HERE'S EXTRA VALUE
YOU CAN ACTUALLY
SEE AND MEASURE

Greater Traction Bar Length
Means Greater Traction.
And Firestone Ground Grip
Tires give you up to 89
more inches of traction bar
length than any other
tractor tire made.

DOWN TO EARTH
FACTS ABOUT TRACTION

LOOK at the picture above. That bar of rubber
is 89 inches long. It shows you how much extra
traction bar length you can get in Firestone Ground
Grip Tires. That's one important reason why Firestone
Ground Grip Tires are FIRST in traction.

But that's not the whole story. Rubber traction
bars bend, slip and lose their grip in heavy going
unless they are rigidly braced. Every traction bar in
the Firestone Ground Grip tread is heavily buttressed
at the base and is braced by three supporting bars
which join it at right angles. This patented and
exclusive triple-braced construction is another reason
why Firestone Ground Grip Tires are superior in
traction.

Furthermore, there are no "traction leaks" in
Firestone Ground Grip Tires. The tread bites steadily
and evenly into the ground because the traction bars
are continuous and unbroken.

And finally, Firestone Ground Grip Tires give
you superior traction in ALL soil conditions because
all mud, dirt and trash is automatically forced out of
the open, unobstructed spaces between the bars as
the tire leaves the ground.

Whether you are changing over your present
steel-wheel tractor or ordering a new one, insist on
the tire that has no "traction leaks", no slippage, no
clogging, no mud traps — the Firestone Ground Grip.
Your nearby Firestone dealer or store will gladly give
you complete information without obligation.

A complimentary package of Burpee's new
Idabelle Firestone Marigold seeds is yours for
the asking at your Firestone dealer or store.

MAIL THIS COUPON TODAY!

The Firestone Tire & Rubber Co., Akron, Ohio
Without obligation on my part, please send me:
☐ A copy of the new Farm Guide Book.
☐ Information about the Firestone Farm Tire Payment Plan.
☐ Full details on changing over my farm wagon or
spreader.
☐ Please demonstrate Firestone Ground Grip Tires
with my own tractor on my own farm.

Make and model of tractor

Name

R. F. D. or Street Number

Town

County

State

## IN THIS ISSUE

A New South Carolina Agricultural Industry .................................................. 3
Looking For New Opportunities in Agriculture .............................................. 4
Tenancy in the South ...................................................................................... 5
Agrarian Personalities .................................................................................... 6-7
Silos ................................................................................................................. 8
The Farmers Vegetable Basket ........................................................................ 9
Black Magic ...................................................................................................... 10
Dairymen—Watch Milk Flavor ........................................................................ 11
Factors Influencing Soil Acidity ....................................................................... 12
Instead of Hay—Ensile ................................................................................... 13
The Scourge of the South ................................................................................ 14
Dairy Farming as a Way of Life ....................................................................... 15
Between the Furrows ....................................................................................... 16-17
The Need for Crop Diversification in the South ............................................. 18
The Changing Role of the County Agent ......................................................... 19
The War and The Farmer ................................................................................ 20
The Agrarian Presents ..................................................................................... 21
What is an Entomologist .................................................................................. 22
Miss Cornelia Ayer Graham, B.S. .................................................................. 24
Farm Plan Contest ........................................................................................... 25
South Carolina Tenants ................................................................................... 26
Weeds a Major Problem .................................................................................. 27
Have you Read .................................................................................................. 28
Silage Crops ..................................................................................................... 30

## EXECUTIVE STAFF

F. E. ROGERS, JR., Editor-in-Chief

E. L. YOUNG, Business Manager
W. B. NICKLES, Circulation Manager
Z. T. FORD, Assistant Circulation Manager

E. P. HUGUENIN, Associate Editor
H. C. ZERBST, Managing Editor
J. E. BLESSING, Assistant Business Manager

## DEPARTMENTAL EDITORS

B. W. ANDERSON, Agricultural Economics
E. C. TRUETT, Agricultural Education
A. F. BURGESS, Agricultural Engineering
R. L. STODDARD, Agronomy

M. I. JENKINS, Animal Husbandry
W. M. HOBSON, Dairying
P. D. SEABROOK, Horticulture
F. K. HINNANT, Zoology & Entomology

PUBLISHED QUARTERLY Application for entry as second-class matter is pending CIRCULATION 3000
COMPLIMENTS OF

L. C. Martin Drug Company

P. S. McCOLLUM, Owner

OFFICIAL COLLEGE BOOK AND SUPPLY STORE

CLEMSON COLLEGE  ❧  SOUTH CAROLINA

THE EPTING DISTRIBUTING CO.
LEESVILLE, SOUTH CAROLINA
STATE DISTRIBUTORS
Tennessee Basic Slag

MANUFACTURERS
Fertilizers — Feeds — Insecticides
SPECIALISTS IN FARM SEEDS OF SUPERIOR QUALITY

INQUIRIES SOLICITED ON:
Rotenone Dusts  ❧  Py-Ro Cattle Louse Powder—Extension Formula.
Lespedeza: Certified Kobe, Korean, Tenn. 76, and Common.
Custom Hulling & Scarifying Lespedeza & Crotalaria
Crotalarias; Striata, Giant Striata, Late Spectabilis, & Early (Carolina) Spectabilis
Vetches: Hairy, Common, Augusta, & Mixed
Austrian Winter Peas
Crimson Clover
Urbana Inoculants for All Legumes
Soybeans
Cowpeas
Velvet Beans
Cattail Millet for Dry-Weather Summer Pastures
Seed Oats, Wheat, Rye, Barley
Meat Scraps, Fish Meal, Peanut Meal, 45% Protein
Alfalfa Meal
Dried Buttermilk
The Paramount Lime Spreader (Trailer Type).

Ask for Literature, Name of Nearest Dealer, and Prices on
TENNESSEE BASIC SLAG, Carlots or Trucklots.
New South Carolina Agricultural Industry

By S. K. Able, '42

An Industry that is increasing the Piedmont Farmer's income . . . .

On August 12, 1940 a new industry which has proven a boon to the dairy farmers of Chester County was opened. This new industry is the cheese-making plant of the Borden Company located on the outskirts of Chester. The cheese plant itself is not an imposing structure, but its backers are enthusiastic and at present the Borden Company is formulating plans for its enlargement and for the shifting over to the making of evaporated milk.

The manufacture of evaporated milk is the ultimate aim for the Chester plant, but lack of milk production has caused cheese-making to be substituted until production can be increased sufficiently. Milk production has already been greatly stimulated, for on the opening date the plant had fifty patrons and covered only Chester County. The number of patrons now stands at two hundred twenty-five and covers Chester, York and Fairfield counties. By next summer the managers hope to begin the development of Union and Lancaster counties into high milk producing areas.

The cheese produced at the Chester plant is the common Natural American Cheddar cheese. Its manufacture is an interesting process, but is little known or thought of outside dairying circles. The milk is brought in from the farm, weighed, tested for the butterfat content and then goes to the Pasteurizer. The "flash method" of Pasteurization is used. In this method, the milk is heated rapidly to 165°F Fahrenheit and is then partly cooled. From the Pasteurizer the milk goes at 85°F into one of the two vats of ten thousand pound capacity. At this time one percent culture is added as a starter. Throughout the first stages the milk is agitated constantly. One ounce of vegetable coloring is added for each thousand pounds of milk. Rennet is introduced to cause the milk to curd more rapidly. When the curd develops it is cut into small cubes three-eighths of an inch in diameter, after which the cubes are stirred for ten minutes. Then the curd is heated to 100°-102° for half an hour in order to toughen

continued on page 32
Looking for New Opportunities in Agriculture

Dr. R. F. POOLE, President of Clemson

Agriculture is the world’s most charitable industry. It is the least organized industry and is the only large and important industry in which the producer has no bargaining privileges. It should be classed with the great humanitarian gifts to the world. In this country it is, not only literally speaking but practically too, the life line to the stability of government and industrial wealth. Throughout all times agriculture has been a slave to supply and demand phenomena. Many efforts have been made to obtain for the industry just price values, but satisfactory results seem to be as remotely distant now as at any other time. Until satisfactory and conceivably needed far-reaching reforms can be made, it seems important that growers must seek opportunities existing under the present conditions in order to achieve a successful livelihood. By every known measuring stick the farmer has the right to seek an equitable share of the wealth created through his efforts.

I am optimistic about the future of South Carolina and its agriculture. There will be depressions but there should never be famines unless our people become panicky. The state has many small cities which are fairly well distributed. We have magnificent streams and still have some good forest areas. The good roads, good homes, and good moral standards are worthy of praise. There is also a growing intelligence and a consciousness of educational values among the people in all walks of life in this state. The climate affords pleasant living and a diversity of plant growth. The balancing of plant and animal production, so much needed in the southern states, is rapidly becoming a reality.

The extraordinary evolutionary processes permeating the magnificent agricultural industry are forcing necessary changes. Many of our farmers have met these demands slowly, others have not, and consequently some of them have permitted the vital top soil to wash into the streams. The more progressive farmers have kept pace with and have on timely occasions made adequate adjustments and are farming under more satisfactory conditions. At no other time have the agricultural agencies been challenged to greater effort toward aiding farmers to make essential adjustments.

