

#59993

Department of Agricultural Education
Virginia Polytechnic Institute
Blacksburg, Virginia

T H E S I S

Consisting of Suggested Outlines
" "
for

LESSONS IN ANIMAL HUSBANDRY

to be taught in

VIRGINIA AGRICULTURAL HIGH SCHOOLS

Submitted

for

MASTER OF SCIENCE DEGREE

in

Agricultural Education

by

Ralph Erskine
R. E. MOORE

VIRGINIA POLYTECHNIC INSTITUTE

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Department of Agricultural Education
Virginia Polytechnic Institute
Blacksburg, Virginia

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USING THE SUGGESTED LESSON OUTLINES

The outline of lessons in animal production, as made in the following pages, was planned with two aims in view: first, to suggest a skeleton for a lesson in each phase of livestock which should be taught in Virginia; and second, to suggest to the agricultural instructors some of the best text books and bulletins which can be used to advantage in working out the daily lessons.

In planning to use these skeletons in working up lessons the instructor should consider the following questions:

1. Is that subject of sufficient importance to justify my teaching it in this school? To illustrate. An instructor in the trucking section of the state where no beef cattle are grown would not be justified in spending three days on "marketing beef cattle", but it might be wise for him to spend several periods on the advantages of growing Baby Beeves.

2. How much time should be given to each lesson? In the above illustration, - it might be well to give one or two lessons to the subject of "The Advantages of Baby Beeves" in that county, but unless there are already baby beeves being grown it is hardly necessary to spend any time on the feeding of baby beeves.

3. Another the third question to be answered by every agricultural instructor in using these outlines is - "What topics are there which can best be taught in seasonal sequence, i.e., shall I plan my courses so that wintering dairy heifers will be taught in April, or shall I make any effort to teach "Feeding for Winter Eggs" in November and December and to teach incubation in February and March.

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In selecting the reference books and bulletins, the motive has been to use the best literature available on the topics and yet to limit that number to those which are necessary in treating it properly. The effort too, has been to use Virginia Experiment Station and Extension bulletins, and bulletins from the U. S. Department of Agriculture, because such literature is often not for distribution when the request comes from another state.

It is especially recommended that each instructor go through this bibliography and make a list of the books, bulletins, and charts which he does not have and make it a point to supply all those of "first choice" list which deal with one or more of the subjects that he proposes to teach during the coming year, and to order them some time in advance. The "second choice" list contains material which bears directly upon the topic, but which may be done without, if there is any reason for so doing.

The purpose of giving the animal husbandry course is to help each boy solve the problems arising on his farm. It was with this in mind that the following lesson outlines were worked up and this should continue to be the aim in working them into lessons. For instance a boy keeps Shorthorn cows to supply his household with milk, and butter. Can the agricultural instructor render assistance if he can persuade him to sell Shorthorns and buy a Jersey. Or, a boy needs a hen house. Why not help him draw the plans, estimate the cost, and study the inside fixtures which are most convenient and satisfactory?

Text Books and References

The text books most commonly used and recommended for animal husbandry subjects in Virginia are:

1. Plumb's "Farm Animals".
2. Harper's "Animal Husbandry".
3. Hunt and Burkett's *Farm Animals*

The following references deal with the subjects more thoroughly and give material which will enable the teacher to competently handle all the topics. The one book that is almost indispensable is Henry and Morrison's "Feeds and Feeding", - 18th edition. Illustrated. Earlier editions do not illustrate the material, nor do they give all of the data obtained from recent experiments.

First Choice References

Plumb.- "Types and Breeds of Farm Animals".

Henry and Morrison.- "Feeds and Feeding", 18th edition, Illustrated.

Virginia Exp. Bul. 225.- "Wintering Dairy Heifers".

Stocking.- "Manual of Milk Products".

Kleinheintz.- "Sheep Management".

Va. Bul. 51.- "Twenty Lessons in Poultry".

Lippincott.- "Poultry Production".

Farmers' Bul. 1111.- "Management of Growing Chicks".

Farmers' Bul. 830.- "Marketing Eggs by Parcel Post".

Farmers' Bul. 656.- "The Community Egg Circle".

First Choice References (continued)

- Farmers' Bul. 1112.- "Culling for Eggs and Market".
- Farmers' Bul. 1067.- "Feeding Hens for Egg Production".
- Bulletin No. G28 (U.S. Department of Agriculture) *Subject* ⁹
- Farmers' Bul. 1113.- "Poultry Houses".
- Farmers' Bul. 801.- "Mites and Lice on Poultry".
- Farmers' Bul. 1116.- "The Farm Flock".
- Va. Bul. No.45.- "Twenty Lessons on Pork Production".
- Smith.- "Pork Production".
- Plumb.- "Judging Farm Animals".
- Va. Exp. Sta. Bul.- "Construction of Hog Houses".
- Farmers' Bul. 438.- "Hog Houses".
- Farmers' Bul. 781.- "Tuberculosis of Hogs".
- Va. Bul. 59.- "Twenty Lessons in Baby Beef Production".
- Farmers' Bul. 834.- "Hog Cholera".
- Farmers' Bul. 1068.- ²
 ₁
- Va. Bul. 59. ²
 ₁
- Va. Bul. 215. ²
 ₁
- U.S. Dept. of Agr. Bul. 874.- "Our Beef Supply".
- Farmers' Bul. 1069
- "Cuts of Beef" - Aberdeen Angus Asso., 817 Exchange Ave.,
Chicago, Ill.
- Chart showing "Representative Shorthorn".- Shorthorn Cattle
Asso., 13 Dexter Park Ave., Chicago, Ill.
- Chart of Representative Hereford.- Hereford Cattle Asso.,
Kansas City, Mo.

Second Choice References

Coffey.- "Productive Sheep Husbandry".

Wyoming Bul. 109.- Laramie, Wyoming. 9
1

Iowa Bul. 53.- "Hog Pastures".

Missouri Bul. 144.- "Self-Feeders for Hogs".

Iowa Bul. 10.- "Hog Cholera".

Indiana Bul. 183 - "Feeding Silage".

Index of Topics

No. periods
recommended
for each

1. Selection of Breed - Poultry	2-4
2. Selection and care of Breeding Flock	2-4
3. The Poultry House	2-5
4. Culling	2-4
5. Winter Egg Production in Virginia	3-6
6. Scratch Pen and Feeding for Eggs	1-2
7. Marketing Eggs	2-6
8. Incubation	2-5
9. Feeding and Care of Baby Chicks	3-6
10. Fattening Cockerels for Market	1-3
11. Self-Feeders and Watering Pans	1-3
12. Poultry Pests	1-3
13. Study of Leading Breeds - Hogs	2-5
14. Table of Comparison of Breeds	
15. Judging Hogs	3-10
16. Selecting Brood Sows	1-2
17. Hog Houses	2-4
18. The Sow - Care at Farrowing Time	2-6
19. Feed for Growing and Fattening Pigs	2-5
20. Pasture as a Hog Feed	2-4
21. Fattening Hogs	1-4
22. Peanuts and Soybeans, and Soft Pork	1-4
23. Butchering Hogs	2-5

Index of Topics (continued)

No. Periods
recommended
for each

24. Diseases and Parasites	1-3
25. Judging the Dairy Cow	3-more
26. Three Leading Breeds - Dairy Animals	3-5
27. Feeding Dairy Heifers	1-3
28. Feed and Care of Cow Carrying Calf and at Calving	2-4
29. Feeding Young Calves	1-2
30. The Boarder Cow	2-5
31. Testing Milk	2-4
32. Some Common Dairy Feeds	2-5
33. Feeding Cows for Production	2-4
34. Feeding Baby Beeves	2-5
35. Hereford Cattle	1-4
36. Shorthorn Cattle	2-4
37. Aberdeen Angus	1-3
38. Table of Comparison	
39. Judging Beef Cattle	2-more
40. Beef Cuts	2-3
41. Fattening Steers in Winter	2-4
42. Baby Beef Industry in Virginia	2-5
43. Silage for Cattle	1-3
44. Tuberculosis in Cattle	1-3
45. Marketing Cattle	2-4
46. Saving Manure from Cattle	1-3
47. Some Important Horse Feeds	2-5

