* Available, 9.00.
Found: 7.10. *Guarantee:* Potash, 4.00. *Found:* 1.63.
 From low grade muriate.

4755. *GRAIN KING.* *Guarantee:* Available, 9.00
Found: 6.98. *Guarantee:* Potash, 4.00. *Found:* 1.62.
 From low grade muriate.

4671. *GRAIN MANURE.* *Guarantee:* Available, 8.00.
Found: 6.51. *Guarantee:* Sulphate of potash. *Found:* Low
 grade muriate.

4672. *PURE RAW BONE MEAL.* *Guarantee:* Total,
 22.00. *Found:* 21.16.

4750. *BIG BONANZA.* *Guarantee:* Available, 9.00.
Found: 7.02.

4752. *PHOSPHORIC ACID AND POTASH.* *Guaran-*
tee: Available, 10.00. *Found:* 8.44. *Guarantee:* Sulphate
 of potash. *Found:* Kainit.

*4688. *ARMOUR'S HIGH GRADE POTATO.* *Guaran-*
tee: Muriate and sulphate. *Found:* Low grade sulphate.

*4687. *ARMOUR'S WHEAT, CORN AND OATS SPEC-*
IAL. *Guarantee:* Muriate, sulphate and kainit. *Found:*
 low grade muriat.

*Guarantees concerning sources of potash not specific. In the fu-
 ture, affidavits, to be accepted, must be fully explicit in all required
 details.

*4690. *ARMOUR'S GRAIN GROWER.* *Guarantee:* Muriate, sulphate and kainit. *Found:* Kainit.

*4798. *ALLISON & ADDISON LITTLE GIANT GRAIN AND GRASS GROWER.* *Guarantee:* Muriate, sulphate, and double manure salts. *Found:* Low grade muriate.

*4801. *ALLISON & ADDISON LITTLE GIANT GRAIN AND GRASS GROWER.* *Guarantee:* Muriate, sulphate and double manure salts. *Found:* Low grade muriate.

*4800. *S. W. TRAVERS' CHAMPION CORN GROWER.* *Guarantee:* Muriate, sulphate and double manure salts. *Found:* Muriate.

4712. *BRADLEY'S BEAN AND POTATO.* (Not tagged.)

4674. *DETRICK'S SOL. BONE AND POTASH.* (Not tagged.)

4792. *A. A. C. CO.'S REGULAR CORN MIXTURE.* (Not tagged.)

Besides the above a number of brands are deficient 0.1 per cent or less in potash. In very many cases, especially on A. A. Co.'s goods, the excessive amount of chlorine present indicates the use of an inferior grade of kainit. where kainit is guaranteed the chlorine may not exceed 2.8 per cent up to 4.5 per cent. This is frequently much exceeded.

*Guarantees concerning sources of potash not specific. In the future, affidavits, to be accepted, must be fully explicit in all required details.

REGISTERED BRANDS.

FOR 1903.

The following is a list of the brands which were registered as required by law, up to date of Sept. 1st, 1903:

AMERICAN AGRICULTURAL CHEMICAL COMPANY.

BALTIMORE SALES DEPARTMENT.

Superphosphate.

Gem Alkaline Bone.

Regular Corn Fertilizer.

Dissolved Animal Bone.

Bone Meal.

Fine Ground Bone.

Pure Ground Bone.

W. & A. Special Fall Mixture.

Kainit.

Orchilla Guano.

Ruth's Dissolved Bone Phosphate.

Reliable.

Bradley's Alkaline Bone.

Bradley's Dissolved Bone with Potash.

Bradley's Bean and Potato Potash.

Bradley's Niagara Phosphate.

Bradley's Alkaline Bone.

Canton Chemical Eagle Phosphate.

Canton Chemical Potato Manure.

Canton Chemical Resurgam Guano.

Canton Chemical Game Guano.

Canton Chemical C. C. C. Special Compound.

Canton Chemical Special Wheat, Corn and Grass Fertilizer.

Canton Chemical "Harrow" Brand Crop Grower.

Canton Chemical Soluble Bone and Potash.