Today the farmer is faced with more problems affecting economic production than at any other time. Insects, diseases, insufficient nutrients in the soil, and irregular moisture conditions tax his efforts to the fullest. The cost involved in economic production has been mounting despite the splendid accomplishments in agricultural research in the development of good seed, improvement in fertilizer practices, and development of effective fungicide and insecticide materials. But all of these factors seem despite the splendid accomplishments in agriculture.

The future farmer will ever be conscious of the value of agricultural research. It is the life-saver of the agricultural industry. It is imperative that greater effort on the part of the scientist will be needed to develop plants resistant to insects, diseases, weather, and rapidly continued on page 30.
Tenancy in the South

By E. P. HUGUENIN, '42

This curse which smacks of Feudalism must be removed

It's an easy matter to hastily judge the tenant farmer. The pathetic thing about him is his poverty, and we quickly blame him for it. We indict him for lack of ambition, inefficiency, and having little or no initiative. These are the reasons we say he is poor . . . not because of these failings but in spite of them.

In a certain percentage of these folk, whom we think of when we speak of tenant farmers; they are guilty of having no ambition, and lacking efficiency but even if this is the explanation of their heart-breaking poverty; we couldn't afford to dismiss the problem with just that; it will remain unsolved. It is because of his lack of worldly goods that he has no interest in life and posterity—he's a beaten man from the start. He's mentally, morally, physically and spiritually dead. Tenants are pitiful, soul-sad- dening creatures of a selfish, cruel civilization that shows them no mercy. Their chance in life is denied them.

We rejoice in the marvelous advance this country has made in wealth, and consequently in its scale of living, and we have a right to our rejoicing. But at the same time it is a deplorable fact that although farming holds such a large place in our national life, the farmer gets so little to live on. The tenant gets even less to live on than the farmer, his plight is saddest of all.

In 1938 the committee that was appointed by the president to study the South as the “Nations Economic Problem No. 1,” stated in its report that the average tenant family received $73.00 per person for a years work, and sharecroppers in some cases as low as $58.00 per person for a years toil. These figures tell an eloquent and tragic story. The average family barely gets enough to keep body and soul together. Comforts, conveniences, recreation, and the things that lift men up are denied them, and it isn't any wonder that the sodden, dreary conditions in which they live has killed their spirit, and taken away their ambition. The marvel should be if any of these things were present. They can't provide a proper diet for themselves let alone their children. There's no money for a cow, hog, and surprisingly few can even afford chickens.

Something must be done about this important part of our population. Millions of these people are honest hard working folks, who are merely needing a chance and are asking nothing more. All can be lifted to self-respect and self-support if we lend a helping hand.

Cold and heartless self-interest if not human sympathy should prompt us to help these unfortunate people. They are a heavy drag on the prosperity of this country. They constitute fertile soil in which the unscrupulous may sow seeds of discontent, suspicion, hate, and revolt. We must not permit this intolerable condition to exist any longer, we can and we must do something to solve it.
Agrarian Personalities

FRANK E. ROGERS

H. C. ZERBST

E. L. YOUNG
Agrarian Personalities

Rising Staff

E. P. HUGUENIN
"Deacon Huguenin"
Associate Editor of THE AGRARIAN
Rising Editor In Chief of THE AGRARIAN
Vice-President Carnegie Music Society
Calhoun Forensic Society
Dairy Club
Bishop Finlay Club
Education Major
Dislikes Cowboy Pictures
Boogie Woogie Music
Doesn't Smoke
Likes to hunt
Hates snakes
Listens to classical music by the hour
Dignified
Friendly
Excellent Conversationalist

M. D. WATKINS
Business Manager

S. K. ABLE
Managing Editor

L. C. HAMMOND
Associate Editor

B. R. LEONARD
Circulation Manager

J. H. STEVENSON
Asst. Business Manager

R. C. WIGGINS
Asst. Circulation Manager

Z. T. FORD
Sec.-Treas. Kappa Alpha Sigma
Asst. Circulation Manager of THE AGRARIAN
Y.M.C.A. Council
Dairy Club
Cadet Lieutenant
Quiet
Reserved

W. B. NICKLES
W. B. Nickles, Circulation Manager of THE AGRARIAN
Kappa Alpha Sigma
Agronomy major
studious
Plans to follow agriculture after graduation
Favorite band: Gene Krupa
Likes brunettes and redheads
Reads ESQUIRE
Likes pipes, has a collection
First Lieutenant
Enjoys all sports, football best

JAMES E. BLESSING
American Dairy Science Club
Asst. Business Manager of THE AGRARIAN
Animal Husbandry Club
Block "C" Club
Dairy Club
Athletic
Outstanding football player
There are as many different ways for making silos as there are for making houses. But we need consider only a few here for they will fill any requirement. Silos are of two general types, the above ground or upright silo, and the below ground silo which is constructed by digging a hole in the ground.

The upright silos vary from very temporary structures to permanent structures. The permanent silos are made of concrete, brick, or tile. Concrete is the most popular. These are of two style, the solid concrete and the concrete stave. Both are very durable, sturdy, and trouble free. The stave type is usually the most economical to build. Sometimes the cracks between the staves leak when the silage is very wet, especially with grass silage. Silos for grass and legume silage have to be made very strong for these silages exert about twice as much pressure on the walls as corn silage. The acid in silage slowly eats away the walls of concrete silos. To retard this action, the walls of the silo should be brushed clean as the silage is taken out and the walls given a coat of oil. This can best be done every time five or six feet of silage is removed instead of waiting until all of the silage is removed, but cover the silage with sacks when the oil is applied to protect the feed. Wooden silos are cheaper to build, but they are not as durable as concrete.

Satisfactory upright silos can be made by filling snow fence lined with building paper. This makes a very cheap silo that can be put up anywhere at any time. Many of them have been used with much satisfaction, but a good deal of spoilage occurs in them.

Probably the best temporary silo, and it is not so temporary, is the trench silo where it is adapted. It is best suited to hard clay land where there is a low water table, as in the piedmont.

These silos are easy to make and cost very little. The main cost being labor, and this can be used when there is little other work to be done. There are two objections to the trench silo, there is a large surface area for spoilage, and the trench makes it hard to get out the silage. The surface spoilage can be greatly reduced by making the trench deep and narrow (but make sure the sides will hold or they may cave in with fatal results), and by covering the silage continued on page 25.
The Farmer’s Vegetable Basket

By R. N. GLEASON, '42


Approximately eighty percent of all farms in the United States maintain a farm garden. A quantity of vegetables sufficient for a family of five or six and having a market value of $100 to $150 can be supplied by a properly cared for half-acre garden. Farm gardens supply vegetables of much higher value than can be bought at most markets. This is true because the produce from the farm garden is available when needed fresh, and has high quality and flavor. Vegetables that are purchased on the markets usually have been shipped long distances or kept in storage and subjected to handling and exposure.

Fresh vegetables, especially the green leafy ones, have a high vitamin content and are a factor in safeguarding the family’s health. The farm garden becomes a time-saver during busy periods on the farm when there is little time to be spent going to the market for fresh vegetables. It is necessary that the garden be placed on good soil. One well drained, well supplied with organic matter, retentive of moisture, easy to work, and reasonably free from weeds should be selected if possible. The type of soil is not the most important factor; however, sandy loam soils can be worked earlier in the spring than stiff clay loams, but crops on the clay loams frequently withstand dry weather better than those on the lighter soils.

The garden should be located for convenience both in caring for the crops and in gathering the vegetables. Early crops can best be secured on a piece of land with a gentle slope toward the south or southeast. If the land is not well drained, the addition of tile drains, open ditches, or the loosening of the soil by subsoiling may improve the conditions.

It is best that the garden plot be selected some distance from hedges or trees. They not only shade the garden but compete with the garden crops for moisture and fertility. It is well known that sunlight is a vital factor in the production of vegetables, and for this reason the garden should be situated where it will be subjected to direct sunlight.

The garden should be surrounded by a fence sufficiently high and close woven to keep out poultry, dogs, rabbits, and other animals. Poultry, especially chickens, are a common menace to farm gardens, and if crops are to be grown they must be kept out of the garden. This can be done by fencing the garden or confining the poultry to a definite area.

Rodents, especially moles, are another menace in this section. Trapping and poisoning will help to control them. It has been found that carbon disulphide placed in their “runs” will give temporary relief, and moth balls will also help to drive them off.

Of special importance is the fertility of the soil. Stable or barn lot manure is the best garden fertilizer for most soils, especially those deficient of organic matter. On most soils the first application should be very large, and for following years enough should be added to maintain the fertility. Some crops such as beans and tomatoes do not require as much as others; therefore, the manure should be applied only to that portion of the garden on which crops that require fertilizing are to be planted. Most of the time it is necessary to add 50 to 80 pounds of

continued on page 23
Imagine plants twice the normal size, roots protruding above the soil on perfectly normal stems, bud inhibition, seedless blackberries, tomatoes and watermelons; also hybridizing plants with 16 chromosomes with a plant that is characterized by 32 chromosomes; no this is not a dream, each is highly possible. All the above is entirely possible, resulting from many years of concentrated chemistry and plant physiological research.

