

(E. C. Cooper, Animal Husbandman)  
(A. H. Cohaner, Assistant Animal Husbandman)  
(W. H. Burruse, Assistant Animal Husbandman)  
(Dungan McKinsey, Swine Husbandman)

#### LIVE STOCK.

The live stock industry is one of the principal factors in the Agriculture of the State. Its development during the past five years has been rapid, the value of all live stock on farms increasing from \$64,000,000 for the average of the four-year period of 1915 to 1917 to a total of \$134,000,000 for January 1, 1919. The territory west of the Blue Ridge Mountains contains some of the best grazing lands in the United States and throughout this general area the production of cattle and sheep is extremely important. The Tidewater, Piedmont and Valley sections of Virginia are all admirably adapted to swine production, and in this area the number of hogs raised is increasing rapidly.

#### SCOPE OF WORK.

This project embraces all phases of live stock production with the exception of dairying. The major part of the work has been beef cattle and swine production. The production of sheep and wool, the marketing of wool, and the raising of horses and handling of work horses have also come within the scope of work.

#### PERSONNEL.

The Animal Husbandry work during the fiscal year of 1918-1919 was in charge of E. C. Cooper, Animal Husbandman, A. H. Cohaner acted as Assistant Animal husbandman during the fiscal year with the exception of the time he was in the army service. Dungan McKinsey acted as Swine Husbandman, detailed from the Bureau of Animal Husbandry, during the entire fiscal year. W. H. Burruse acted as Assistant Animal Husbandman from February 1st until June 31st, devoting the larger part of his time to beef cattle Extension work.

#### LIVE STOCK ORGANIZATION.

Organization Work Successful: Believing that the live stock industry could best be promoted through the co-operation of the men interested in live stock production, it has been the policy of this division to promote among farmers and stock men having organizations, a certain definite aim. The results obtained through these associations have been more than satisfactory. The work accomplished has been so important that it is no longer necessary to go into <sup>new</sup> communities and endeavor to promote organization. The farmers in counties not organized see the value of the association, and on their own initiative ask the Extension Service for aid in perfecting organizations in their communities.

Kinds of Associations: The Associations organized through the Extension Service are (1) County Breeders' Associations, (2) County and District Breed Associations, (3) Incorporated Bull Associations and Community Bull Clubs.

County Breeders' Associations: In these associations the farmers and breeders of all classes of live stock form into one organization. The breeds of each class of live stock which are most popular in the county are selected and an effort toward breed standardization is made. In some instances it is found that one breed is popular in one section of the county, and another is equally popular in a different section. In such a case two breeds are adopted.

One of the best examples of a county breeders' association is the one in Loudoun County. This association was organized in 1916 and now practically every owner of pure bred live stock in the county is a member. The breeds adopted were Fercheron horses, Shorthorn cattle, Guernsey cattle and Berkshire and Duroc-Jersey hogs. The work of the association has developed so much that now a salaried manager is employed. A number of carloads of high grade and pure bred stock have been imported, and distributed among the farmers. The county is becoming known throughout the State for its live stock, and large numbers are being sold to other sections. In April, 1919, one car of high grade Guernsey heifers was sold to go to Washington County.

In addition to stock sold at private sale, annual public sales of Percheron horses, Shermey cattle, Duroc-Jersey and Berkshire swine have been held. The active county breeders' associations now in the State are as follows:

Brunswick County Breeders' Association.  
Chesterfield County Breeders' Association.  
Hillsdale County Breeders' Association.  
Loudoun County Breeders' Association.  
Rockingham County Pure Bred Live Stock Association.

County and District Breed Associations: In these associations the breeders of one breed organize into a Breed Association for the promotion of the interests of that breed. One of the best examples of this type of an association in the State is the Lee County Hereford Breeders' Association. This organization was formed in 1915, and has held sales annually. At the time of organization, there were but a few breeders of pure bred Hereford cattle in the county, and less than 100 head of pure bred animals. The membership has gradually increased and now over 1,000 pure bred Herefords are owned by members. As a result of the use of pure bred bulls sold by the Association, white faced steers may be seen grazing on almost every hillside in the county.