<u>Index of Topics (continued)</u>	No. periods recommended for each
48. Judging Horses	2-5
49. Feeding Horses for Work; Fattening and Maintenance.- The Mule	2-4
50. Care of Mare During Gestation and Parturition	1-2
51. Feeding Colts	1-3
52. The Popular Mutton Breeds	2-4
53. Judging Mutton Sheep	3-5
54. Fattening Lambs for Market	1-2
55. General Management of the Flock	2-4
56. Some Common Feeds for Sheep	2-6

Selection of Breed - Poultry

2-4 periods

- Va. Bul. 51, p. 17. 1. Factors which should influence one's choice of breeds.
- (a) Whether farm or commercial flock.
 - (b) Market demands
 - (1) Meat
 - (2) Eggs - as to color and size
 - (c) Most popular breeds in the community.
- Lippincott, p. 63. 2. Classification of common breeds.
- (a) American - utility breed.
 - (b) Asiatic - meat breed
 - (c) Mediterranean - egg
3. "Utility" breed as a farm bird.
- (a) Good layers.
 - (b) Furnish meat for table.
 - (c) Cockerels and culled hens bring good prices.
 - (1) Heavy breeds always sell better on market.

Ref.- Va. Bul. 51.
Poultry Production, - Lippincott.

Selection and Care of Breeding Stock

2-4 periods

- Lippincott, p.173. 1. Foundation Breeds
- (a) Pure strains
 - (b) Good producers
 - (c) Have desirable color and breed characteristics
 - (d) Good individuals with plenty of capacity and good head.
- Farmers' Bul.1116, (p.7
Lippincott, p.161 (2. Age hens to use.
3. Age cocks to use
- Farmers' Bul.1116
Lippincott, p.169 (4. Mating period
- (a) Number hens per cock
5. Care of hens out of mating season.
Same as for breeding stock.
- Lippincott, p.168. 6. Care of cocks out of mating season
- (a) Keep penned in order to produce no fertile eggs.
 - (b) Keep hearty and well fed

Ref. - Farmers' Bul. 1116
Poultry Production, - Lippincott

The Poultry House

2-5 periods

- Va. Bul. 51, p. 19 1. Location
- (a) Slope and exposure
 - (b) Kind of soil
 - (c) Convenience to other buildings and to range
2. Dimensions.
- (a) Floor space required per breed.
 - (1) 4 sq.ft. for large breeds
 - (2) 3½ sq.ft. for small breeds
 - (b) Recommended height of back and front for Virginia houses.
 - (c) Ventilation and how to place openings for.
- Va. Bul. p. 19

The Poultry House (continued)

2-5 periods

Farmers Bul. 1113, p. 6

- 3. Floors
 - (a) Vermin proof
 - (b) Cheap
 - (c) Easily disinfected

Va. Bul. 51, p. 21

- 4. Inside Furnishing
 - (a) Roosts - space per chicken
 - (b) Nests - number hens for one-position and size

Lippincott, p. 283

- (c) Broody coop
- (d) Water fountains
- (e) Self feeder
- (f) Dust bath
- (g) Grit hopper

- 5. Free from drafts

Ref.- Va. Bul. 51

Farmers' Bul. 1113

Poultry Production, - Lippincott.

Lippincott, p. 154

Culling

2-4 periods

Va. Bul. 51, p. 58

- 1. Purpose
 - (a) Get rid of loafers and all chickens
 - (b) Give more room for producers
 - (c) Save feed

Farmers' Bul. 1112

- 2. Time to cull depending on (August and
 - (a) Price of hens on market. (Sept. best time
 - (b) Early or late pullets (for annual culling.)
 - (c) Pullets should be culled continuously from feathering time where a few chickens are sold or used for table.

- 3. The actual practice.
 - (a) Examination of comb and beak.
 - (b) General appearance showing capacity
 - (c) Proper holding to judge capacity
 - (d) Judging for capacity
 - (1) Room between pin bones
 - (2) Capacity between pin bones and breast bone

Culling (continued)

4. Other points to be considered
- (a) Vent
 - (b) Abdomen
 - (c) Molt
 - (d) Vigor

Ref.- Va. Bul. 51
Poultry Production- Lippincott
Farmers' Bul. 1112

Winter Egg Production in Virginia

3-6 periods

1. Prerequisites for winter eggs

Bul. G28,
U.S. Dept. Agr.

- (a) Early pullets
- (b) Full feed during growing period
- (c) Feed wisely during laying season

Farmers' Bul.
1067, p. 7

2. Feed for egg production

Va. Bul. 51,
p. 24

- (a) Scratch feed (oats equal parts by weight
(corn
(bran (wheat
- (b) Mash (middlings ... equal parts by weight plus
(corn 3/5 as much meat scrap.

Lippincott,
pp. 355-56
Lippincott,
pp. 348-53

- (c) Grit
- (d) Green feeds
- (e) Animal product
- (f) There is no grain combination that gives a complete egg ration.

3. Feeding for eggs

Lippincott,
p. 379

- (a) Laying hens in Virginia require 2 ounces mash and 2 ounces scratch feed per day

Lippincott, p. 378
p. 278

- (b) Regular feeding
- (c) Exercise
- p. 380 (d) Wet or dry feed
- (e) Avoid drafts and exposure

Ref.- Bul. G-28, Dept. of Agr.
Farmers' Bul. 1067
Va. Bul. 51
Poultry Production, - Lippincott

Scratch Pen and Feeding for Eggs

1-2 periods

1. Litter in pen allows
 - (a) Hens to eat and not cram
 - (b) Plenty of exercise
 - (1) Without exercise hens get too fat to lay
 - (2) Keep from becoming droll and lazy
 - (3) Exercise is compulsory for the production of eggs

2. Kinds and depth of
 - (a) Straw
 - (b) Hay or chaff
 - (c) Three to six inches deep

3. Feeding practices

Lippincott,
p.392

Va.Bul. p.32

Farmers' Bul.

1067, p.9

Va.Bul. 51, p.27

- (a) Number of times per day
- (b) Heavy and light feedings
- (c) Dry or wet mash
- (d) Amount of feed given

Ref.- Va.Bul. 51

Farmers' Bul. 1067

Poultry Production,- Lippincott

Marketing Eggs

2-6 periods

Va.Bul.51,
p.47

1. Local marketing
 - (a) Low standards
 - (1) Dirty-fertile-broken, ungraded
 - (b) Low Price
 - (a) Always 25-40¢ below best price

U.S.Farmers'
Bul.830

2. Supplying best market
 - (a) What is best market, use 4- New York, Philadelphia, and two in state
 - (b) How to reach best market
 - (1) Ship direct if production is great enough

Marketing Eggs (continued)

2-6 periods

- Va. Bul. 51, p. 45 (c) Standard of number -one eggs
1. Color - New York is White egg market, Boston prefers brown, Philadelphia has little preference
 2. Size - graded alone will give this
 3. Clean - not washed
 4. Fresh - gathered daily and twice daily in hot weather
 5. Infertile - oftentimes premiums are paid for infertile eggs

U.S. Farmers Bul. 830

(d) Market cooperatively if necessary

- Farmers Bul. 656, p. 4
1. Organize with present and manager
 2. Secure uniform breed for all members
 3. Sell direct to retailers if possible

Ref. Va. Bul. 51
 Farmers' Bul. 830
 Farmers Bul. 656

Incubation

2-5 periods

- V.P.I. Bul. 51, pp. 50-52
 Lippincott, p. 195
1. Selection of eggs as to
 - (a) Freshness
 - (b) Size and color
 - (c) Do not wash
- Poultry Prod., Lippincott, p. 194
- Poultry Prod., Lippincott, p. 194
2. Turning of eggs
 - (a) Once a day until 18th day to keep circulation up in embryo
- Lippincott, pp. 196-198
3. Temperature

1-7 days	102.5° F.)) Be careful not to chill during this period.
7-18 day	103° F.	
18-21 "	104 F.....	