This “Black Magic” is rapidly developing in the fields of chemistry and agriculture. Many authorities may class this work as a study of growth promoting substances, but that remains unseen because this work is perhaps now at the stage of its most rapid development. However, this subject is not really new, as its beginning can be traced to the days of Charles Darwin and his associates.

By painting the proper amount of this growth-promoting substances that contain important plant hormones to the stems of plants, roots have been induced. Hitchcock (1835) and Zimmerman and Wilcoxon (1935) working with intact plants, induced root formation on stems by application of lanoline pastes containing indole-acetic acid and various other substances. Mueller (1935) in very accurate experiments has applied lanoline pastes containing urine, or orchid pollinia, to a number of decapitated plants, and the pastes caused inhibition of lateral bud development. Thus we can say the auxin’s process not only promotes growth and organ forming ability, but under certain conditions may also inhibit growth.

Seedless tomatoes have been developed by Dr. Zimmerman at the Boyce Thompson Institute continued on page 24.
Dairymen—Watch Milk Flavor

C. A. James, III, '43

Flavor the Difference Between Profit and Loss . . . .

Dairy men interested in selling more milk should be vitally concerned with milk flavors. What causes some milk to have a disagreeable flavor? How can this detriment be remedied? These questions will be discussed to some extent in the following article.

A group of milk flavor judges, after testing many samples of milk, compiled a list of detrimental flavors commonly found in milk throughout the country.

<table>
<thead>
<tr>
<th>Flavor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>acid</td>
<td>dishrag</td>
</tr>
<tr>
<td>alfalfa</td>
<td>fishy</td>
</tr>
<tr>
<td>apple pomace</td>
<td>flat</td>
</tr>
<tr>
<td>beet tops</td>
<td>French weed</td>
</tr>
<tr>
<td>bitter</td>
<td>garlic</td>
</tr>
<tr>
<td>bitter weed</td>
<td>fruity</td>
</tr>
<tr>
<td>burned feathers</td>
<td>grass</td>
</tr>
<tr>
<td>buttery</td>
<td>heated</td>
</tr>
<tr>
<td>cardboard</td>
<td>irradiated</td>
</tr>
<tr>
<td>cheesy (cooked)</td>
<td>medicinal</td>
</tr>
<tr>
<td></td>
<td>metallic</td>
</tr>
<tr>
<td></td>
<td>moldy</td>
</tr>
<tr>
<td></td>
<td>nutty</td>
</tr>
<tr>
<td></td>
<td>off</td>
</tr>
<tr>
<td></td>
<td>oil</td>
</tr>
<tr>
<td></td>
<td>old</td>
</tr>
<tr>
<td></td>
<td>onion</td>
</tr>
<tr>
<td></td>
<td>oxidized</td>
</tr>
<tr>
<td></td>
<td>papery</td>
</tr>
<tr>
<td></td>
<td>pasteurized</td>
</tr>
</tbody>
</table>

In reference to feeds which impart objectional flavors to milk, Babcock makes this statement, “Feed flavors and odors in milk are most frequently caused by succulent feeds. When fed to dairy cows one hour before milking, silage made from corn, alfalfa, sweet clover, or soy beans; and green alfalfa, cabbage, turnips, rape, and kale seriously affect the flavor and odor of milk. Green rye, green cowpeas, potatoes, dried beet pulp and carrots affect milk only to a slight degree; whereas green corn, green oats and peas, green soy beans, pumpkins, and sugar beets have practically no effect on the odor and flavor of milk.”

Cows have the ability to transmit objectional flavors in milk to their blood and the odors in turn are transmitted to the lungs where they are exhaled. Therefore, a good farm practice would be to take the milking herd away from the pasture two or three hours before milking and to carry on any additional feeding after milking.

According to Dr. Sharp, the taste of onion will be present in milk one minute after a cow eats a half a pound of such, and the taste of garlic will be present if a cow is allowed to breathe the garlic odor for ten minutes. Onions and garlic flavors are especially hard to remove from milk because their odors are soluble in the fat globules. In this event, it is advisable to clear pastures of onions and other objectionable weeds.

A cow poor in physical condition will most often produce a poor flavored milk. Naturally, the type of flavor varies with the physical disturbance. A severe case of mastitis markedly affects milk. Cows far advanced in lactation will often produce a salty or even a bitter tasting milk. This is due to an increase in sodium chloride and a decrease in milk sugar. For best results, by all means correct any and all physical defects in the dairy herd.

Because milk is such a sensitive food, it should be handled and processed with the utmost of care. Improper handling of the pasteurizer will give milk a cooked flavor. Milk utensils should never be made of copper, for this element acts as a catalyst in speeding up the oxidation of milk fat. There are certain enzymes present in milk which are capable of causing unfavorable flavors in milk under certain conditions. Lipase, for example, is present in milk, and it is capable of breaking down the fat globules into the fatty acids and glycerol.

Odors absorbed from the air in milk is an uncommon occurrence. However, extremely volatile substances such as rotting manure, onion, garlic, kerosene, and citrus fruits, will flavor milk.
Factors Influencing Soil Acidity

By C. B. FELLERS, '43

Lime . . . For the Lands Sake

Soil acidity is one of the basic limiting factors in determining the productivity of our soils. Farmers in South Carolina are becoming more and more aware of the acid condition of the soils in this state and realize that this condition must be remedied before a profitable and a more diversified system of agriculture can be established. Past soil surveys indicate that only about 20 percent of South Carolina's agricultural soils are in a proper condition, as to their acidity, for best plant growth. Realizing the seriousness of this problem in South Carolina, it is believed that a brief explanation of the nature and causes of soil acidity will be helpful to many.

Any moist soil always contains a certain concentration of hydrogen (H)⁺ ions and a certain concentration of hydroxyl (OH)⁻ ions. Acidity is due to the presence of an excess of (H)⁺ ions and alkalinity to a preponderance of (OH)⁻ ions. Since such a large concentration of ions is present, soil scientists have devised the term pH to represent the hydrogen and hydroxyl ion concentration. If acid is added to a soil, the hydrogen ions increase and the pH decreases. If alkali is added, the pH increases. A decrease in unit pH means a tenfold increase in the H⁺ ion concentration, and a corresponding tenfold decrease in the OH⁻ ion concentration.

Below will be found a suggested interpolation of pH's for minerals oils.

<table>
<thead>
<tr>
<th>Very alkaline</th>
<th>above 7.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkaline</td>
<td>7.0 to 7.5</td>
</tr>
<tr>
<td>Neutral</td>
<td>7.0</td>
</tr>
<tr>
<td>Slightly acid</td>
<td>6.0 to 7.0</td>
</tr>
<tr>
<td>Moderately acid</td>
<td>5.5 to 6.0</td>
</tr>
<tr>
<td>Highly to moderately acid</td>
<td>5.0 to 5.5</td>
</tr>
<tr>
<td>Highly acid</td>
<td>4.5 to 5.0</td>
</tr>
<tr>
<td>Very highly acid</td>
<td>below 4.5</td>
</tr>
</tbody>
</table>

The work of several investigators indicate that a direct toxic or destructive effect of an excess of hydrogen ions (acid) or hydroxyl ions (basic or alkaline) on root tissues probably does not take place except at extreme acidity or alkalinity. The reaction of the root sap of most agricultural plants fall in the acid pH range of 4.5 to 5, indicative that plant tissues are so constituted as to stand the acidities ordinarily found in soils. Various tests have shown that the reaction range of pH 6 to 7.5 (slightly acid to slightly alkaline) is the most favorable for the common agricultural plants.

Most South Carolina soils are too acid for best crop production. There are several reasons for this condition. Most of our soils are derived largely from acidic rock materials that are relatively low in calcium; therefore, most of our soils are acid. If the basic elements, especially calcium and sodium, are largely removed by leaching during the weathering process, the soil on formation becomes saturated with hydrogen rather than bases, and the resulting soil is acid. If on the other hand the calcium and sodium are not removed by leaching and remain to saturate the soil as it is formed, the resulting soil is then not acid but may even be alkaline. The extent of leaching is determined largely by rainfall, age of soil, temperature, and vegetation.

The use of certain fertilizers has long been known to increase soil acidity. In this connection ammonium sulphate has received considerable attention. When it nitrifies, two acid products result—nitric and sulphuric acid. These are both soluble and thus make the soil solution more acid, also increasing its tendency to remove bases from the soil so as to form a soluble salt. The soluble salt may be absorbed by plants or removed in the drainage water. In either case, the soil has lost some base and the soil as a whole is just that much more acid. Removal of bases at a greater rate than the the acids through cropping also tends to leave the soil more acid by depleting the exchange acids of their bases. The legumes, particularly alfalfa and clover, make a heavy drain in this respect.