Canton Chemical Dissolved S. C. Bone.
Canton Chemical Soluble Alkaline Bone.
Canton Chemical Patron's Bone Mixture.
Cleveland Dryer Forest City Buckeye.
Cleveland Dryer Phospho Bone.
Cleveland Dryer Horse Head Phosphate.
Cleveland Dryer Horse Head Phosphate with Potash.
Cleveland Dryer XXX Phosphate.
Detrick Quick Step Bone Phosphate for Potatoes and Tobacco.
Detrick Soluble Bone Phosphate and Potash.
Detrick Kangaroo Komplete Kom-pound.
Detrick Dissolved S. C. Bone.
Detrick Standard Potash Fertilizer.
Detrick Corn and Oats Fertilizer.
Detrick Imperial Compound.
Detrick Paragon Ammoniated Dissolved Bone Phosphate and Potash.
Lazaretto Bone Compound.
Lazaretto Special Potato Fertilizer.
Lazaretto Ammoniated Bone Phosphate.
Lazaretto Excelsior A. A. A.
Lazaretto Dissolved Bone Phosphate and Potash.
Lazaretto High Grade Dissolved Bone and Potash.
Lazaretto Dissolved Bone Phosphate.
Maryland Ammoniated Bone.
Maryland O. K. Ammoniated Fertilizer.
Maryland Tornado Fertilizer.
Maryland Bono Super-phosphate.
Maryland Dissolved S. C. Phosphate.
Pacific Nobsque Guano.
Pacific A. No. 1 Phosphate.
Pacific Potato Phosphate.
Pacific Dissolved Bone and Potash.
Pacific Dissolved Bone Phosphate.

Reese's Half and Half.

Reese's Elm Phosphate.

Reese's High Grade Potash Mixture.

Susquehannah Alkaline Bone Phosphate.

Susquehannah Potato Phosphate.

Susquehannah XXV Phosphate.

Susquehannah Superior Rock Phosphate.

Williams' & Clark's Royal Bone Phosphate.

Williams' & Clark's Prolific Crop Producer.

Williams' & Clark's Good Grower Potato Phosphate.

Williams' & Clark's Dissolved Bone and Potash.

Williams' & Clark's Acorn Acid Phosphate.

Zell's Special Compound for Potatoes and Vegetables.

Zell's Ammouniated Bone Super-phosphate.

Zell's Economizer Phosphate.

Zell's Little Giant.

Zell's Electric Phosphate.

Zell's Dissolved Bone Phosphate.

Zell's Dissolved S. C. Phosphate.

Great Eastern Unammoniated Wheat Special.

Great Eastern Corn Fertilizer.

Great Eastern Vegetable, Vine and Tobacco.

Great Eastern English Wheat Grower.

Great Eastern Soluble Bone and Potash.

Great Eastern Dissolved Bone.

Great Eastern Wheat Special.

M. E. Wheeler & Co.'s Corn Fertilizer.

M. E. Wheeler & Co.'s Potato Manure.

M. E. Wheeler & Co.'s Royal Wheat Grower.

M. E. Wheeler & Co.'s Wheat and Clover Fertilizer.

M. E. Wheeler & Co.'s Electrical Dissolved Bone.

M. E. Wheeler & Co.'s Unammoniated Wheat Grower.

THE ABBOTT & MARTIN RENDERING COMPANY,

COLUMBUS, OHIO.

Ideal Grain Grower.

Tennessee Phosphate.
Hercules Phosphate.
Star Phosphate.
Peerless Bone and Potash.
Harvest King.
Abbott's Potash and Tobacco Special.
Fine Raw Bone Meal.

ARMOUR FERTILIZER WORKS,
BALTIMORE, MD.

Star Phosphate.
Phosphate and Potash No. 1.
Ammoniated Bone with Potash.
High Grade Potato.
Grain Grower.
Wheat, Corn and Oats Special.
Cereal Phosphate.
Bone Meal.
Wheat Special.
Acid Phosphate.

THE BALTIMORE PULVERIZING COMPANY,
BALTIMORE, MD.

Special Fall Mixture.
Farmer's Favorite Fertilizer.
S. C. Bone.