Less heat is required from lamp because of animal heat in chicks.
- Lippincott, pp. 180-190
4. Candling.
 - (a) Candle on 7th day to get out infertile eggs.
 - (b) Candle on 18th day for dead germ and infertile eggs.

Ref. Va. Bul. 51
 Poultry Production, Lippincott.

Lippincott,
pp.377,385

Feeding and Care of Baby Chicks

3-6 periods

V.P.I.Bul.51,
p.52.

1. First care

- (a) Sour milk and effect on white diarrhea
- (b) After 24-36 hours recommended feeds

V.P.I.Bul.51,p.42

- (c) Lice

Farmers' Bul.
1111, pp.4-6
V.P.I.Bul.
pp.27-32

2. Darly rations

- (a) Johnny cake (corn bread)
- (b) Mash
- (c) Grit
- (d) Green feed
- (e) Water

Ibid.pp.56

3. Feeding - no. times per day - when- how to give feed -
how much

4. Later ration - 2 weeks onward

- (a) Mash
- (b) Scratch feed
- (c) Range

V.P.I.Bul.51,
p.54

5. Fireless brooder

- (a) Simple plan
- (b) Can be used in milk climates

Ref. Va. Bul. 51
Farmers' Bul. 1111
Poultry Production, Lippincott

Lippincott,
pp.400-404

Fattening Cockerels for Market

1-3 periods

V.P.I.Bul.51,
pp.32-33

1. Purpose

(a) Separate cocks from pullets in order to fix for market.

2. Age and size to market

(a) 8-12 weeks old

(b) One and one-half to two and one-quarter pounds for smaller breeds; 2 to 2½ pounds for larger breeds.

V.P.I.Bul.51,
p.33

3. Fattening

(a) Length of period - 2-3 weeks

(b) Methods used

1. Pen

2. Crate

3. Stuffing

V.P.I.Bul.51,
pp.33-34

4. Rations recommended

(a) Mash

(b) Scratch feed

(c) Grit

(d) Green feed

(e) Milk and meat scrap

Ref. Va.Bul. 51.

Poultry Production, Lippincott

Self-Feeders and Watering Pans

1-3 periods

1. Recommended for growing chicks

(a) To contain mash

2. Recommended for egg production

(a) Contain mash to supplement scratch feed.

3. Advantages

(a) Keeps hen from getting hungry

(b) Allows hen to balance her own ration

Lippincott,
p.405

Lippincott,
p.406

4. Principles of the feeder

(a) Less trouble than frequent feedings.

Lippincott,
pp.410-14

5. Watering pans

Ref. Lippincott - Poultry Production

Poultry Pests

2-3 periods

Va. Bul. 51,
pp. 42-44
Lippincott,
pp. 512-513
Farmers' Bul.
801, pp. 22-29

1. Lice

(a) Body lice - treatment

1. Dusting

2. Dipping

(b) Head lice - little chicks - treatment

2. Mites

(a) Life habits

(b) How they injure the birds

(c) Treatment

Va. Bul. 51,
p. 45

3. Scaly leg

(a) Cause

(b) Treatment

Lippincott,
p. 510

4. Gapes

Va. Bul. 51,
p. 41

(a)* Cause

(b) Treatment

5. White Diarrhea

Lippincott, p. 94
and 519-22

Va. Bul. 51, p. 40

(a) Caused by bacteria

(b) Handed down in egg

(c) Attacks chicks up to 3 weeks most severely

(d) Treatment

1. Secure hatch from non-infected fowls

2. Kill and destroy all infected birds

3. Sour milk at hatching time and afterwards stays effects

Ref. - Va. Bul. 51
Farmers' Bul. 801
Poultry Production, Lippincott

HOGS

Study of Three Leading Breeds

1-2 periods

- Plumb, T. & B.
pp. 705-19 1. Duroc - lard type
- Plumb T. & B.
p. 707 (a) Characteristics
- Plumb T. & B.
711 1. Color
- Ibid. pp. 709-10 2. Good back - weak posterior
- (b) Good points
- Plumb T. & B.,
pp. 712-13 1. Good rustlers and feeders
2. Prolific
- Ibid. pp. 713-15 3. Early maturity
4. Good back
- Plumb T. & B.
p. 714 5. Excellent to cross on grades
2. Bland China - lard type
- (a) Characteristics
1. Color - markings - 6 white points
2. Large - and long
- (b) Good points
- Ibid. p. 725 1. Good hams and shoulders
- Ibid. p. 727 2. As a feeder
- Ibid. p. 728 3. Early maturity
- (c) Faults
- Ibid. p. 729 1. Prolificacy - *lack of*
- Ibid. 728 2. Quality of meat
3. Berkshire - Lard type
- Plumb, T. & B.
p. 694 (a) Characteristics
- Plumb, Types &
Breeds, p. 694 1. Color
2. Short nose
- (b) Good points
1. Best of feeders
- Plumb T. & B.
p. 699 2. Quality of meat
- Ibid. p. 697 3. Good grazers
- Plumb, T. & B.
pp. 698 (c) Faults
1. Late maturing
- Ibid. 696 2. Small
- Ibid, pp. 697-8 3. More expensive gains than other breeds

4. Breed Tests

(a) Type demanded on market

H & M.
p.618

1. Bit type of lard breeds rather than extreme lard type
2. Small hogs put on expensive gains above 200 lbs.

(b) No breed is predominantly more economic than others.

H & M.
p.619H & M.
p.620

(c) Immunity from cholera

(d) Dressing percent

Ibid, 620

Table of Comparison

	Duroc	Polands	Berkshire	Chester
Size	2	3	4	1
Early maturing	3	1	2	4
Importance in U.S.	1	2	4	3
Importance in Va.	1	2	3	4
Quality meat	2	3	1	4
No.pigs per litter	9.2	7.6	8.3	8.7
Faults	Small hams	Small litters	Steep rumps	Color scalds in southern states

Judging Hogs

3-10 periods

Market Quota-
tions
"Parts of Hog",
Armour

1. More valuable cuts of the hog

Plumb's "Judg-
ing Farm Ans."
pp.486-507
Va.Bul.45, pp.
11-12

2. The score card for pork. Correlate the
card and the valuable cuts.

3. Explain and give examples of good reasons in
stock judging (especially after one day of
judging).

4. Important parts of the hog.

- (a) Back and length
- (b) Feet and posterior
- (c) Hams and shoulders

H.& M.p.620
Smith pp.374-6

5. Explanation of dressing percent

6. Field trip to do judging(2- several days)

(a) Spend one day on each of following groups:

- 1. Back and depth
- 2. Feet and hams to emphasize their importance

Ref. - Daily market quotations from newspapers.
"Parts of the Hog", Chart. Gratis, Armour & Co.,
Plumb, "Judging Farm Animals".
Va. Bul. 45
Smith "Pork Production".

Selecting Brood Sows

1-2 periods

- H & M. 1. Necessary qualifications of the individual
- Smith, Pork Prod. p.104 2. Importance of prolific ancestors.
- Va.Bul.45, pp.8-12 3. Study of the score card
- H. & M. p.707 4. Cost per pig in small litters vs. cost in large litters.
(a) Cost of sow at \$30.00 per year must be divided among her pigs.
- 5. Field trip to select sows
(a) Picking the individual
- Va.Bul.45, p.14
- H.& M.701 6. Age to breed gilts.
" 694
" 702
- Ref. - Henry and Morrison "Feeds and Feeding" 18th edition
Va. Bul. 45
Smith "Pork Production".