The most practical and economical way of checking soil acidity is by the application of lime. In 1939, approximately 130,000 tons of lime were used in South Carolina. Nitrate of soda, calcium nitrate, and basic slag also tend to check the swing toward a more acid condition of the soil.
Instead of Hay----Ensile

By M. I. JENKINS, '41

What kind of silage shall I make? Grow the crop that will make the greatest tonnage with the least cost on your land. Any forage crop can be made into good silage. While there is a difference in the value of the silage made from the different crops, this variation is not great. The adaptability of the crop to your farming conditions should be the chief factor to guide you in your selection. There is probably one exception to this rule and that is the case of legume silage. Legume silage does not contain much more carbohydrates than grass silage and not as much as corn silage, but its high content of protein offsets its low yield per acre.

In sections where it will make good yields year after year, corn is the old stand by and the best producer of silage. But in many cases corn is either drowned out or drought greatly reduces its yield. In these places sorghum silage will probably give a much higher yield and it is nearly equal to corn silage in feeding value. Grass silage is cheap to make and easy to handle, but it does not produce the yield of corn or sorghum silage. Legume silage is not so well known as corn silage but it is growing in popularity and it definitely has a place in the feeding program. Legumes are the hardest crops to make into hay and they suffer many losses. The coarse stems are hard to cure and they are unpalatable, the leaves shatter badly and the stacks and bales mold easily. Good legume silage is not hard to make, it is palatable and it is very nutritious. Legume and grass silage fit readily into the soil conservation program. These close growing crops stop erosion, build the soil, require little labor and some of them can be harvested twice a year. When pastures are growing rapidly in the spring and get beyond the control of the cattle, they can be clipped and made into the silage. The silos are usually empty at this time of year and this grass or legume silage will come in handy for feeding when the pastures are dry and short during the hot summer month.

There are two requirements to the production of good silage 1—Exclude all air from the silo by packing it well. 2—Have an adequate supply of carbohydrates and the right bacteria to form lactic acid or add enough inorganic acid to legume silage so decay can not take place. Have enough moisture in the silage to make it pack easily and cut the silage fine. The dryer the silage the finer the cut and the wetter the silage the coarser the cut should be. Silage between sixty and eighty percent water seems to give best results. Crops much dryer than this have been successfully ensiled, but they are hard to pack and they are apt to mold. When there is too much moisture, a great deal of leakage will take place and the silage may develop a bad odor. Corn and grass silages need only to be cut and packed into the silo. The lactic acid will be produced by the bacteria in the plants. Legume silage has to have some preservative added. Many farmers add sorghum, corn or grass silage to the legume. This makes it keep well and makes it more palatable. If you do not wish to add another roughage to the legume, molasses, or cracked corn or other concentrate may be added. Hydrochloric or phosphoric acid is fluorine free, for fluorine is poisonous to cattle. The molasses silage is more palatable to some cows than the acid silage and it is more extensively used than the acid silage. However, the acid silage preserves more of the vitamin A in the legumes.
The Scourge of the South

By T. E. Garrison, '42

THE BOLL WEEVIL

In the spring and summer a young man’s fancy turns to love, but a farmer’s fancy turns to farming. The major crop in the south is cotton; therefore, the farmer is concerned with cotton and its problems. One of these problems is the boll weevil which reduces the yield of cotton considerably. We know this because in the cotton field in July and August the ground is often covered with squares and bolls punctured by boll weevils.

The history of the boll weevil in the United States is comparatively short. It is a native of tropical America and invaded the United States in Texas in 1892. It moved east year by year until it reached South Carolina in about 1917. The farmers and the experiment stations of the south have done a great deal of work with the control of the boll weevil in the last fifth of a century.

The adult weevil is about one-fourth of an inch long, light brown in color when it first enters the adult stage, black in color several days later, and has wings. The adult lives during the winter in trash in fields and woods, bark of trees, and cracks in the ground. It is a common belief that large numbers of the weevils survive the winter. In spring the adults come out of their winter quarters and start laying eggs in the squares and bolls on the young cotton. The eggs are laid singly and hatch in about three to five days into the larva stage. The larva is the white grub with a brown head that we find in the squares and young bolls. The larva eats inside of the square or boll for a week or two. Then it changes to the pupa stage which lasts from four to six days. The adult is then developed and ready for another generation. The total time from the time the egg is laid to the adult stage is about three weeks. The boll weevil belongs to the class Hexapoda, a subclass Pterygota, order Coleoptera, and sub-order Rhynchophora.

CONTROL

The main thing the farmer is concerned with is the control of the boll weevil. There are several ways to reduce the losses due to this insect. These are: killing the insect directly, destroying the breeding places, planting early, and spacing the rows and stalks close together.

We can avoid many of the boll weevils if we plant our cotton early, plant early varieties, fertilize the land heavily, and by cultivating the cotton. (An ounce of preventative is worth a pound of cure.) If we plant the rows and stalks close together there will be more early fruit which will escape the heavy crop of boll weevils.

We should destroy the wintering over places by plowing the stalks under before frost and by any other method that is practicable. It is not advisable to burn forests to kill the boll weevil.

We may use dust or liquid poison to control the insect. Both poisons have advantages and disadvantages.

We should start dusting when an average of ten percent of the squares have been punctured by boll weevils. Below this the weevils are not considered serious. We apply calcium arsenate at the rate of about six pounds per acre. This dust must be applied when the cotton stalks are moist and the air is calm. We must apply it either early in the morning or a few hours after the sun has set. Three applications should be made every three or four days. If it rains in twenty-four hours after applying the application it is wasted and should be applied again. According to South Carolina experiments the dust lowers the yield of crops on light soils and often the crops on all soils are attacked with plant-louse infection when the dust is used. There are several machines for dusting the cotton: hand-duster, saddle duster, one and two row mule duster, and other dusters.

The liquid poison method has proven to be most profitable and economical in the last few years. The mixture that is regarded as tops is: one gallon of water, one gallon of molasses, and one pound of calcium arsenate. It is known as sweet 1-1-1 mixture. It is usually applied with a mop made by tying a piece of burlap on the end of a stick. There should be three or four applications made a year. It should be applied as soon as squares start forming.
Dairy Farming as a Way of Life

By G. W. Ballentine, '52

During the gold rush of 1849, men had to make a journey of two to three thousand miles requiring several months. Today with our modern roads and high speed automobile the same distance can be covered in five or six days. It seems reasonable to believe that the dairy industry would make as much progress as the automobile industry, but it hasn't. The average production of 25,000,000 cows in the U. S. is 164 pounds of fat per year. The sad fact is that this low production is just 4 pounds above the average production 40 years ago. This question has often been asked: "Why is it that so little progress has been made in the field of dairying?" The primary reason for this low production is the number of scrub cows and bulls in the dairy herds. The second reason is poor feeding practices.

In the U. S., 90 percent of the bulls used in our dairy herds are unable to sire daughters which will produce 350 lbs. of fat per year. Under average farm conditions a cow must produce 165 lbs. of fat per year to pay for her feed, care and depreciation. Each pound of fat over this amount is profit. With good feeding and management a cow should produce 300 lbs. of fat to make a reasonable profit for the dairyman.

Many cows are bred for high production, but are fed on poor quality feed which makes them scrub producers. It has been said that not more than 10 percent of the cows in the U. S. are fed a sufficient ration for best production. The cheapest way to produce cheap milk is to provide abundant pasture for spring, summer and fall grazing. If a cow has plenty of good high quality pasture during the summer months, production can be kept at a high peak on a minimum amount of grain. By feeding all the high quality legume roughage that a cow can eat during winter, a minimum of 500-1000 lbs. of grain will be needed per cow per year.

The profits of a dairy farmer depend upon his ability to have a clear vision of his aims, keep only high producing cows in his herd and to provide a complete quantity of good pasture and legume roughage. When he has succeeded in doing these three things he will have a successful and profitable dairy farm.
BETWEEN THE

Ag. Fair Plans

The agricultural and agricultural education students are planning to have another Ag. Fair for the year 1941-1942. With the success of the last Ag Fair the students feel that they can profit by mistakes and put on another successful fair.

The executives of the last fair recently named the head for the 1941-1942 fair: T. E. Garrison is chairman of the executive committee. This committee plans to do some work before school is out and be ready to get an early start at the beginning of next year.

The election of the manager, assistant manager, departmental heads and assistant departmental head will be held before school closes or at the first of next year. All agricultural and agricultural education students can vote for manager and assistant manager. Each department will elect its head and assistant head.

The Animal Husbandry Club Project

The Animal Husbandry Club recently attended “Open House” at the Y. M. C. A. At this meeting the new officers for 1941-42 were elected as follows: L. C. Hammond, President, Vice President, T. V. Wilson; Secretary, E. B. Collings; Treasurer, M. O. Berry; Reporter, W. F. Irwin.

The club is publishing its first annual “News Letter” this semester. This publication is edited by R. N. Gleason assisted by J. R. Burrows, C. B. Fellers, and J. T. McComb.