During the past year the four associations indicated have been organized. At the present time the active breed associations in the State are:

Apple Grove Holstein-Friesian Breeders' Association.  
Augusta County Holstein-Friesian Breeders' Association.  
Augusta County Shermey Breeders' Association.  
Augusta County Shorthorn Breeders' Association  
Culpeper County Angus Breeders' Association  
Franklin County Holstein-Friesian Breeders' Association.  
Frederick County Holstein-Friesian Breeders' Association  
Fauquier County Hereford Breeders' Association  
Lee County Hereford Breeders' Association.  
Lee County Poland-China Breeders' Association.  
Orange County Duroc-Jersey Breeders' Association  
Pittsylvania County Holstein-Friesian Breeders' Association  
Piedmont Jersey Breeders' Association.  
Page County Shorthorn Breeders' Association  
Page County Duroc-Jersey Breeders' Association.  
\* Rockingham County Duroc-Jersey Breeders' Association.  
Shenandoah County Holstein-Friesian Breeders' Association.  
\* Shenandoah County Shorthorn Breeders' Association  
\* Shenandoah County Poland-China Breeders' Association  
Shenandoah Valley Shorthorn and Polled Durham Breeders' Association.

Northside Dairyway Club  
"Northwest Virginia Northern Breeders' Association."

**State Breeders' Associations:** The State Breeders' Associations are organizations having membership of breeders throughout the State, and are organized to promote the best interests of the breed in the State. The breeders of Hereford, Holstein-Friesian, and Jersey cattle have now organized State Associations. The breeders of Shorthorn and Angus cattle have plans under way to complete organization during the current year. The Hereford breeders held their first Annual Sale at Orange, Virginia on June 17, 1919.

**Incorporated Co-operative Bull Associations:** These organizations are formed as incorporated Stock Companies for the purpose of purchasing pure bred bulls and making their use available to members and farmers in the county. Eight of these associations have been organized in the State in the past four years and have purchased from fifteen to forty pure bred Shorthorn bulls per association. The value of one of these associations to a county is hard to estimate. Basing the increased value of a calf at weaning time sired by a pure bred bull at \$10. more than one sired by a scrub bull, the annual return in some of the counties has been as high as from \$12,000. to \$15,000 per year. As the difference in value becomes greater as the animal grows older and as most of the cattle are not marketed until at least three years of age, the actual return to the county is much greater. During the past year Bull Clubs were organized in Carroll and Bland Counties and at present own 36 bulls. The associations in the State now owning bulls are:

Bland County Live Stock Association.  
Carroll County Live Stock Breeders' Association.  
Giles County Live Stock Breeders' Association.  
Fulaski Pure Bred Live Stock Association.  
Russell County Stock Breeders' Company.  
Scott County Live Stock Association.  
Smyth County Bull Club.  
Tazewell County Pure Bred Shorthorn Association  
Washington County Stock Breeders' Association.

**Community Bull Clubs:** In sections of the State where the live stock industry is not well developed, the best means of introducing pure bred bulls has been found

to go through a small class of farmers living in the same locality who will form a partnership in the purchase of a bull. Each farmer buys stock in the bull in proportion to the number of acres he owns. A number of bulls have been placed in the Eastern part of the State on this plan.

#### PURE BRED SALES.

Probably the best means of keeping up interest in the breed associations, keeping the breeders enthusiastic in the production of pure bred stock, and introducing and distributing pure bred stock throughout the country is by means of the pure bred sale. The staff of the Animal Husbandman Department of the Extension Division has recognized this fact and are helping to promote public sales made up of consignments of pure bred stock from association members. This Division has been responsible either directly or indirectly for the majority of the pure bred live stock sales held in the State the past three years.