Hog Houses

2-4 periods

- H.& M. pp.617-692 1. Factors to be considered
 - (a) Convenience to water, range, and out buildings
 - (b) Purpose to be used
 - 1. Colony house
 - 2. Farrowing pen
 - (c) Sunlight, ventilation, and exposure
 - (d) Cost
- Va.Bul.45, pp.29-33
Ibid. p.32)
Farmers Bul. 438, p.5)
- 2. Individual or farrowing house
 - (a) "Lovejoy" or "A" shaped house
 - 1. Provides light
 - 2. Ventilation
 - 3. Convenience in cleaning
 - 4. Cost of construction - cuts for same.
- Farmers Bul. 438, p.17
- Va.Bul.45, p.29
Ibid. p.32

- | | |
|---|--|
| H & M.p.617 | 3. Colony houses |
| Farmers' Bul.
43, p.5
Va. Bul.45,
pp.29-30 | (a) When to use |
| Farmers' Bul.
438, p.15 | (b) Plan for |
| Agr. Engineering
Dept. Bul. | (c) Colony house with alley
Monitor or half monitor |

Ref. Henry & Morrison,
Va. Bul. 45
Farmers Bul. 438 (Washington, D.C.)
Va. Bul. "Construction of Hog Houses"

The Sow - Care at Farrowing Time

1-3 periods

- | | |
|----------------------------|---|
| H.&M.p.695 | 1. Feed of sow |
| H.&M.p.695 | 2. Preparation of the pen |
| Smith, pp.74-82 | 3. Necessity for sunlight |
| H.& M.p.698 | 4. The sow as a milk producer |
| H.& M.p.685 | 5. Feed requirement for sow carrying litter |
| H.& M.p.68;
Ibid.p.68 | 6. Results likely to follow malnutrition during
gentation |
| Smith, p.81
H.& M.p.697 | 7. Recommendation for common feeds |
| H.& M.p.686 | 8. Supplementary feeds for the common ration |
| | 9. As a follow-up lesson help secure these supplements
and recommend quantities for feeding. |
| H.& M.p.702 | 10. Number litters per year |

Ref. Henry & Morrison
Smith "Pork Production"

Feed for Growing and Fattening Pigs

2-5 periods

H. & M. pp.
685; 698 1. Best condition for sow suckling pigs

Smith, "Pork
Production"
p. 84

H. & M. p. 698 2. Teaching pigs to eat early

H. & M. p. 700 3. Feeds for growing pigs

H. & M. pp. (a) Nutrients
601; 606

Ibid. p. 602 (b) Protein

Ibid. p. 602 (c) Mineral

Ibid. p. 79 (d) Milk

Ibid. p. 74 (e) Roughage

Ibid. pp. 610-11 (f) Pasture

H. & M. p. 699

H. & M. p. 699 4. Age of weaning

Ibid. p. 701 5. Raising growing stock

Ref. - Henry & Morrison
Smith "Pork Production"

Pasture as a Hog Feed

2-4 periods

H. & M. pp. 664-65 1. Necessity of a succulent feed for hogs

H. & M. p. 666
Smith, "Pork
Production",
p. 217

2. Economy of forage crops for hogs
(a) Cost of producing 100 lbs. in dry lot
(b) Cost of producing 100 lbs. with forage supplement

3. System of alternating and continuous pasturing

H. & M. p. 667 4. Pasture with self-feeders

Ia. Bul. 53 5. Best forages

H. & M. p. 673 (a) Rape

H. & M. pp. 669-70 (b) Legumes

H. & M. pp. 674-75 (c) Permanent pastures

H. & M. p. 668 6. Supplementary feeds

Ref. Henry & Morrison, "Feeds and Feeding"
Smith "Pork Production"
Iowa Bul. 53

Fattening Hogs

1-4 periods

H. & M. pp.
599;601

1. Best age to fatten

Ibid.
Va. Bul. 45,
p.40

(a) Most economical gains

(b) Demand of the market

H. & M. p.700

2. Pen fattening

H. & M. pp.82,71

H. & M. pp.93-96

(a) Most expensive

H. & M. p.73

(b) Care must be taken to supply vitamines and/calcium

H. & M. pp.606-7

1. Rickets

3. Pasture fattening

H. & M. pp.628-30

(a) Hogging down corn

Mo. Bul. 110

(b) Time for turning on corn

Ibid, p.675

(c) Hogging down - ripe grain

H. & M. p.700

4. Self-feeders in fattening

H. & M. pp.613-15

(a) Recommended only when fast gains are wanted.

Ref. Henry & Morrison
Va. Bul. 45.

Peanuts and Soybeans, and Soft Pork

1-4 periods

H. & M. p.238

1. Soybeans as forage for hogs

H. M. & p. 672

2. (a) Time to turn on when hogging

(b) Methods of planting for

(c) Good catch crop

H. & M. pp.
672-3

(d) Supplementing feeds - carbonaceous

H. & M. p.673

(e) Most economical gains

2. Soybean meal as hog food

H. & M. p.660

(a) Value per 100 lbs. in terms of tankage and corn

(b) Economical gains put in pigs

3. Peanuts as a forage crop for hogs

- H. & M. p. 679 (a) Time to turn in on
H. & M. pp, (b) Economy of foraging peanuts
679, 240, 180
H. & M. pp. (c) Supplementing feeds - always carbonaceous
679, 661-62

H. & M. p. 181 4. Peanut meal - what is it?

- H. & M. p. 180 (a) Keeping qualities
H. & M. p. 661 (b) Value as an economical concentrate
H. & M. p. 661 (c) Supplementary feeds - carbonaceous

5. Soft Pork

- H. & M. p. 679 (a) Due to oily liquid, Olein in soybeans and
peanuts, rice and corn
Ibid. pp. 621, (b) Very objectionable on market
679
Ibid. p. 679 (c) Corrected by 6-8 weeks feeding on corn.

Ref. - Henry & Morrison, 18th edition

Butchering Hogs

2-5 periods

"Cuts of Pork"

- Armour 1. Study cuts of hog from charts - identifying each.
H. & M. p. 620
Smith, pp. 2. Dressing percent of each
374-76
Ia. Bul. 61 3. Steps in slaughtering hogs and cleaning
Ibid. 4. Internal parts of hog utilized
Ibid. 5. Rendering lard
Ibid; Va. Bul. 6. Curing meat
45, p. 38 (a) Smoking
(b) Packing in brine
(c) Salting and hanging in borax

Ref. Cuts of Hogs on Charts (Gratis Armour or Swift & Co.,
Chicago)

Iowa Bul. 61
Va. Bul. 45.

Self-Feeders

1-3 periods

- H.& M.p.613
Mo.Bul.144 1. Under what conditions recommended
- H.& M.p.613 2. Use for growing pigs
- H.& M.p.614 3. Cost per 100 lbs. with, and without self-feeder
- H.& M.p.615 4. Feeds used in self-feeders
- H.& M.p.614 5. Self-feeders with pasture

Ref. Mo. Bul. 144
Henry & Morrison "Feeds & Feeding", 18th edition
Va. Bul. 45.

Diseases and Parasites

1-3 periods

1. Cholera

- Va.Bul.45, p.34
Iowa Bul.10 (a) Symptoms
- Va.Bul.45,
p.35 (b) Spread, how facilitated
- Va.Bul.45, p.35
Farmers Bul. 834,
p.3 (c) Preventative by vaccination
- Ibid, 34. (d) Fatality in sections if allowed to spread.
- Ibid, 34.