A. S. A. E. Elects New Officers

At the last regular meeting in May, T. V. Wilson, rising Agricultural Engineer senior, was elected president of the Clemson student branch of the American Society of Agricultural Engineers. He will succeed R. J. Berry as leader of the group. Wilson, of Piedmont, is an outstanding scholarship student, being the highest ranking junior Agricultural Engineer.

Other new officers elected from the rising senior class were E. F. Stenstrom of Wauchula, Florida, to succeed C. J. Bethea as vice-president, and J. H. Jones of Boiling Springs, North Carolina, to succeed F. E. Rogers, as secretary and treasurer. S. A. Knight, Jr., rising junior from Summerville, was elected reporter to succeed E. M. Johnson.

Kappa Alpha Sigma

Thirteen new members were recently initiated into Kappa Alpha Sigma, the Clemson Chapter of the American Society of Agronomists. Officers for next year were also elected. New officers who were elected are: H. H. Fellers, President; H. W. Hollis, Vice-President, R. G. Gettys, Secretary and Treasurer.

4-H Club

Ben Leonard, Vocational Agricultural junior from Due West has been elected president of the Tri-State Collegiate 4-H Club Conference to succeed Dorothy Banks of the Woman’s College of the University of North Carolina. N. C. State University of Georgia, W. C. U. N. C., Winthrop, and Clemson were represented at this meeting.

Agronomy Seniors Get Work

Dr. G. H. Collings, Professor of Soils, recently announced that seventeen of the twenty-nine Agronomy seniors are going in the army. Several of the non-R. O. T. C. boys have been employed by the Soil Conservation Service. Three or four of the Agronomy seniors are going to do graduate work.
Collings Revises Book

The third edition of "Commercial Fertilizers", an agricultural textbook written by Dr. G. H. Collings, Professor of Soils, has been sent to the printers for publication sometime in May. The book, printed by The Blakiston Company, will be bound in waterproof binding and will contain numerous color photographs, Dr. Collings said.

A. S. A. E. Gives Banquet for I. H. C. Officials

The Clemson student branch of A. S. A. E. held a banquet for some of the prominent officials of the International Harvester Company in April. Mr. H. P. Howell, Sales Promotion Manager, of Chicago, gave the address of the evening. Mr. Howell spoke on "How to Sell Oneself to an Employer."

Good Showing Made By Judging Team at V. P. I.

At the Southeastern Judging Contest held at V. P. I. the Clemson Judging team won first place in judging cattle, shared first place with Southwestern in judging hogs, and came fourth in the entire contest. The judging team is composed of the following men: F. A. Gregg, D. C. Herlong, H. H. LaMaster, R. L. Bull, H. L. Crouch, M. D. Watkins, and is coached by Professor E. R. Hauser.

Block And Bridle Judging Contest

At the judging contest here at Clemson sponsored by the local chapter of the Block and Bridle Club, the following men were winners in the senior division; H. H. LaMaster first place on mules, D. C. Herlong first place on sheep, T. E. Garrison first place on cattle, and C. B. Lowman first place on reasons alone. H. H. LaMaster was high-man of the entire contest on reasons and placing.

Alpha Zeta

New Alpha Zeta officers who were recently elected are: W. M. Hobson, Chancellor; R. E. Gettys, Censor; H. H. Fellers, Scribe; T. V. Wilson, Treasurer; and L. C. Hammond, Chronicler. These new officers officially took charge on April 25, when they held the final formal initiation of new members. These new members are: R. L. Stoddard, L. C. Martin, R. L. Scarborough, W. L. Betsill, E. V. Legare, W. W. Gardiner, T. C. Moss, and E. B. Collins.

On April 5, the forty-fifth chapter of Alpha Zeta was installed at Auburn, Alabama. The installation was attended by several cadets with Mr. R. A. McGinty, who is an alumnus of Auburn.

The Agrarian wishes to compliment the editors of the "SLIP STICK" on their well-written and instructive articles in their last edition. The article that created quite a bit of interest was "THE TENNESSEE VALLEY AUTHORITY" By S. R. Finley, '18. "THE VECTORSCOPE" by J. E. Woodward, EE. 41' is highly technical but the author read it and even understood some of the terms. The article that almost any "Ag" student could understand was "TELEPHONE COMMUNICATIONS", by Professor A. B. Credle, Asst. Professor of Electrical Engineering on the various and sundry means by which the telephone came into being. There was even a picture of an old telephone that was and as far as the author knows may still be in use here on the campus, and for comparison a picture of a much later model.

The "Editors" join in with the CADET CORPS in wishing that all in the state could see the campus as it is and will be for the next few months, a riot of various shades of beautiful green. Our campus is considered one of the most beautiful in the UNITED STATES and it's worth anyone's time to take a day off from their duties and drive up. Perhaps on that day the CADET CORPS will parade and this alone would repay one for coming up. Remember and come to see Clemson, you are always welcome.
The Need for Crop Diversification in the South

By H. M. SIMONS, '44

The South has frequently been referred to as a region of one-crop farming. This statement is true only to the extent that cotton is the major cash crop. Corn, peanuts, sweet potatoes, rice, small grains, pecans, and numerous fruit and vegetable crops are grown.

However, most of these crops are clean-cultivated and are usually found in combinations that do not lend themselves readily to systematic farming that prevents soil erosion and loss of plant nutrients from the soil. An average of nine Southern states showed that nearly seventy-five percent of total farm acreage under cultivation was used to produce cotton, corn and grain sorghums, and only 7.5 percent was used for hay production. These figures indicate the pressing need for wider divergence of crops in the South.

The South has been called the nation's number one economic problem, and not unjustly so, for our standard of living is lower in comparison to other sections of the country. Being largely an agricultural section, the prosperity of the entire South is reflected by the economic status of its farmers and the fertility of its lands. Therefore, it is of vital importance that progressive methods of increasing soil fertility be practiced, and that a wider range of crops should be grown.

Farm experience has proven the value of the incorporation of large quantities of vegetable matter in the soil as a means of rebuilding and maintaining soil fertility in the South. The system of one-crop farming has ignored this obvious principle so completely as to bring about a tremendous loss of soil fertility, and in some cases to even cause soil erosion.

Quite like other early settlers in other sections of the country, pioneer farmers of the South did not immediately recognize soil fertility problems. They cleared the land of trees, and for several years good crops of corn, cotton, and tobacco were produced along with small grains in some sections. Land was plentiful, and when the point of low soil fertility was reached, more land was cleared, the old land being allowed to grow up in broom sedge and seedling pines.

Today, however, we are faced with problems which our forebears never had to face, and perhaps, of which they never even dreamed. Vital problems of soil conservation, labor problems and market conditions must be dealt with by the farmer if he is to get fair returns from his crops. In addition, he must be able to predict in advance the probable best selling cash crops for a particular season.

The eventual future of the South will be realized through the utilization of its great store of raw materials, chief of which is its soil. When the South fully realizes the value of its land through the medium of diversified crops, it will cease to be the nation's number one economic problem, and instead it will become a truly great agricultural and industrial region in our unified nation.

CLEMSON COLLEGE
ROADSIDE MARKET
Open April 15 to December 15
We sell over 100 varieties of peaches, and many varieties of apples, grapes, plums, cherries, raspberries, dewberries, pecans, etc.
Many of these varieties have better appearance and quality than the varieties usually grown in home or commercial orchards. Try some of these delicious fruits this season.

THE HORTICULTURE DEPARTMENT
The Changing Role of the County Agent

By J. A. MIXON, '43

America’s vast capacity to produce has not been by chance but has been brought about only with great effort extending down through history. First, we were endowed with great natural resources; second, the agriculturist’s optimism, ideas of exploitation, and enthusiasm to improve techniques and methods of production have been vital factors in our attaining this peak. This favorable progress, however, is somewhat responsible for most of our present ills, particularly that of overproduction.

In Europe today there lurks the fear and threat of food scarcity; in America our concern is with the other extreme—commodity surplus. A conception of our agricultural progress can be traced through acts of the United States Government which were directed toward progressive farming. As far back as 1776, proposals were made for the creation of a Federal Department of Agriculture. George Washington organized a board for the purpose of improving Agricultural methods through research. He instructed Consuls and naval officers who went abroad to send information of improved methods and new discoveries. John Quincy Adams established a Botanical Garden and organized a committee on agriculture in the Senate. A similar committee has been established in the house five years earlier. In 1839 Congress appropriated $1,000.00 for collecting agricultural statistics, conducting agricultural investigation, and distributing seed. After 1847 annual appropriations were made for these activities.

Since the creation of the United States Department of Agriculture in 1862, development has been rather rapid. The year 1887 marked the birth of the experiment station. The turn of the twentieth century saw a new field of service inaugurated—the County Demonstration work. All of these government activities were climaxed in 1914 by the Smith-Lever Act providing for County Agricultural Agents.

The County Agent came at a very opportune time, during the era of the World War. Our government, to avoid a food shortage, sought to stimulate Agricultural development, lifted it from its rational course of progress, and forced it to an unnatural exertion in response to an abnormal demand. In order to attain this production peak, complex changes had to be made. The County Agent’s task was to aid the farmers in becoming better producers. Therefore, his role was one of a scientist, educating farmers to the improved methods, always aiming at greater production. Statistics reveal only 9 percent more animal units on farms than in 1901, but during this period meat, milk, and egg production increased 55 percent.