BAUGH & SONS COMPANY.
BALTIMORE, MD.

Baugh's Corn Fertilizer.
Baugh's Potato Fertilizer.
Baugh's Fish Mixture.
Baugh's Special Potato Manure.

Baugh's Raw Bone Super-phosphate.
Baugh's Peninsula Grain Producer.
Baugh's Export Bone with Potash.
Baugh's Warranted Pure Bone Meal.
Baugh's Dissolved Animal Bones.
Baugh's Double Eagle Phosphate.
Baugh's General Crop Grower.
Baugh's Animal Bone and Potash Compound.
Baugh's Wheat Fertilizer.
Baugh's Soluble Alkaline Super-phosphate.
Baugh's Soluble Alkaline Super-phosphate.
Baugh's High Grade Acid Phosphate or Dissolved S. C. Rock.

BOWKER FERTILIZER COMPANY.

BOSTON, MASS.

Bowker's Harvest Bone.
Bowker's Dissolved Bone with Potash.
Bowker's Soluble Bone.,
Bowker's Bone Meal.
Bowker's Potash Fertilizer.

CHICAGO FERTILIZER COMPANY,

CHICAGO, ILL.

Bone, Blood and Potash.
Wheat and Corn Special.
No. 1 Acid Phosphate.
Diamond Phosphate.
Calumet Phosphate.
Western Bone Black and Potash.
Potato, Truck and Tobacco Fertilizer.
Chicago Raw Bone.

CINCINNATI PHOSPHATE COMPANY,
CINCINNATI, OHIO.

Capitol Wheat Grower.
Capitol Grain and Grass Grower.
Capitol Dissolved Bone and Potash.
Capitol Ground Bone.
Capitol Tobacco Food.

GRIFFITH & BOYD.

BALTIMORE, MD.

Griffith's & Boyd's Original Super-phosphate.
Griffith's & Boyd's Pure Fine Ground Bone Meal.
Fruit Tree Fertilizer.
Stable Manure Fertilizer.
Farmer's Potato Manure.
Spring Crop Grower.
Ammoniated Bone Phosphate.
Harvest Queen Phosphate.
Fish, Bone and Potash.
Cereal Bone Plant Food.
Valley Fertilizer.
Soft Ground Bone Meal.
Soft Ground Bone Meal.
Griffith & Boyd's Grain and Grass Producer.
XX Potash Manure.
Special Grain Grower.
Peerless Fertilizer.
Double Strength Tobacco Grower.
High Grade Acid Phosphate.
Pure Dissolved Animal Bone.
Royal Potash Guano.
Farmer's Improved Phosphate.

JARECHI CHEMICAL COMPANY,
SANDUSKY, OHIO.

No. 1 Fish Guano.
C. O. D. Phosphate.
Ground Bone.
Dissolved Bone with Potash.
Fish and Potash, Potato and Tobacco Food.
Phosphate and Potash.

MARIETTA BONE AND PHOSPHATE COMPANY,
MARIETTA, OHIO.

“Horse” Brand Pure Raw Bone.
“Horse” Brand Potato and Truck Special.
“Horse” Brand Corn, Oats and Wheat Grower.
“Horse” Brand Acid Phosphate.
“Horse” Brand Pure Ground Bone.
“Horse” Brand XX Special.

D. B. MARTIN COMPANY,
PHILADELPHIA.

Dissolved Organic Compound.
Sure Grower.
Crop Producer.
Corn and Oats Special.
Claremont Vegetable Grower.
Steamed Bone.
Acid Phosphate.
Extra Bone and Potash.

MILLER FERTILIZER COMPANY,
BALTIMORE, MD.

Wooldridge & Anderson's Old Hickory Phosphate.
Wooldridge & Anderson's Faultless Ammoniated Bone
Phosphate.
Wooldridge & Andersson's Tiger Bone Stock Phosphate.

Wooldridge & Anderson's Special Potato and Tomato Grower.

Wooldridge & Anderson's "F. F. V." (Flesh and Fish Vegetator.)

Wooldridge & Anderson's Battle Axe Potash Mixture.