2. Lice

- Va.Bul.45,
p.36 (a) Effects on hogs
- Farmers Bul.
874, p.38 (b) Riddance by spray and dipping
- Va. Bul.45,
p.37

Ibid. p.37 (c) Keeping quarters clean

H.& M.p.704 3. Sanitation and prevention

H.& M.pp.184, 4. Tuberculosis in hogs
643

- Farmers Bul. (a) Methods of infection
781, p.5
- Ibid. p. 10 (b) Symptoms - lesions
- Ibid.p.15 (c) Preventative measures

Ref. Va. Bul. 45
Iowa Bul. 10
Farmers' Bul. 834
Henry & Morrison
Farmers' Bul. 781

Judging the Dairy Cow

3-more periods

- H. & M. p. 340
Plumb, Judg-
ing Farm Ans.
p. 277
Plumb, Types &
Breeds, pp. 317-
22

1. What to look for in dairy type.
(a) Three triangles - side, front, and top wedge
(b) Capacity in heart girth
(c) Dairy temperament
- H. & M. p. 339
Plumb, Judg-
ing Farm Ans.
p. 272

2. Importance of dairy type for milk production
(a) Two-purpose ^{cow} is never highly developed
- Plumb, Judging
Farm Ans.,
p. 275

3. Method of judging dairy cows.
(a) Score card - used only at beginning of judging until class becomes capable of weighing these points without having its attention called to them.
 1. Explanation of each point with reason for its value
 2. This card is used correctly when the class practices it in judging and instructor values and gives reasons for valuation of each point.
(b) Placing card - having student place animals and write reasons for placing each animal over the one it directly precedes in rank.
4. Field trips for actual judging should be practiced exclusively after brief explanation of the above in class room.
(a) Spend one day each on (1) three wedges; (2) head, neck, and dairy temperament; (3) capacity and quality; (4) rump, udder and milk wells.

Ref. H. & M. "Feeds & Feeding", 18th Edition
Plumb, "Judging Farm Animals"
Plumb, "Types and Breeds"

Study of Three Leading Dairy Breeds

3-5 periods

1. Jersey

Plumb, Types
& Breeds,
p.327

(a) Characteristics

1. Color
2. Size
3. Milk (amount and test)-some records

Plumb, Types &
Breeds, p.334

(b) Good points

1. Gentle - good for family cow
2. High testing milk
3. Consume less feed of all per pound product
4. Yellow milk and butter

Plumb, Types &
Breeds, p.331

(c) Bad points

1. Small amount of milk
2. Stock cattle no good for beef
3. Calves often rather delicate

Plumb, Types &
Breeds, p.332

(d) Early development - popularity in Virginia and United States

Plumb, Types
& Breeds, pp.
345-360

2. Holstein

(a) Characteristics

1. Color
2. Size
3. Milk (amount and test) one or more records

Ibid. p.361

Ibid. 362

Ibid. 363

(b) Good points

1. Hardy and plenty of vitality
2. High yield milk and butter
3. Utilizes much rough feed
4. Steers grow enormous size

Plumb, T. & B.
p.368

(c) Faults

1. Low testing milk
2. Require abundance of feed
3. Late maturing
4. White milk and butter

Plumb, T. & B.
p.370

Plumb, T. & B.,
p.365

(d) Early History - popularity in Virginia and U.S.

Study of Three Leading Dairy Breeds (contd.)

- Plumb, T.& B. 3. Guernsey
p.92 (a) Characteristics
Plumb, T.& B. 1. Color
p.392 2. Size
3. Milk (average amount and test - some records)
4. Temperament
- Plumb, T.& B. (b) Good points
pp.398-9 1. Excellent family cow
2. High testing milk and good quantity
Plumb, T.& B. p.392 3. Yellow secretions in milk and butter
" " 393 3. Cross with grades giving excellent results
- (c) Bad Points
Plumb, T.& B. p.408 1. Two types and they will not cross
2. Supply is scarce
- (d) Early History - importance in Virginia and U.S.
- H.& M. p.415 4. Breed comparison of dairy cows
(a) Purpose to determine cheaper producers of breed
- H.& M. p.415 1. Table
- Ref. Plumb's "Types and Breeds of Farm Animals"
Henry & Morrison "Feeds and Feeding" 18th edition

Feeding Dairy Heifers

1-3 periods

- H.& M. p.439 1. Importance of giving good care when young
H.& M. p.440 (a) Effects of scant feeding
- H.& M. p.433 2. Normal growth first and second years
- Ibid, 439 3. Feeding until 2 years old
(a) Rations and feed mixtures
- H.& M. p.440 4. Wintering 650 lb. heifers economically
Va. Bul. 225, (a) Ration 1.- 12 lbs. clover hay, 2 lbs. corn meal
pp.13-15 (b) Ration 2.- 25 lbs. silage, 2 lbs. cotton seed meal
- H.& M. p.442 5. Cost of raising heifers
- H.& M. p.441 6. Age to breed heifers

Ref. H.& M. "Feeds and Feeding".
Va. Bul. 225

Feed and Care of Cow Carrying Calf and at Calving 2-4 periods

- H.& M. p.407 1. Rest period
(a) Cow should have rest period between lactation periods of 30 to 60 days.
- H.& M.p.357-8 2. Extra food requirements
- H.& M.pp.438; 3. Fall or spring dropped calves
409
(a) Whether beef or dairy depending
(b) Milk demands on market
- H.& M.p.349
H.& M.p.407 4. Feed for cow when dry
- H.& Mpp.407 5. Change in feed, preparation for freshening
- H.& M.p.408 6. Length of gestation period
7. Care at freshening time
(a) Pen
(b) Attention
(c) Feed following freshening
1. Fresh water - follow 24 hrs. with bran mash
- H.& M.p.408 (d) Danger of milk fever with treatment
- H.& M.pp.9,79 8. Colostrum and its value
- H.& M.p.439 9. Care of calf at birth

Ref. Henry & Morrison, "Feeds and Feeding" 18th edition

Feeding Young Calves

1-2 periods

- H.& M.p.438 1. Average weights of calves at birth
- H.& M.p.429 2. Necessity of obtaining colostrum
- Ibid. p.430 3. Skim milk ration after 2-4 weeks old
(a) Grain and perhaps calf meal added
- Ibid,p.431 4. Teaching to eat grain
(a) As a supplement to skim milk
- Ibid,p.432 5. Hay and pasture for calves
- Ibid.p.438 6. Fall calves vs. spring calves
(a) Advantages and disadvantages

- H.& M.p.438 7. Scours, how prevented and cured
Ibid,p.435 8. Raising calves on a minimum of whole milk

Ref. Henry & Morrison, "Feeds & Feeding," 8th Edition

The Boarder Cow

2-5 periods

- H.& M.p.339 1. Good and poor producers
Ibid.p.339 2. Keeping the dairy cow for milk vs. beef
Ibid.p.341 3. Causes of unprofitablenss of cows
H.& M.p.340 4. Building a herd from scrubs
(a) Note diagrams, pp.340-41
5. Solution for owners of "boarders"
H.& M.p.334 (a) Testing association
H.& M.p.340 (b) Improving the herd
(c) Feed better
H.& M.p.342 (d) Keep records on production
H.& M.p.334 (e) Official tests in pure bred herds

Ref. Hery & Morrison, "Feeds and Feeding", 18th Edition

Testing Milk

2-4 periods

Stocking
"Milk Manual"
p.109

1. Taking sample
 - (a) Single
 - (b) Composite
 1. Objection to composites

Ibid.p.111

Ibid. 112

2. Care of sample

Ibid. 113

3. Preparation of sample for test

4. Running the test

Ibid,p.114

- (a) Measuring the milk

Ibid.115

- (b) Adding acid

Ibid. p.116

- (c) Whirling and adding water

Ibid. p.118

- (d) Reading the test

5. Figuring the amount of fat.

Ref. Manual of Milk Product, Stocking

Common Dairy Feeds - Properties and Values 2-5 periods

H.& M.pp.

152-54

1. Corn

H.& M.p.161-62

2. Oats

H.& M.pp.

161-62

3. Barley

H.& M.p.163

4. Rye (grain)

H.& M.pp.