After the war when the soldiers of Europe beat their swords into plowshares and once more became self sufficient, we accumulated commodity surpluses. This situation may be viewed as an indication that the County Agents have accomplished their purpose. But, contrary to this view, their services are not less but vastly more important now than ever before. This is true because economic problems facing the farmer now are more incomprehensible than were the scientific methods taught him in the past.

Complex changes have affected the whole of American Agriculture methods of production, quantities produced, the manpower needed in farming, capital requirements, size of farm units, the organization of the farm, operating cost, conditions of tenure. It is not too much to say that our destiny will depend to no small extent on the County Agent’s understanding of these factors and his ability to direct them for the service of our people.

Clemson College Summer School
First Term: June 9—July 19; Second Term; July 21—August 23, 1941
Some College Courses in Every Regular Clemson Curriculum
MANY COURSES FOR TEACHERS—A REAL DEMONSTRATION SCHOOL
Special Courses for Textile Men, Cotton Classers, Auto Mechanics, Stenographers, Vocational Teachers and Guidance Counselors, Cosmetologists and Teachers of Cosmetology EXPENSES REASONABLE—STANDARDS HIGH COEDUCATIONAL
For Catalog or Reservation Write:
W. H. WASHINGTON, Clemson, S. C.
The War and the Farmer

By J. L. Schaffer, '43

At our Agricultural Fair there was on exhibit that all far-sighted persons had to take note of—that was the effect of the present war on our exports of agricultural products. In all too vivid charts, the Agricultural Economics department showed how our agricultural exports were declining due to the present war.

First, and most important to the Southern farmer is cotton. Cotton was hit very hard by the war. The first year of the war we exported six million bales, but the second year it is not expected to exceed one million bales. Compared with pre-war levels, this means that cotton producers have lost a market of four million bales, which is equivalent to about one-third the crop produced last year.

Tobacco does not present a brighter picture. Unless the United Kingdom takes up options it owns on our tobacco we shall not export over two hundred million pounds compared to the four hundred and fifty million pounds average prior to the present hostilities.

The fruit growers are hit extremely hard by the war. Apple exports have gone down to nothing. Before the war they exported about 12,000,000 bushels of apples, but they do not expect to export over one-half of a million now. All citrus fruits exports have gone down about 50 percent.

All in all, our exports the first year of the war were 765,000,000 dollars but they are not expected to go over 325,000,000 dollars this year, the second of the war.

Now what is the farmer going to do? The present National defense program will take a good bit of surplus, thus alleviating some of the pressure, but this will not solve the Southern farmer’s problem. There must be other things done to help the farmers of the United States. A program that must include the following:

A. Expand efforts for the consumption of food and clothing among low income groups.
B. Need for reclaiming foreign market when the war ends.
C. Continuing readjustments in farm production.
D. Continuing to protect agricultural price structure.
E. The need for anticipating readjustments when the present defense program ends.
F. Remembering the fact that soil conservation is an essential element in any long-run program for agriculture.

All the above are requisites in any program we may plan to aid the farmer.

The southern farmer by far is worse off than the farmers of any other section of the United States. The foreign market for cotton is about gone, and it has a very dense rural population. The gravity of his problem is certain to increase as the war continues.

Our only hope is that a far-sighted program will be put into effect that will decrease our production of commodities, so there will be no great surplus, and to stabilize prices so the farmer’s plight will not be too greatly aggravated by the present war and its far reaching effects.
1926, and he qualified for his PhD. in 1928. From Cornell the newly-made doctor went to Oklahoma A and M College as Associate Professor of Horticulture. His one year term at Oklahoma ended when he went to the Louisiana Experiment Station as head of the Horticulture Department.

Under Dr. Miller’s direction many new varieties of crops have been developed. At present, work is going on toward the development of new and better varieties of sweet potatoes. Other crop improvements include an early maturing cabbage, the Louisiana Copenhagen; the Louisiana sweet collard; three new hot peppers; the Louisiana Sugar Bowl squash; the Klonmore strawberry and numerous other profit-increasing crops.

Dr. Miller has had numerous horticultural papers published and is widely known for his experimental work. Only recently the Country Gentleman and the Progressive Farmer carried discussions of his work.

Clemson graduates in all fields have attained varying degrees of success, but few have gone farther or done more for agriculture than Julian C. Miller, Head of Horticultural Research at the Louisiana Experiment Station. Dr. Miller graduated from Lexington High School in 1915 and entered Clemson in the fall of that year. World War I interrupted his collegiate career in 1917 when he entered the navy. During his two years of service, he attained the rank of Ensign in the Naval Reserve. 1919 saw him resume his studies in horticulture at Clemson, and in 1921 he secured his diploma.

Dr. Miller then became an instructor at North Carolina State College, where he remained for a year and a half. From there he came back to his native state to enter the Extension Service and served as county agent in McCormick and Orangeburg counties. The offer of a graduate fellowship at Cornell caused Dr. Miller to resign in 1925. His master’s degree was obtained in
What is An Entomologist?

Editor's Note—While working as an entomologist in North Carolina, Professor Franklin Sherman, now at Clemson, received a letter from a young lady inquiring as to what an entomologist was. This unique bit of prose was his answer. The young lady had the last word by having it published in the "Progressive Farmer."

I've noticed several times of late,
When I've been around the state,
That folks inquisitive, like you
Will say, "Now tell me what you do.
I hear that you an office hold,
And spending lots of public gold,
I'd like to get a faint idea
Of how you earn your salary."
And while he does not say the rest,
I've often thought that in his breast
The questioner the notion hugs.
That any man who studies bugs
Must be, to put the matter light
A sort of public parasite.
And so today when I had signed the mail
And had it off my mind,
I thought I'd run the letter through
And summarize a few for you.
Here's a note from a man named Brown
Whose home is Mount Airy town.
He says his apple trees are sick,
Can I suggest a tonic, quick?
I write him that I would some day
The present winter make a spray
Composed of Sulfur and of lime
And that it should bring them to time.
And now here comes another one
A man from little Washington,
Who says, he in a paper sees
That we can doctor honeybees.
And as he keeps a few old stands
Why, he just naturally demands
That we tell him all we know
Of how to make the thing a "go."
And so I strive his heart to win,
By mailing him a bulletin,
Which gives a little summary of facts
Compiled from inquiry conducted several years ago.
And this I hope will help him so
That, he can make the business pay
And swim in honey every day.
Another writes, "Will you please see
What this is on my 'simmon tree?"
I send a twig to show a scale
Which seems the branches to assail,
Not that I care so much about this tree,
But I'd like to find out if it is likely to attack
The orchard near my shack."
But it is not, I tell him so,
And with that let the matter go.
The next, and this straw almost broke the camel's back
Is like a joke.
A firm way up in Philadel,
Inquires to know if I will tell
As near as may be the amount
Of poisons used on all account
To kill the bugs on tree and vine
In all the state of North Ca'line?
Be—gobs, they must think
That I've seen the orders for the Paris green
And arsenate of lead and all the other poisons
I could call
And that I have kept a record true
Of all of it, for them and you.
Another found his apples thick
With bugs the size of fleas,
Which bore small holes the size of shot,
And damaging the trees a lot.
I write him that the strongest dope
Is strong solution made of soap.
About a pound of soap sliced thin
And boiled, a pail of water in;
And this applied with brush or mop
Should make the little rascals hop.
A gentleman in Franklin-ton
Found bugs his cabbages upon.
He says they suck and kill his leaves,
Until his heart turns sick and grieves.
He says this bug (the Harlequin)
Will stare him in the face and grin
And kill his cabbages despite
Of all his labors day and night.
It is the first bug he has seen
That seems immune from Paris green,
And he would fain my aid invoke.
Poor man, I know his heart is broke,
For he must rise early in morn
And pick them off by hand at dawn.
For Paris Green is of no use,
Against a bug that sucks the juice.
Lo! Here's a letter from a gent,
By Uncle Sam to Texas sent,
Who's taking up pellagra's scare
And wants me to compile with care
All data that had come
About the flies Si-mu-li-um.
For these wee creatures thought so small
It may be that they carry all  
The germs which cause this dread disease,  
Will send him my records, please?  
A lady who takes greatest pride  
In hedges by her garden side  
Sends me a sickly-looking leaf  
And says it is her best belief  
That some cale insect or disease  
Has seized the bushes.  
Can I please advise her what to do,  
And thus restore the sick unanimous?  
She must use a wash of oil  
Prepared with soap by utmost toil,  
And patience and persistence, too.  
Must be her aids this work to do,  
Because against this little scale,  
No half-way measures will prevail.  
And what I've mentioned here, I'll say,  
Is from the letters of today.  
And while I do not make the claim,  
That every day brings me the same  
Yet this is not exceptional,  
In fact, it is quite typical.  
Now how can one make sound replies  
To such a range of inquiries?  
Is "pull" and "influence" enough?  
Can all these folks be fed on guff?  
Can any man who does not know  
A bug from fish or buffalo  
Give out the names and habits too,  
Of all these pests as we must do?  
And how can one know when to say,  
"The remedy for this is spray,"  
Or "This one is controlled by soap,"  
Or "Paris Green," or other dope?  
Ah no, my friend, you've not begun  
To sound the depths wherein we run.  
The world holds men by the scores today,  
As keen as ever made of clay,  
Whose lives are spent in solving tasks  
Which at our hands the public asks.  
And while most persons never see  
Science in Entomology,  
Yet there it is as deep and true  
As my offering aid to you.