A list of the sales supported by the Extension Division the past year are as follows:

Class of Stock	Breed	By Whom	No Sold	Average
Cattle --	Hereford .....	Lee Co. B. Assoc., 1918	42	226.00
Cattle --	Holstein-Friesian	Ya. Holstein-Friesian Club .....	62	225.00
Cattle --	Shorthorn .....	Southwest Va. B. Assoc.	23	195.00
Cattle --	Guernsey .....	London .....	36	245.00
Hogs --	Berkshire .....	London .....	30	110.00
Hogs --	Duroc .....	C. S. Sampler .....	17 (gilts)	110.00
			50 (fall pigs)	23.00
Cattle --	Shorthorn .....	Augusta Co. B. Assoc.	20 (8 mo. calves)	181.00
Cattle --	Hereford .....	Augusta Co. B. Assoc.	26 (8 " "	195.00
Cattle --	Guernsey .....	Augusta Co. B. Assoc.	8 (all ages)	196.00
Hogs --	Duroc, G.I.C. and Berkshires .....		40 (all ages)	45.00

#### DEMONSTRATION PROJECTS

In order to put the Animal Husbandry work on a more definite basis, demonstrations have been outlined to cover the fundamental live stock problems with which the farmer has to deal. Beginning with this year (1918) the County Agent in conference with his district agent is required to select from the outlined demonstration projects those

which are applicable to his county. A list of the projects which have been assigned for use in demonstration work are:

#### CENTRAL LIVE STOCK.

Use of Pure Bred Hires.  
Live Stock.  
Co-operative Pure Bred Consignment Sales.  
Organizations.  
Disease Control.

#### CATTLE

Wintering Stocker Cattle  
Finishing Short Grass Cattle  
Finishing Stocker Cattle  
Finishing Baby Beef.

#### HOGS

Use of balanced Rations:  
(a) For Fattening Animals.  
(b) For Breeding Animals.  
Use of Pasture Crops.  
Use of Self-Feeder  
General Hog Management Demonstration.

#### SHEEP

Management of Breeding Does.  
Importation of Does.  
Marketing wool by pooling.

#### HORSES.

Community Colt Show.

#### CLUB WORK.

The Animal Husbandry Division has co-operated with the State Director of Boys' and Girls' Clubs in developing the Baby Beef and Pig Club work. This division has prepared instructions for the feed, care and management of pigs and calves, assisted in locating and purchasing the animals, helped conduct contests at local, district and State Fairs, and also helped conduct boys' and girls' judging contests. This year (1919) over 600 pigs have been located and purchased for Pig Club members. A detailed report of this work is given in the report of the State Agent.

#### STATE FAIR.

It is the policy of the Animal Husbandry Division to make an exhibit annually

at the Virginia State Fair. In 1918 the space of 10 by 20 feet was used in the exhibit building for this purpose and the exhibit was prepared. However, owing to the epidemic of influenza the State Fair was called off after everything was in readiness for its opening.

#### COUNTY FAIRS.

The Animal Husbandry Division has assisted in promoting county fairs in two ways: First, by assisting in the preparation of premium lists and standardization of the live stock classes, second by furnishing judges in the live stock departments. In cooperation with Mr. C. B. Halston, Secretary of the Virginia Fair Association, a complete live stock classification and premium list adaptable to Virginia Association fairs has been worked out, and through Mr. Halston, recommended to the fair secretaries. This action has been very necessary because of lack of uniformity of classification in the county fairs of the State.

The Division furnished judges for twenty four county fairs and Club contests in 1918.

#### INTERNATIONAL TRIP.

As a means of promoting interest in live stock in the State, the Division in co-operation with the Norfolk and Western Railroad has organized a party to make a trip to the International Live Stock Show held annually in December in Chicago. A trip of this character is strictly educational and at the same time furnishes an inspiration to the live stock men which can be obtained in no other way. Each year some members of the party have made purchases of pure bred stock either while at Chicago or as a result of the trip, and the influence of this stock is already evident in the herds in the State. A party of about seventy-five made the trip in 1918.

#### PUBLICATIONS.

It has been the policy of the Division to issue publications on subjects covered by this section only in response to an urgent demand, and then only when no publications of suitable character are available from the Experiment Station

of the Virginia Polytechnic Institute, or from the United States Department of Agriculture. During the past year an arrangement has been made with the State Department of Education whereby a series of bulletins dealing with the various subjects included in such work are to be used as texts in connection with the second term agricultural classes in the rural high schools in the State. Two bulletins, one on pork production and one on beef production were requested from this Section.