196-200

5. Silage

H.& M.p.174

6. Cotton Seed meal

- (a) Gives poisonous results when fed with milk

H.& M.p.180

7. Soybeans

Ibid. p.186

8. Beet pulp

Ibid. p.180

9. Peanuts

Ibid.p.191

10. Mixed feeds

- H. & M. p. 201 11. Dry fodder
 H. & M. p. 207 12. Blue grass pasture
 H. & M. p. 207 13. Timothy
 H. & M. p. 224 14. Alfalfa
 H. & M. p. 233 15. Clover hay
 H. & M. p. 238 16. Soybean hay
 H. & M. p. 248 17. Rape

Suggested Comparison table for feed used in
 your community

Name	:Laxa- :tive	:Consti- :pating	: Hulky	: High : Protein : content	: High : carbohydrate : content	: Milk : stumulating
Corn	:	:Fairly	:	:	: yes	:
Silage	:Yes	:	: Yes	:	:	: Yes
Alfalfa	:Yes	:	: Yes	: Yes	:	: Yes
Rye	:	:Fairly	:	:	: Yes	:
Cotton seed meal	:	:Yes	:	: Yes	:	: Yes

Study only those ~~breeds~~ ^{*breeds} which are of importance in
 your locality.

Feeding Cows for Production

2-4 periods

1. Feed goes as maintenance first and what is left is for milk.

H.M.&
pp.108-10

2. Nutrients required for milk production
(a) Protein
(b) Mineral
(c) Vitamine

H.& M.
p.396

3. Requirements of a good ration
(a) Allow for individuality

H.& M.
p.397

H.& M.p.397

H.& M.p.395

- (b) Succulent - examples silage
(c) Bulkiness - examples bran
(d) Balanced ration

4. Formulating rations

H.& M.pp.
118,396,
148

H.& M.p.124

- (a) Hints for general consideration

- (b) For maintenance

1. Digestible protein

2. Net energy in therms

H.& M.p.125

- (c) For milk (varying with percent fat)

1. Digestible protein

2. Net energy in therms

H.& M.pp.
398-99

- (d) Ration mixtures recommended

H.& M.p.401

- (e) Computing rations

H.& M.p.144

1. Examples

Ref. Henry & Morrison, "Feeds and Feeding", 18th Edition

Feeding Baby Beeves

2-5 periods

1. General plan

- H.& M. pp.
532-33 (a) Reasons
H.& M. p. 450 (b) Age, birth, and marketing
H.& M. p. 77 (c) Advantages

- H.& M. p. 538
H.& M. p. 530 2. Lot feeding vs. pasture and grain
H.& M. p. 534 (a) For finish and show purposes
H.& M. P. 532 (b) For economy in production

H.& M. pp. 134,
139

H.& M. pp.
118-120

3. Feed requirements
(a) Carbohydrates and fats supply
(b) Protein supply
(c) For laxative condition
(d) For fineness of coat and quality
(e) Exercise and water
(f) Roughage supply
(g) Silage as a feed for baby beef

- H.& M. p. 487 4. Special points
(a) Frequency of feeding
(b) Salting
(c) Shelter
(d) Importance of using feed available

Winter^{ing} Two Year Old Steers

H.& M. pp.
516-519

1. Meaning of maintenance
(a) Keep at same weight - with young cattle it may mean loss of flesh which is turned into growth

Wa. Exp. Bul.
215

H.& M. p. 518

2. Best results and cheapest gains when
(a) Maintained at the full weight, and
(b) When fed 40 lbs. silage per day, or
(c) Thirty-five lbs. silage and one pound cotton seed meal when cotton seed meal is used
(d) Increase silage

3. Wintering on dry roughage
(a) Stover hay for wintering

H.& M. pp.
518-19

- (b) Stover silage gives better results than dry stover

4. Silage and grain vs. silage and silage and cotton seed meal

H. & M.
pp. 519-20

(a) Economic gains

Ref. Henry & Morrison
Va. Bul. 215
Va. Bul. 59

Hereford Cattle

1-4 periods

Angus Asso.

1. Illustrate with pictures of type

Plumb, pp.
258-60

2. General description

(a) Smaller barrel than Shortnorn and more cylindrical

(b) Size (second in beef breeds)

(c) Detailed discussion of head, back, horns, etc.

(d) Color and horns (must be red with white face for registration)

Plumb, p. 260

Plumb, pp.
261-62

3. Adaptability to beef purposes

(a) Best of rustlers and grazers

(b) Mature earlier than Shorthorn

(c) Excellent for improving grades

1. Most used breed as range cattle

(d) As baby beeves

Plumb, p. 263

Plumb, p. 262

Plumb, p. 263

Plumb, p. 260

4. General facts

(a) More nervous temperament

(b) Dressing percent

(c) Importance in United States

(d) Importance in Virginia

1. Lee County Va. is famous Hereford home

Plumb, pp.
252-53

5. Early Development

(a) Originated in Herefordshire, England

(b) Animals were chosen that were red with white face.

Ref. Plumb, "Types and Breeds of Farm Animals"
Charts of types - Hereford Cattle Association

Shorthorn Breed

2-4 periods

Shorthorn
Breed Asso.

1. Pictures to use in describing to class

Plumb, pp.
226-230

2. General Description

- (a) Brick shape
- (b) Size (largest of beef herds) Though H F steer holds world's record for weight 4300 lbs.
- (c) Detail discussion of head, back, loin, etc.

Plumb, p. 235

3. Shorthorn breed as milkers and family cows

- (a) Two strains
 - 1. Dual purpose
 - 2. Beef

Plumb, p. 237

Plumb, p. 231

Plumb, p. 231

4. Adaptability to beef purposes

- (a) Good rustlers on pasture
- (b) Respond to lot feeding
- (c) Late maturity, therefore not peculiarly adapted to baby beef
 - 1. Borne out in minority of winnings as baby beeves in show ring

Plumb, p. 232

Plumb, p. 240

Plumb, p. 229

5. General facts

- (a) Dressing percent
- (b) Number in U.S. (leading beef breed) (corn belt)
- (c) Colors (1) red; (2) red and white; (3) roan; (4) white
- (d) Importance in Virginia
- (e) Some prices paid for individuals

Plumb, pp. 241-42

Types & Breeds, 6. Early development

Plumb, pp. 200-
220

- (a) Originated in England
- (b) Large individuals were selected for breeding.

Ref. Shorthorn Cattle Association "Charts" 13 Dexter
Bulletin Park Ave., Chicago, Ill.
Plumb "Types & Breeds of Farm Animals"

Aberdeen Angus

1-3 periods

Chart of
Types,
Angus Asso.

1. Illustrate with pictures bringing out type

Plumb, p.284

2. General description

Plumb, p.286

- (a) True cylinder shape
- (b) Size (about the same as Herefords, or a little smaller)

Plumb, p.284

- (c) Detailed discussion of neat head, span of ribs, cylindrical body, short legs, good twist, loins, etc.