THE FARM GARDEN
continued from page 9

superphosphate to each ton of manure to aid in  
the decomposition and also greatly increase its  
value as a fertilizer. Lime should be applied  
when it is definitely shown by actual test to be  
needed. Most of the garden vegetables do best  
on soils that are slightly acid, and the addition  
of lime when it is not needed will cause injury  
to them.

To get the greatest returns and benefits from  
a farm garden, all space should be fully occupied  
throughout the growing season. Often it is possible  
to have certain vegetables growing in the  
garden every month of the year. A good practice  
is to follow the present crop with some unrelated crop. Crops of the same kind are often attacked by the same diseases, and unless an unrelated crop is used, there is danger of some disease present in the former being transmitted to its successor.

Always plan ahead and be sure to have a  
supply of seed when planting time comes. Seeds  
saved at home should be carefully inspected  
before they are planted because much time and  
labor are wasted in planting seeds that fail to germinate. Seeds can be safely kept and protected from mice if they are put in a tin box or can and kept there until time for planting.

A farm garden properly planned and cared  
for will add materially to the well-being of the  
farm family by supplying foods that might not  
otherwise be provided. If a "Live At Home"  
program is to be carried on successfully, the  
farm garden cannot be neglected.

Clemson College Laundry
Miss Cornelia Ayer Graham, B.S.

Miss Graham, Clemson's head librarian, although originally from Georgia, considers herself a true South Carolinian as her father and mother, Mr. and Mrs. Bothwell Graham, came from Barnwell and Edgefield counties respectively. Besides, Miss Graham has had her permanent residence at Clemson, for the past nineteen years.

Miss Graham graduated from the Georgia State College for Women, and later completed a librarians' course at Columbia University. She has seen a bit of the outside world, for she traveled through twelve foreign countries during the summer of 1938.

Last summer Miss Graham traveled through North Carolina, Virginia, and Georgia where she inspected the libraries and museums of most of the roved colleges in those states. She discussed library problems with the librarians of these colleges and received a wealth of ideas for the Clemson College Library.

Miss Graham began her career at Clemson in 1922 when she became an assistant to Miss K. B. Trescot, head librarian at Clemson then. During the nineteen years following, she held every position the library had to offer. One interesting feature in her work was her five years experience as head of the agricultural reference department where she was in charge of all books, publications, and bulletins pertaining to agriculture. After ten years of hard work, in August, 1932 Miss Graham became head librarian and has held the position ever since.

Perhaps a few of us are not aware of it, but Clemson's head librarian is a women of notoriety for she is listed among Who's Who Among Librarians, Who's Who In Education, and she has recently been asked into Who's Who In South Carolina. She is quite proud of the fact that she is one of the Daughters of the American Revolution and of the United Daughters of the Confederacy. In 1934 she was elected secretary of the South Carolina Library Association, and in 1936 she was elected president of the same group. She has also served on a number of committees for this organization.

During her spare time, Miss Graham finds it enjoyable to read a good book. She belongs to the Presbyterian Church and is a member of the Church Auxiliary Circle.

Miss Cornelia Ayer Graham is truly one of Clemson's most valuable women, for her chief interest is Clemson and "putting Clemson on the map" by a continued improvement of the library. Miss Graham claims she has spent the best portion of her life in her nineteen years at Clemson, for she has grown and worked with the College during those years. For the splendid part she has played and is playing in making Clemson College one of the finer educational centers of the Nation, we salute Miss Graham.

BLACK MAGIC

continued from page 10

for Research at Yonkers, New York: from an organic compound named Ethyle b Naphthoxy-acetate. One can see the importance of such an experiment as seedless watermelons may be developed, imagine eating watermelons without taking time out for the disposal of seed. The biochemical and physiological causes of fruiting without the usual fertilization of the seed by the male germ or pollen caused by this organic compounds have not been discovered, but with new discoveries and painstaking research much can be learned.

One can not very well write an article concerning the "freaks" of chemistry on plants, without saying a few words about the highly publicized colchicine. This compound has a powerful effect on plant tissue, its most useful function being the power to effect the number of chromosomes in a plant. Crossing one species which has 16 chromosomes with one that carries 32, can not be done normally, but if colchicine is used on the 16 chromosome plant, the two will unite and a cross will result which may cause interesting and valuable new hybrids. As many physiological concepts hold true in plants as well as animals, this organic compound may be highly benefical to the animal breeder as well as the plant breeder.

The proper use of organic secretions or hormones to promote growth will focus much light on the various scientific fields of agriculture. If growth substances are present in organic manures, a knowledge of this presence will help us to understand more about soil fertility. These substances will enable the plant breeder to propagate plants from cuttings and seeds, bud inhibition, and fruiting without pollination. By the proper use of these various chemical compounds they will pay higher and higher returns to the nation.
Farm Plan Contest
By C. B. FELLERS, '43

L. C. Martin

Mr. C. L. Stevens of Baltimore, Maryland, made available $500.00 to be awarded as prizes to students of Clemson Agricultural College and the University of Georgia for preparing plans for the operations of a family-sized low country farm. In preparing this farm plan, the students assumed that they were the operator of the farm and that they had no personal preference as to type of farming. They carefully decided on the system of farming that seemed most logical for this farm. After deciding on the system of farming, the contestants described the recommendations sufficiently to make its workability clear.

The manuscript was limited to 2,000 words; tables, maps and explanatory legends were not included in the word limit. A table of estimated receipts and expenditures by months and a summary for the year were turned in with the farm plan. Based on the preceding estimates, a financial plan for a year was submitted. Included in the financial plan was the amount of money borrowed, the source, cost, and security offered. A plan for supplying some of the food requirements of the family from the farm was also submitted with the farm plan.

Out of the 75 entries turned in, five of the best were selected and awarded with prizes. The manuscripts were judged on neatness, grammar, organization of plan, and the actual farm plan. The first prize of $100.00 was awarded to Lloyd C. Martin, Agricultural Economics Senior from Seneca, South Carolina. The second prize of $50.00 was awarded to L. C. Hammond, Agronomy Junior from Seneca, South Carolina. W. C. Owen, M. D. Watkins, and F. T. Mathias, Jr., received the next three prizes of $25.00 each. Martin will compete with the University of Georgia’s winner for an additional award of $50.00.

Mr. R. A. McGinty, Vice-Director of Agricultural Experiment Station, was the Director of the Farm Plan Contest. The committee working with Mr. McGinty was: M. C. Rochester, Farm Management Specialist, S. C. Extension Service; Dr. G. H. Aull, Head, Department of Agricultural Economics; Dr. M. J. Peterson, Assistant Agricultural Economist; W. L. Abernathy, Supervisor, Test Demonstration Farms, S. C. Extension Service; J. D. Kinard, Assistant Agricultural Economist.

SILOS
continued from page 8

with straw and dirt. Labor is cheap in the south and the extra labor involved in the use of a trench silo is not as serious a drawback to its use as it is in the north. Trench silos are especially good with grass silage because the extra pressure of grass silage will not hurt the walls and there is no harm from leakage.

Over a period of years when all costs are considered, construction, handling of silage, interest on investment, value of silage lost, and repairs, there is not much difference in the cost of storing silage in a trench silo and in an upright concrete silo. The concrete silo has the advantage of giving long service, and the trench silo has the advantage of being easily and economically constructed by any farmer. You will get from your silo what you put into it. Temporary silos are good for storing in an emergency, but they are no cheaper than good silos in the long run and are a lot of trouble. Farmers have kept silage by just stacking it in the open, but a lot of waste resulted and this is not recommended.

Always test a silo, especially a trench silo, with a flame for carbon dioxide before entering, this is a deadly gas given off by silage and it settles in the silo for it is heavier than air. Pack the silage well to exclude all air to prevent spoiling. This may be done with a tractor or team in a trench silo.
South Carolina Tenants

By J. L. Schaffer, '43

Since the beginning of time men have fought for land. They would kill and steal for land. No obstacle too great was found to stop the thirst for land. No peril could cease their desire to have land of their own. Foremost in the minds of men has been the desire for the "Good Earth."

In the state of South Carolina 34.3 percent of the farmers are tenants. Over one third of the men that till the land do not work for themselves but for other people!

The average yearly income, if you desire to call it such, is $602.08, of which $202.68 represent value of food products for home use. This is for an average family of 6.1 persons. In other words, less than one hundred dollars a year was allotted to each person!