In addition to bulletins of the regular series, in order to fill a demand for certain sorts of information where the publication of a bulletin is not justified, and to meet requests where information should be available immediately, mimeographed circulars have been prepared. Bulletin 46 "Twenty Lessons on Pork Production" was prepared this year, also the following circulars:

- #731. A Silo on Every Live Stock Farm in Virginia.
- #761. Memorandum Regarding the Marketing of Wool.
- #778. Preparation of Pig Club Pigs for Fall Shows.
- #827. Preparation of Baby Beef Calves for Fall Shows.
- #869. Weekly Market Letters for those interested in Drought Stricken Texas Cattle.
- #921. How is the Time to Buy Texas Cattle.
- #1230. The Cooper Salivate Method of Controlling Stomach Worms in Sheep.
- #1234. Memorandum Regarding Horse Sales at Army Camps.
- #1239. Memorandum Regarding Southwest Virginia Shorthorn Sale.
- #1250. The Preparation of Pure Bred Cattle for Public Sale.
- #1312. Baby Beef Rations.
- #1449. Letter to Hereford Breeders' and County Agents
- #1457. Letter to Hereford Breeders' and County Agents.

#### NEWSPAPER ARTICLES.

While this section has not followed the policy of furnishing material indiscriminately to the newspapers, a number of articles have been prepared as follows:

- Pasture your Hogs (Cooper)
- Live Stock Club Instructions (Cooper)
  - (a) Pig Clubs
  - (b) Baby Beef Clubs.
- Keep your Pigs Healthy (Ochaner)
- The Self-Feeder (McKinsey)
- Caring for the Brood Sow (McKinsey)
- Selection of Calves for Club Work (Cooper)
- The self-Feeder Pays (Cooper)

In addition to above, a number of short articles have been prepared for local

newspapers.

#### MAILING LIST

A mailing list has been collected and contains at the present time about 1,000 names. This list includes the names of farmers and breeders interested in the various classes of live stock. Mailing lists are in preparation which will list the names of men interested in any class of live stock such as hogs or cattle. In this way it will be possible to eliminate waste in the distribution of publications.

#### LECTURES AND EXTENSION SCHOOLS

There are numerous calls made on this department to appear on programs and at meetings of various kinds to discuss the various phases of live stock production and allied subjects. In addition to this, members of this division have helped carry out the programs of the schools put on by the Extension Division.

In 1918 - 1919 members of the Animal Husbandry Staff addressed 137 meetings with a total attendance of 9271.

STATEMENT OF WORK IN ANNUAL STATEMENT, FISCAL YEAR 1916-17.