Wooldridge & Anderson's German Alkaline Mixture.

Hustler Phosphate.

S. C. Rock.

W. G. Phosphate.

Special Tobacco Grower.

Standard Phosphate.

Ground Bone.

G. OBER & SONS COMPANY,

BALTIMORE, MD.

Ober's Dissolved Animal Bone.

Ober's Farmer's Standard Ammoniated Phosphate.

Ober's Farmer's Mixture.

Ober's Independent Ammoniated Super-phosphate.

Ober's Dissolved Bone Phosphate.

Ober's Dissolved Bone Phosphate and Potash.

Ober's High Grade Acid Phosphate.

Ober's Pure Raw Bone Meal.

Ober's Special Mixture for Wheat.

Ober's S. & S. Special Wheat Compound.

Ober's Shenandoah Bone Phosphate.

Langdon's Mixture.

OHIO FARMERS' FERTILIZER COMPANY,

COLUMBUS, OHIO.

Raw Bone Meal.

Corn, Oats and Wheat Fish Guano.

General Crop Fish Guano.

Wheat Maker and Seeding Down.
Potato and Tobacco Special.
Superior Phosphate.
Soluble Bone and Potash.
Alkaline Bone.

PIEDMONT MT. AIRY GUANO COMPANY,
BALTIMORE, MD.

Piedmont Raw Bone Mixture.
Piedmont Royal Ammoniated Bone and Potash.
Piedmont Dissolved Bone Phosphate, Potash Goods.
Piedmont High Grade S. C. Bone.
Piedmont Potato Producer.
Piedmont "Plow" Brand.
Piedmont Special Potash Mixture.
Piedmont Soluble Bone and Potash.
Piedmont Harvest Queen.
Piedmont Farmer's Favorite.
Levering's Excelsior.

POWHATAN CHEMICAL COMPANY,
RICHMOND, VIRGINIA.

Magic Wheat Grower.
Magic Special Fertilizer.
Magic Ammoniated Phosphate.
Magic Bone and Potash Mixture.
Bone and Potash Mixture.
Virginia Dissolved Bone.
High Grade Acid Phosphate.

RASIN MONUMENTAL COMPANY,
BALTIMORE, MD.

Rasin's XXX Fertilizer.
Rasin's Empire Guano.
Rasin's Bone and Potash.

Rasin's Acid Phosphate.
Rasin's Dissolved Bone.
William Penn Crop Grower.

RICHMOND GUANO COMPANY,
RICHMOND, VIRGINIA.

"Premium" Brand Fertilizer.
"Premium" Brand Wheat Grower.
Bone Mixture.
Bone and Potash Mixture.
High Grade Acid Phosphate.
Dissolved S. C. Phosphate.

SCIENTIFIC FERTILIZER COMPANY,
PITTSBURG, PENN.

Scientific Phosphate and Potash.
Scientific Dissolved Bone.
Scientific Wheat and Clover.
Scientific Bone, Meat and Potash.
Scientific Bone and Potash.
Scientific Economy.
Scientific Potato.
Scientific Corn and Grain.
Scientific Grain Grower.
Bone and Meat.
Pure Raw Bone Meal.
High Grade Acid Phosphate.

SWIFT & COMPANY,
CHICAGO, ILL.

Swift's Superphosphate.
Swift's Complete Fertilizer.

Swift's Special Bone Meal.
Swift's Pure Raw Bone Meal.
Swift's Champion Wheat Grower.
Swift's Potato and Tobacco Grower.
Swift's Dissolved Animal Bone.
Swift's Bone Meal and Blood.

I. P. THOMAS & COMPANY,
PHILADELPHIA, PENN.

S. C. Phosphate.
Alkaline Bone.

TUSCARORA FERTILIZER COMPANY,
BALTIMORE, MD.

Acid Phosphate.
Bone and Potash.
Ammoniated Phosphate.
Special Crop Grower.
Tuscarora Standard.

VIRGINIA-CAROLINA CHEMICAL COMPANY,
RICHMOND, VIRGINIA.