Plumb, p.285

- (d) Color - must be black for males, but a little white is allowed under belly in females for registering

Plumb,

- (e) Polled

Plumb, pp.289-90

3. Adaptability to beef purposes

Plumb, p.292

- (a) As grazers - medium
- (b) Mature early, hence good baby beeves
- (c) Respond well to feed lot fattening
- (d) Results when crossed with grades

4. General facts

Plumb, p.285

- (a) Vicious temperament

Plumb, p.299

1. Importance

Plumb, p.286

- (b) Number in United States

Plumb, p.288

- (c) Importance in Virginia

- (d) As a milk breed

Plumb, pp.279-80

5. Early development

- (a) Low lands of Scotland (where rustling was not necessary)

- (b) Shows that they had good rich lands to develop upon

Ref. Aberdeen Angus Asso, 817 Exchange Ave., Chicago, Ill.
Plumb, "Types and Breeds of Farm Animals"

Table of Comparison

	Shorthorn	Hereford	Angus
Size	1	2	3
Date of maturity	2	1	1
Good points	Size-hind quarters	Good rustlers Constitution	Beed lot quality
Faults	Heart girth	Hind quarters	Rough shoulders
Importance in U.S.	1	2	3
Section found in Va.	Valley and Southwest	Lee County	Fauquier and Wythe
Importance in Va.	1	2	3
Section found in U.S.	Universally	Range section	Corn belt
Adaptability for baby beef	Medium	Excellent	Excellent

Judging Beef Cattle

2-more periods

- Plumb, Judging Farm Ans. p.228
H. & M. pp.461-62, 465
Va. Bul. 59, p.10
1. The score (a) discussion of each point
 a. Show why emphasis is so placed on points
 (b) Very useful to beginner
 (c) May be eliminated after a few lessons in its use
- Ibid. pp.12-13 2. Steps in judging
 (a) Study the general appearance as to type and uniformity from a distance - 10 ft. or more
 (b) Study closely and compare good and bad points of each animal
 (c) Give reasons, oral and written
 1. Give good points
 2. Call attention to weak ones
- Farmers Bul. 1068 3. Judging
 (a) Take field trips to judge good animals
 (b) Spend one day each on (1) top and bottom lines;
 (2) rump, loin and hind quarters; (3) head and capacity.

Ref. Plumb "Judging Farm Animals
Va. Bul. 59

Henry & Morrison "
Farmers' Bul. 1068 (Wash)

Beef Cuts

2-3 periods

- Va. Bul. 59, p. 42 1. Study of meat charts
- Farmers' Bul. 1068, p. 7 (a) Learning names of different cuts
(b) Uses of each on the menu
- Quotations from papers, daily market 2. Prices of each cut
- (a) Showing the correlation of prices and score card basis of different cuts - loin, twist, ribs, etc.
- (b) Prices may be obtained from local market

Ref. - Va. Bul. 59
Farmers' Bul. 1068

Fattening Steers in Winter

2-4 periods

- H. & M. p. 449 1. Methods followed in Virginia
- (a) Two year olds fatten in lot for spring market
(b) Feed lot method
2. Advantages
- (a) Uses of rougher feed than for baby beef
(b) Cattle go on market for good price
(c) Utilize litter into making manure
(d) Utilizes labor at slack time
(e) Is method of finishing grass fed cattle that are not in marketable condition
- H. & M. pp. 445-7
Ibid, 510 3. Feeds requirement
- H. & M. pp. 509-10
H. & M. pp. 154, 458 (a) Silage
(b) Corn
(c) Oats
(d) Oil meal
(e) Hay
- H. & M. p. 445 4. Feeding
- H. & M. p. 452 (a) Getting on feed - light feeding at start
(b) Finishing period
- H. & M. p. 448 1. Heavy feeding
2. Reduction of roughages and uses of concentrates
3. Maximum amounts and how determined
4. Age plays a part
- H. & M. p. 450

Ref. Henry & Morrison

Baby Beef Industry in Virginia 2-5 periods

- H. & M. p. 533 1. Selecting Animals
- Va. Bul. 59, p. 15 (a) Requirements for baby beef
1. Early maturity
 2. Respond to feed lot
 3. Must be available
- H. & M. pp. 59-61 (b) Breeds
1. Angus - grow well and finish excellently
 2. Shorthorn - grow well, difficult to finish out
 3. Hereford - grow well, finish fairly well
- H. & M. p. 534 (c) Selecting the individual
1. Age
 2. Plenty of length and constitution
2. Sections of state advisable (merely touch upon)
- (a) Very profitable in Piedmont when grass is short and pasture scarce
 - (b) Tidewater and trucking not grown extensively
 - (c) Valley and southwest coming to baby beef more
- H. & M. p. 534 3. Cost of producing baby beef
- (a) Cost producing to weaning time includes cost of keeping
 - (b) Total cost

Ref. - Henry & Morrison
Va. Bul. 59

Silage for Cattle

1-3 periods

- H. & M. p. 259, 197 1. Advantages of silage
- H. & M. p. 261
- Ind. Bul. 183, pp. 857-60 2. Amount to feed
- H. & M. p. 262 (a) When grain is supplemented
- Ibid, p. 519 (b) Purpose of feeding the cattle
- Va. Bul. 215, pp. 14-15 3. Changing from silage to grass and vice versa.
- H. & M. p. 256 4. Precautions in feeding
- (a) Moldy silage
 - (b) Over feeding at the beginning
- H. & M. p. 264 5. Capacity of silos

Ref. - Henry & Morrison, Indiana Bul. 183, Va. Bul. 215

Tuberculosis in Cattle

1-3 periods

1. Losses due to disease

- Farmers' Bul. 1069 (a) Prevalancy in U.S.
F.Bul.1069,p.18 (b) Prevalency in Virginia
F.Bul.1069,p.8 (c) Transmitting to people
1. Through flesh
2. Through the milk products
Farmers Bul.1069, (d) Transmitting to hogs
pp.11,25
H.& M.p.643

F.Bul.1069, 2. Symptoms of the disease
p.12

- (a) Living animal
(b) Carcass at post mortem examination

H.& M.p.355 3. Testing for

- Farmers' Bul. 1069,p.15 (b) Intradermal

Farmers Bul. 4. Disposal of diseased animals
1069,p.28

Farmers' Bul. 5. Qualifications for accredited herds
1069,p.19

Ref. - Farmers' Bul. 1069
Henry & Morrison

Marketing Cattle

2-4 periods

Daily papers which give market quotations

1. Plot curves showing prices of cattle in four main markets ~~of year~~

Including local and Baltimore market for every two weeks of year

- (a) Quotations may be secured from newspapers
(b) Best results are obtained where class does plotting

"Our Beef Supply"
Bul. 874, p. 278,
Dept. of Agr.

2. Considering possible fattening periods for this locality, what time is best to market cattle?

(a) Also when are lowest prices paid?

R.R. Agent

3. Get freight rates to each market per cwt.

(a) May be obtained from local dealer

4. Considering freight charges and prices at each market, work out with class the best market.

(a) Allow from 30 lbs. to 100 lbs. drift, according to the distance shipped and time of year.

Ref. Market Quotations from daily papers
"Our Beef Supply", Bul. 874, Dept. of Agr., Washington
Rates from local railroad agent

Saving Manure from Cattle

1-3 periods

1. Its value

H. & M. p. 273

(a) One great argument for keeping cattle in many sections is to increase organic, potash, and nitrogen supply of sod.

H. & M. p. 274

(b) Livestock farms pay partly because of manure supply

H. & M. p. 275

(c) Fertility and manurial value of feeds

H. & M. p. 276

(d) A good field trip in spring pointing out good results from manurial land will leave a meaning not possible to obtain in class room.

H. & M. p. 281

2. Saving manure

(a) Hauling out as made, probably the best

(b) Using manure pit - add ground rock to retain NH₃

(c) Tramping down - very good but must keep bedded

(d) Save the liquid manure

H. & M. p. 281

(e) Losses in farm manure

Ref. Henry & Morrison

Some Important Horse Feeds

2-5 periods

H. & M. pp. 297,
301, 162.

I. Concentrates

- 1. Oats
- 2. Substitues for oats
- 3. Indian Corn
 - (a) Recommended rations with carbonaceous hay
 - (b) Recommended rations with legume hay
- 4. Barley
- 5. Rye - Poisoning effect - grinding of
- 6. Wheat bran
- 7. Linseed meal
- 8. Cottonseed meal

II.

- 1. Timothy
- 2. Corn fodder and corn stover
- 3. Straw
- 4. Legume hays
 - Rations including

Ref. Henry & Morrison

Footnote.- Use only those feeds which are of interest in your locality.