Travel	Oregon			Idaho			Washington			Business	Total
	July to Jan.	Jan. to June	Total	July to Jan.	Jan. to June	Total	July to Jan.	Jan. to June	Total		
Mail	764	270	1734	514	613	1127	308	577	1565		5131
Misc.		19	13	14	4	18			7		38
Auto	657	188	2528	160	184	234	238	180	349		2840
<b>Total</b>	<b>830</b>	<b>1176</b>	<b>2065</b>	<b>684</b>	<b>734</b>	<b>1422</b>	<b>1138</b>	<b>2178</b>	<b>1919</b>	<b>7928</b>	<b>6114</b>
<b>Days in counties</b>	<b>46</b>	<b>78</b>	<b>124</b>	<b>53</b>	<b>56</b>	<b>112</b>	<b>97</b>	<b>52</b>	<b>149</b>	<b>44</b>	<b>489</b>
<b>Visits to Agents</b>	<b>17</b>	<b>35</b>	<b>42</b>	<b>20</b>	<b>23</b>	<b>43</b>	<b>36</b>	<b>18</b>	<b>54</b>	<b>13</b>	<b>152</b>
<b>Visits to Farms</b>	<b>46</b>	<b>94</b>	<b>140</b>	<b>260</b>	<b>251</b>	<b>511</b>	<b>127</b>	<b>96</b>	<b>223</b>	<b>32</b>	<b>906</b>
<b>Misc. visits and conference</b>	<b>277</b>	<b>388</b>	<b>655</b>	<b>48</b>	<b>512</b>	<b>937</b>	<b>321</b>	<b>232</b>	<b>553</b>	<b>249</b>	<b>2394</b>
<b>Conference with Agents</b>	<b>15</b>	<b>1</b>	<b>16</b>	<b>3</b>	<b>1</b>	<b>4</b>		<b>8</b>	<b>8</b>	<b>1</b>	<b>29</b>
<b>Educators</b>	<b>41</b>	<b>33</b>	<b>74</b>	<b>4</b>	<b>2</b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>18</b>		<b>98</b>
<b>Business Men</b>	<b>9</b>	<b>16</b>	<b>25</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>12</b>	<b>12</b>	<b>24</b>		<b>53</b>
<b>Misc.</b>	<b>10</b>	<b>14</b>	<b>24</b>								<b>24</b>
<b>Farmers No.</b>				<b>13</b>	<b>4</b>	<b>17</b>	<b>34</b>	<b>6</b>	<b>40</b>	<b>7</b>	<b>64</b>
<b>Meetings Atten</b>				<b>1226</b>	<b>223</b>	<b>1449</b>	<b>1686</b>	<b>370</b>	<b>2256</b>	<b>158</b>	<b>3603</b>
<b>Live No.</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>17</b>
<b>Stock Attendance</b>	<b>10</b>	<b>740</b>	<b>750</b>	<b>50</b>	<b>63</b>	<b>113</b>	<b>25</b>	<b>25</b>	<b>50</b>	<b>274</b>	<b>1187</b>
<b>Misc. No.</b>	<b>1</b>	<b>14</b>	<b>15</b>	<b>7</b>	<b>21</b>	<b>28</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>10</b>	<b>56</b>
<b>Attendance</b>	<b>25</b>	<b>636</b>	<b>661</b>	<b>240</b>	<b>928</b>	<b>1168</b>	<b>68</b>	<b>12</b>	<b>80</b>	<b>2312</b>	<b>4221</b>
<b>Total</b>	<b>2</b>	<b>17</b>	<b>19</b>	<b>22</b>	<b>28</b>	<b>50</b>	<b>37</b>	<b>9</b>	<b>46</b>	<b>22</b>	<b>137</b>
	<b>35</b>	<b>1376</b>	<b>1411</b>	<b>1516</b>	<b>1214</b>	<b>2730</b>	<b>1975</b>	<b>407</b>	<b>2386</b>	<b>2744</b>	<b>9271</b>
<b>Letters</b>	<b>525</b>	<b>850</b>	<b>1445</b>	<b>227</b>	<b>338</b>	<b>565</b>	<b>151</b>	<b>110</b>	<b>261</b>	<b>300</b>	<b>2571</b>
<b>Number</b>	<b>11</b>	<b>6</b>	<b>17</b>	<b>8</b>	<b>5</b>	<b>13</b>		<b>1</b>	<b>1</b>		<b>31</b>
<b>Circulars copies</b>	<b>1358</b>	<b>3075</b>	<b>4432</b>	<b>3720</b>	<b>3192</b>	<b>6912</b>		<b>300</b>	<b>300</b>		<b>11644</b>
<b>Newspaper articles</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>7</b>	<b>8</b>	<b>15</b>	<b>5</b>		<b>5</b>	<b>22</b>	<b>46</b>
<b>Bulletins mailed out on request</b>	<b>226</b>	<b>175</b>	<b>301</b>								<b>301</b>
<b>Fairs and contests judged</b>	<b>9</b>		<b>9</b>	<b>9</b>		<b>9</b>	<b>6</b>		<b>6</b>		<b>24</b>
<b>Bulletins prepared</b>	<b>1</b>			<b>1</b>							<b>1</b>
<b>Purebred cattle placed</b>		<b>130</b>									<b>130</b>
<b>Hogs</b>		<b>121</b>		<b>32</b>	<b>275</b>	<b>597</b>					<b>718</b>