Allison & Addison Star Brand Guano.
Allison & Addison Little Giant Grain and Grass Grower.
Allison & Addison Standard Acid Phosphate.
Allison & Addison B. P. Potash Mixture.
J. C. Tinsley's Bone and Potash Mixture.
S. W. Travers' Wheat and Grass Fertilizer.
S. W. Travers' Beef, Blood and Bone Fertilizer.
S. W. Travers' Champion Corn Grower Fertilizer.
S. W. Travers' Capitol Bone-Potash Compound.
S. W. Travers' Capitol Dissolved S. C. Bone.
S. W. Travers' Dissolved Bone Phosphate.
Standard Bone and Potash.
Special Compound for Wheat.

WALKER, STRATMAN & COMPANY,
PITTSBURG, PENN.

Phosphoric Acid and Potash.
Help Mate.
Pure Raw Bone Meal.
Bone and Meat.
Grain King.
Acid Phosphate.
Meat, Blood and Bone with Potash.
Potash and Bone Phosphate.
Big Bonanza.
Potato Special.
Four Fold.
Grain Manurè.

ROBERT A. WOOLDRIDGE COMPANY,
BALTIMORE, MD.

Florida Acid Phosphate.
German Potash Mixture.
Liberty Bell Potash Mixture.
Champion Giant Phosphate.
Chieftain Bone Stock Phosphate.
Triumph Bone Stock Phosphate.
Special Potato Fertilizer.
Pure Raw Bone.

LIST OF AGENTS
WHOSE STOCK WAS SAMPLED DURING 1903.

Armstrong, Chrislip & Co.,	Buckhanon
C. H. Becker	Wheeling
Bishop & Barbe	Jane Lew
W. H. Brady	Berkeley Springs
R. B. Bolyard,	Fetterman
W. H. Bailey Hardware Co.,	Morgantown
A. G. Chrislip	Philippi

De Berry & Bishop	Terra Alta
Drummond & Co.,	Buckhannon
Griffith & Howell	Belington
Harrisville Mill Co.,	Harrisville
J. M. Hagerty	Farmington
E. Hunter	Berkeley Springs
Johnson & Gwinn	Alderson
R. A. Johnson	Parkersburg
J. S. Liggett	Wellsburg
J. E. Loudermilk	Ronceverte
R. T. Lowndes	Clarksburg
J. S. Loughrie	Rowlesburg
L. P. Licklider	Martinsburg
J. M. Miller & Bro.,	Ronceverte
J. R. Morris	Gath
Moore & Hibbs	Mannington
E. W. McNeer	Lowell
Thomas Nuzum	Grafton
Offut & Lakin	Terra Alta
J. D. Owens	Weston
Philippi Mill Co.,	Philippi
C. Phillips' Sons	Belington
J. H. Phillips' Sons	Berkeley Springs
A. P. Russell & Co.,	Buckhannon
W. F. Sill	Pennsboro
R. N. Stewart & Son	Martinsburg
C. W. Siever	Keyser
Shanklin Bros.	Lowell
Washington & Alexander	Charles Town
J. L. Woodyard	Pruntytown

A complete list of all Potash Salts used in Agriculture and their composition, as calculated from an average of many Analyses.