Judging Horses

2-5 periods

- 1. Study of names of important parts of the horse
- 2. Brief study of score card
 - (a) Touch briefly all the sub-heads
- 3. Field trip for judging (using one horse to study parts.)
 - (a) Practice in placing
 - (b) Blemish vs. unsoundness

Ref. Plumb, "Judging Farm Animals"

Diseases and Unsoundness

1-2 periods

- Plumb, "Stock Judging" p.197 1. Lameness (cause and treatment)
- Ibid.p.199 2. Heaves (cause and treatment)
- Ibid.p.200 3. Bone spavin (cause and prevention)
- Ibid.p.201 4. Bog spavin (cause)
- Ibid.p.202 5. Curb (cause)
- Ibid.p.205 6. Founder (cause, treatment)
- Ibid.p.206 7. Fistula and poll evil

Ref. Plumb, "Judging Farm Animals"

Feeding Horses for Work, Fattening, and Maintenance

The Mule

2-4 periods

1. Kinds of work done by horses
- H.& M.p.284 (a) One horsepower
Ibid.pp.285, 289 (b) Drawing a wagon
- Ibid.pp.287, 290 2. Maintenance requirements
- Ibid.pp.291, 748 3. Computing rations for
Ibid.p.331 (a) Heavy and medium work
Ibid.p.330 (b) Adjusting feed with work done

Azoturia

- Ibid.p.330 4. Hints in horse feeding
- Ibid.p.333 5. Fattening horses
Ibid.p.333 (a) Feeds for
Ibid.p.298 (b) Hints for fattening
Ibid.p.332 1. Blanketing and clipping
6. The mule

Ref. - Henry & Morrison

Care of Mare During Gestation and Parturition

1-2 periods

H. & M. p. 298 1. Working the mare during gestation

H. & M. pp. 330,
319

(a) Light work advantageous

Ibid. pp. 331,
320

(b) Rations for when working

Ibid. p. 319

(c) Refrain from straining pulls

Ibid. pp. 76, 121,
320

(d) Requirements of growing animal

2. Gestation and parturition

Ibid. p. 320

(a) Length

Ibid. p. 321

(b) Feeding in preparation to parturition

Ibid. p. 320

(c) Disinfecting quarters

Ref. Henry & Morrison

Feeding Colts

1-3 periods

1. Average gains to be expected

H. & M. p. 321

(a) 1st, 2nd, and 3d years

2. Early feed

H. & M. p. 321

(a) Milk from mare

Ibid. p. 323

1. Condition of mare for milking

Ibid. p. 323

(b) Teaching to eat grain

1. Best grains for growing colts

Ibid. pp. 324, 5

(c) Weaning

1. Place in safe quarters

2. Continue feeding appetizing feeds

Ibid. p. 326

3. Feed after weaning

(a) Draft colts ration, 2 yrs. old

Ibid. pp. 326-7

(b) Oats as a feed for colts, and its substitutes

Ibid. p. 327

(c) Wintering without grain

Ibid.

Ibid. p. 327

4. Cost of raising horses

(a) Cost of colt at birth

(b) Cost of feed until 2½ yrs. old

(c) Itemized cost

Ref. Henry & Morrison

The Popular Mutton Breeds

2-4 periods

1. Name and Description

- Plumb, "Types & Breeds, pp.536-50 (a) Southdown
- Ibid, pp.550-64 (b) Shropshire
- Ibid. pp.565-74 (c) Oxford
- Ibid. pp.574-85 (d) Hampshire
- Ibid. pp.586-96 (e) Dorset
- Ibid. pp.596-606 (f) Cheviot

H. & Mp. p.539 2. Breed tests for economy in 100 lbs. gain

Table of Comparison of six important mutton breeds

	Southdown		Shropshire		Hampshire		Oxford		Dorset		Cheviot	
	ewe	buck	ewe	buck	ewe	buck	ewe	buck	ewe	buck	ewe	buck
Weight	135#-	175#	150#-	225#	190#-	225#	200#-	275#	165#-	225#	150#-	225#
Maturity	1		2		5		6		3		4	
Quality Mutton	1		2		4		5		3		3	
Weight of fleece	5 lbs.		7½ lbs.		7 lbs.		8 lbs.		6 lbs.		7 lbs.	
Wool on head	Below eyes		To nose		To eyes		Just below eyes		to eyes		to head	
Color head	Brown		Dark brown		Black		White spots on head		White		White	
Chief fault	Size small		Susceptible to disease		Coarseness, big oversize head		Short, steep rump		Back narrow		Do not flock	
No. in U.S.	10,000		120,000		35,000		20,000		8,000		1,000	
No. in Va.	4		1		2		5		3		6	
Quality of fleece	6		1		3		5		4		2	
Ability to reproduce	125%		168%		120%		150%		175%		150%	

Footnote: In the study of sheep no instructor will need cover all the breeds, but he will best pick out two or three common breeds and work out lessons from the references and the above chart.

Judging Mutton Sheep

3-5 periods

Sheep mange,
Kleinheinz,
p.226
Productive
Sheep Hus-
bandry, Coffey,
p.84.

1. Score card explanation

Coffey, pp.82-

2. Points to look for

Coffey, p.92
Coffey, p.89

- (a) Age
- (b) Condition
- (c) Top line
- (d) Width of rump and shoulders (avoid open shoulders)
- (e) Size of hind leg and depth of twist
- (f) Neck should be short and well fleshened
- (g) Depth of chest (by placing hand under chest and over ~~wethers~~)
- (h) Condition of wool (examine over heart and upper flank)

Kleinheinz, p.227.

3. General appearance
(a) At a distance

Ibid.p.229

4. Proper handling through the wool for flesh, conforma-
tion and quality of skin.

Ibid.p.230

5. Head examination and determining age

Ref. -"Sheep Management"- Kleinheinz
"Productive Sheep Husbandry", Coffey

Fattening Lambs for Market

1-2 periods

H.& M.p.590

1. Necessity for fattening

H.& M.p.591

2. Hints in fattening
(a) Regularity in feeding
(b) Quiet is necessary

H.& M.p.587
Ibid.p.592

3. Economic gains made by lambs
(a) Cost of gains

Ibid.p.592

4. Length of feeding period

5. Methods of fattening

Fattening Lambs for Market (continued)

- H.& M.p.593 5. Methods of fattening
Ibid. (a) Fall fattening
Ibid.p.594 (b) Corn field fattened
Ibid.592 (c) Winter fattening
Ibid.p.562 (d) Grain fattening on pasture
1. Suggested rations

Ref. - Henry & Morrison

General Management of the Flock

2-4 periods

- H.& M.p.539 1. Breed tests for economic gains
H.& Mp.pp. 2. Sheep and the average farm
537-8
H.& M.p.540 (a) Profit makers for the farm
H.& M.pp. 3. Shelter and winter quarters
541-2
H.& M.p.573 4. Pastures
H.& M.pp. 5. The breeding season
577-79
Ibid.pp. 6. Lambing time and after
583-8, 597
Ibid.pp.587-~~8~~. Weaning and early grain ration
8, 597
Ibid.p.582 8. Cost of maintaining ewe

Ref. - Henry & Morrison

Some Common Feeds for Sheep

2-6 periods

- H. & M.p.580
H.& M.pp.550-551
Ibid.pp.554, 543
Ibid.pp.162, 556, 580
Ibid.p.559
1. Concentrates
(a) Corn - requiring supplement
(b) Barley
(c) Oats
(d) Linseed and cottonseed meal
- Ibid.p.562
Ibid.p.563
Ibid.pp.237, 564
Ibid.pp.201-2, 565
2. Roughages
(a) Legume hay
(b) Peas
(c) Corn fodder, corn stover, and straw
- Ibid.p.566
Ibid.pp.243, 567-8
Ibid.p.571
Ibid.pp.234, 573
3. Succulent feeds
(a) Corn silage vs. roots
 1. Amount silage to feed
(b) Pastures
(c) Other growing crops
- Ibid.pp.248, 275
- Wyoming
Bul.109
Laramie,
Wyoming
4. Sheep feeding with best results tabulated

Ref. Henry & Morrison "Feeds & Feeding"
Wyoming Bul. 109