NAME OF SALTS	SULPHATE OF POTASH K ₂ SO ₄	MURIATE OF POTASH K Cl	SULPHATE OF MAGNESIA Mg SO ₄	CHLORIDE OF MAGNESIA Mg Cl ₂	CHLORIDE OF SODIUM Na Cl	SULPHATE OF LIME Ca SO ₄	Substances Insoluble in Water	WATER	Calculated to Pure Potash K ₂ O	Total per cent. Chlorine	Per Cent. of Chlorine for 1 Per cent. of Potash
In 100 parts are contained											
A. CRUDE SALTS (Natural Products)											
1. Kainit ..	21.3	2.0	14.5	12.4	34.6	1.7	0.8	12.7	12.8	31.2	2.50
2. Carnallit ..	15.5	15.5	21.1	21.5	22.4	1.9	0.5	26.1	9.8	36.6	3.90
3. Sylvinit ..	1.5	26.3	2.4	2.6	56.7	2.8	3.2	4.5	17.4	50.1	2.90
B. CONCENTRATED SALTS (Manufactured Products) ..											
a. Sulphates, nearly free from Chloride											
1. Sulphate of Potash ... } 90 per cent	97.2	0.3	0.7	0.4	0.2	0.3	0.2	0.7	52.7	0.6	0.01
2. Sulphate of Potash-Magnesia	90.6	1.6	2.7	1.0	1.2	0.4	0.3	2.2	49.9	2.1	0.04
b. Salts containing Chloride ...	50.4	—	34.0	—	2.5	0.9	0.6	11.6	27.2	1.5	0.06
3. Muriate of Potash ... } 80-85 per cent	—	91.8	0.2	0.2	7.1	—	0.2	0.6	57.9	48.1	0.80
4. Manure-Salts containing at least 20 per cent Potash ..	1.7	83.5	0.4	0.3	14.5	—	0.2	1.1	52.7	47.3	0.90
5. Manure-Salts, with at least 30 per cent Potash	2.0	72.5	0.8	0.6	21.2	0.2	0.5	2.5	46.7	47.7	1.00
	1.2	31.6	10.6	5.3	40.2	2.9	5.3	4.2	21.0	43.3	2.20
		47.6	9.4	4.8	26.2	2.2	3.5	5.1	30.6	42.0	1.40

AN ACT

Concerning Commercial Fertilizers, State of West Virginia.

AN ACT concerning commercial fertilizers, and repealing chapter seventy-two of the Acts of the Legislature of West Virginia, of eighteen hundred and ninety-one.

[Passed February 2d, 1901.]

Be it enacted by the Legislature of West Virginia:

1. Every person who shall sell, offer or expose for sale, or have in his possession with intent to sell in this State, any commercial fertilizer or manure, shall affix conspicuously to every package thereof a plainly printed statement, clearly and truly certifying the number of net pounds of fertilizer in a package, the name, brand or trade-mark under which the fertilizer is sold, the name and address of the manufacturer, the place of manufacture, and stating the percentage of nitrogen or its equivalent in ammonia: of potash, soluble in distilled water; and of phosphoric acid in available form, soluble in distilled water, reverted, as well as the total phosphoric acid, and the materials from which said constituents are derived. In the case of those fertilizers which consist of other cheaper materials, said labels shall give correct general statement of the composition and ingredients of the elements relied upon, contained in the fertilizer which it accompanies.

2. Before any commercial fertilizer is sold, offered or exposed for sale in this State, the manufacturer, importer or party who causes it to be sold, exposed or offered for sale, shall file with the Director of the West Virginia Agricultural Experiment Station, under oath, the statement required to be affixed under section one of this act.

Provided, That when the manufacturer of any brand of fertilizer or manure shall file said sworn statement no agent or dealer shall be required to file such statement. The making of affidavit required by this chapter falsely shall be perjury.

3. The manufacturer, importer, agent or seller of any brand of commercial fertilizer or material used for manurial purposes, shall pay for each brand at the time he files a sworn statement required by section two of this act a registration fee of one dollar per annum.

4. The registration fee required to be paid by section three of this act, shall be paid to the treasurer of the West Virginia University for the use of the Agricultural Experiment Station, and the party making such payment shall take from the said treasurer triplicate receipts therefor, one of which he shall retain, and the other shall be deposited, one with the Director of the Agricultural Experiment Station, and the other with the secretary of the Board of Regents, and by them filed and preserved in their respective offices.

5. Immediately after the filing of the receipts aforesaid, with the Director of the Agricultural Experiment Station, said Director shall issue a certificate to the party making such payment, stating the amount of fees paid, and the name, brand or trade-mark under which the fertilizer is sold, the name and address of the manufacturer or importer, the place of manufacture, and that the applicant for said certificate is authorized to sell said fertilizer within the State of West Virginia for the period of one year from the first day of January to the thirty-first day of December, inclusive. Said certificates may be issued at any time for and during the current year, and may be issued during the month of December for the year commencing on the first day of January thereafter.

6. It shall be the duty of the Director of the West Virginia Agricultural Experiment Station to print or cause to be printed a label or tag setting forth the sworn statement required in section two of this act. The Director shall furnish such labels or tags in quantities in one hundred or multiples thereof, to any person complying with the requirements of this act, and desiring to sell, offer or expose for sale any commercial fertilizer in this State, and shall receive pay therefor at the rate of forty cents for such number of labels or tags as may be required to be affixed to one ton of fertilizer, and shall, without delay, pay the same to the treasurer of the West Virginia University, for use of the Agricultural Experiment Station, and take duplicate receipts therefor, one of which he shall retain, and the other he shall deliver to the secretary of the Board of Regents, who shall file and preserve the same in his office.

7. The Board of Regents of the West Virginia University shall expend the money received under the provision of this act in meeting the legitimate expenses of the Station in making analyses of fertilizers, in experimental tests of same, and in such other experimental work and purchases as shall inure to the benefit of the farmers of this State, and shall include in their annual report a statement of the receipts and disbursements thereof.

8. It shall be the duty of the Director of the said Experiment Station, in person or by deputy, to take samples for analysis from any lot or packages of any fertilizer or manure which may be in the possession of any dealer in the State, and he is hereby authorized to prescribe and enforce such rules and regulations as he may deem necessary to carry fully into effect the true intent and meaning of this act; and any agriculturist, purchaser of any fertilizer or manure in this State may take a sample of the same under the rules and regulations of the Director of the said Experiment Station and forward the same to him analysis, and if the Director has reason to believe that the manufacturer of, or dealer in, such fertilizer or manure has made any false or fraudulent representations in regard to said fertilizer or manure, he shall cause the said sample to be analyzed free of charge, and certify the same to the person forwarding the sample. And it shall be the duty of every agent and dealer in fertilizers or manures, within the meaning of this act, in this State, when ordering consignments thereof, to promptly notify the Director of the said Experiment Station of the amount ordered, and the place and approximate time of delivery of said fertilizers and manures.

9. Said Director shall also publish by bulletin, the brand, name and location of the manufacturer and chemical analysis of every fertilizer or manure analysed or caused to be analyzed by him. Said last publication to be made, if practicable, before the time at which said fertilizer is to be applied to the soil.

10. Any manufacturer or vendor of any fertilizer or manure who shall sell or offer or expose for sale any fertilizer or manure without having previously complied with the provisions of this act as hereinbefore set forth, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not less than fifty nor more than five hundred dollars.

11. Any company, firm or corporation who shall wilfully remove from or deface or change any label or tag, or brand affixed to any package of fertilizer under the provisions of this act before such fertilizer has been used for manurial purposes, or who shall sell such fertilizer without such label or tag being affixed thereto at the time of the sale, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be fined not less than ten nor more than fifty dollars for each offense.

12. Any company, firm or person who shall remove from or cause to be removed from any package of commercial fertilizer or manure any statement, label or tag affixed thereto under the provisions of this act, and affix or cause the same to be affixed to any other package of commercial fertilizer or manure, shall

be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not less than ten nor more than fifty dollars for each offense.

13. Any company, firm or person violating any of the provisions of this act, or who fails to comply with any of the requirements of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall, when no other penalty is prescribed, be fined not less than ten nor more than one hundred dollars for each offense. But this act shall not be construed to apply to any one who manufactures fertilizers for his own use and not for sale.

14. The Director of said Experiment Station shall report to the prosecuting attorney of the county where the offense was committed all violations of the provisions of this act, and failure to comply therewith, and a copy of any label, statement or tag required to be filed with said Director or prepared by him, and any analysis made or caused to be made by him, when duly certified by said Director, shall be received in evidence in any prosecution or suit for any violation of the provisions of this act.

I, Harry Shaw, Clerk of the House of Delegates of West Virginia, hereby certify that the paper hereto annexed is a true copy of an Act of the Legislature of West Virginia passed on the second day of February, 1901, and approved by the Governor on the ninth day of February, 1901; and that the same takes effect ninety days from the date of its passage.

Given under my hand this March 20th, 1901.

HARRY SHAW, ...

Clerk of the House of Delegates.