The living conditions of this class is pathetic. Fifty-nine percent of these people live in less than five rooms, remember this is for a family of over six persons. Only five percent of these houses are painted! Only five percent of these houses are white washed! It is needless to say these conditions are appalling.

What is to be done about this condition? Certainly we can not permit one-third of the farmers of South Carolina to live under such conditions. The Federal Security Administration is now trying to solve this problem. There is an effort being made to give the tenant farmers an opportunity to possess land of their own. The F. S. A. is advancing loans to these farmers. This is what the F. S. A. had to report in the February, "The tenant purchase borrowers have repaid 97.4 percent of the principal and interest due on their loans up to June 1930." This proves that the tenants are a good financial risk.

The farm tenants do not stay in one place very long. They usually move from one place to another with great rapidity. This caused an appalling amount of sickness to their families, and a lack of education for their children. This physical and mental illness must be eradicated! Let us draw no illustrations about the tenant farmer. We must never turn our backs to him and his plight. We must comprehend fully his position, and realize that he is a man with no home of his own. Every year he must depend solely on the returns of his crop to get out of debt. Once being out of debt it is not very long before he returns to the indebtor stage.

We can not hope to completely rid ourselves of the tenant in one bold stroke. There is no Utopian Program that will solve the problem over night, but we must plan a program that over a number of years, perhaps decades will slowly and surely eliminate this black mark in our agriculture. The F. S. A. is doing its share to do away with this problem. Every one can help by educating the tenants children, by giving the share croppers adequate medical care, and by helping him plan his farm program in such a manner that he will be able to reap returns to insure himself of better living conditions.

It is only by a far-sighted program can we hope to eradicate this condition, which in many ways resembles the feudal system of yore.

Serving the Peach Growers of South Carolina, Marketing Peaches and Supplying Insecticides and Sprays of All Kinds.

SOUTH CAROLINA
PEACH GROWERS ASSOCIATION
219 Montgomery Building
SPARTANBURG, S. C.
Weeds A Major Problem

By Q. L. CHAPMAN, '43

A weed has been defined as a plant out of place. This definition is not always satisfactory because a stalk of corn that is grown in a cotton field is not considered a weed. A weed maybe accurately defined as a wild plant which has the habit of intruding where it is not wanted.

Weed control is one of the greatest tasks of the farmer. Farming has commonly been referred to as a war against weeds. The importance of keeping weeds in subjection cannot be emphasized too strongly. It has been estimated that weeds cost the farmers of the United States over a billion dollars annually.

It is not known exactly why weeds cut crop yields so drastically. It is known that weeds deprive crops of nutrients, moisture, and sunlight. However, experiments have shown that when these materials are very abundant, the weeds still seem to exert a detrimental effect upon the plant. It is thought that this is maybe due to poisonous materials given off by the roots. The harvesting and curing of crops is often hindered by large weed stalks and oftentimes weed seed. In the Piedmont region the bulblets of the wild onion is a great nuisance when clovers are being harvested with combines.

Weeds are classified into three groups, according to their duration of life. These are annuals, biennials, and perennials. A common annual is the bittersweet, one of the greatest pasture pest of the Upper and Lower Piedmont. The seeds of this plant are scattered by wind, hay, and animals. Most ordinary annuals produce from 10,000 to 1,000,000 seeds per plant. The common thistle is one of the few biennials in this state. This weed is more prevalent in the pastures of the Upper Piedmont. Wild onion is the most serious perennial in South Carolina. This weed reduces the price of dairy products by giving them an unpleasant taste.

Hutcheson, Hodgson, and Wolfe found that weeds cause direct losses to farmers in the following ways: they lower the selling value of the land; they reduce crop yields; they increase the expense of cultivation and harvest; they reduce the market value of crops; and in certain cases they poison or otherwise injure man, livestock or livestock products.

The addition of fertilizer is one of the best methods of controlling weeds in pastures. Grasses will usually dominate when they are given favorable soil conditions. Mowing the pasture is a common practice in South Carolina and it has become a very efficient method. The weeds should be cut before the plant blooms so as to prevent a greater spread of seed. In some instances sheep and goats are placed in pastures because of their tendency to eat weeds. Herbicides are now being used quite extensively in the controlling of weeds. Other means of controlling weeds are by cultivation, smothering, crop rotation, and use of clean seed.

Farmers of South Carolina must learn quicker and better methods of weed eradication. Weeds are a challenge to the farmer, and if the farmer wishes to succeed, he must emerge victorious.
Have You Read?

ABRAHAM LINCOLN—THE PRAIRIE YEARS, by Carl Sandburg. Harcourt 1926. 2v.

(An extraordinary vivid and detailed account of the first 51 years of Lincoln life, before he became president. "... more than an ordinary biography; it is a captured atmosphere, a portrait done with the exquisite, patient care, the intent reverence, the elusive tenderness of a Rembrandt."—Annuals of American Academy.)

"OUT OF THE NIGHT", by Jan Valtin. Alliance 1940. (The long, detailed autobiography of a German, who, caught in the frustrations of the post-war period, joined the Communist party and worked for it for years as an agitator among seamen. He became disillusioned with the methods used by the Communist, was later caught and tortured by the Gestapo, and finally escaped. —Booklist).

CHIANG KAI-SHEK; MARSHALL OF CHINA, by Sven Hedin. Day. 1940. (Dr. Hedin is most convincing when talking about the subject he knows and loves best—Central Asia. His chapters on China and the Border States ... are of real interest and importance to the student of world affairs.—Sat. Review of Literature.

THE JEWISH CONTRIBUTION TO CIVILIZATION, by Cecil Roth. Harper. 1940. (Outlines the past which Jewish people have taken in the development of Western Civilization. "One desiring the truth will find adequate coverage by a competent scholar. Many a surprise will be met."—Christian Century).

THEY LIVE ON LAND, by Paul W. Terry and Verner M. Sims. Bureau of Educational Research, University of Alabama, 1940, pp. vi, i 313.


HOW DEAR TO MY HEART. By Mary Margaret McBride. New York, Macmillan Company, 1940. 196 pp. $2.00.

ON THE LONG TIDE. By Laura Krey. Boston, Houghton Mifflin Company, 1940. 637 pp. $2.75.


THE ANIMAL HUSBANDRY DEPARTMENT

of

CLEMSON COLLEGE

Purebred

Berkshire Swine
Polled Hereford Cattle
Hampshire and Southdown Sheep
Country Cured Hams and Bacon
HARVEST THE WORLD'S
Longest SWATH!

It's not the width of the swath as much as the length that counts! That's what owners say, whose fast-traveling ALL-CROP HARVESTERS run circles around slow, unwieldy “one-crop” combines.

The ALL-CROP HARVESTER cuts the world's longest swath, not just in rods, but in months. No other machine can take you all through the seasons, from barley harvest till bean pods turn brown and brittle in the fall.

New crops are on the march! Clovers, sorghums, fescues, vetches, flower and vegetable seeds, crested wheat grass. Now is your chance to harvest a swath of ALL-CROP INCOME . . . your choice of 102 grains, legumes, grasses and seed crops.

By simply turning a crank, you can vary the Model 60 ALL-CROP HARVESTER'S cylinder speed instantly for any crop . . . up to 1650 r.p.m. The wide bar cylinder with rubber-cushioned shelling contacts puts a heavy swath or windrow straight through without slugging or seed crackage.

A university test shows you save 50c to $1.00 an acre in wheat alone with the All-Crop Harvester. Your Allis-Chalmers dealer can show you how to multiply this saving with new crops, new income . . . the All-Crop way!

ALLIS-CHALMERS MANUFACTURING CO.
Dept. 43, Tractor Division, Milwaukee, Wis.
Gentlemen: Please send free books as checked.

☐ Model 40 All-Crop Harvester  ☐ Model 60 All-Crop Harvester
☐ Special Equipment Guide (Complete attachments for All-Crop Harvester)

Name ................................................................. RFD .................................................................
Town ................................................................. County .............................................................
State
LOOKING FOR NEW OPPORTUNITIES IN AGRICULTURE

Continued from page 4

changing soil conditions in order to keep well ahead of the major factor that tend to affect economic production. Not until the scientist discovers adequate means of producing better forage plants can the southern states balance plant and animal production.

The farmer must study his problems and school himself in the changing concepts of agriculture. He should be thinking in the competitive field in which he is now a part. He will find that the public and consumer demand good quality and often specify variety as well as specialized package. Today quality products are far more valuable than quantity productions in a prosperous agricultural approach.

More and more South Carolina farmers must look for cash producing crops. The disturbance in cotton and tobacco production and losses in money values to the state demand that the far-

PROTECT YOUR PEACH CROP
with
PAN PEACH SPRAY

PAN contains all the necessary ingredients to assure maximum protection.

SIMPLE TO USE

PAN is used at the rate of 8 pounds to 50 gallons of water and is put up in convenient units:—Cases of 4-8 lb. bags, cases of 2-16 lb. bags and cases of 4-16 lb. bags.

Leading peach growers throughout the country find PAN PEACH SPRAY the best answer to their spraying problems.

The J. W. Woolfolk Company
Manufacturers
Fort Valley Georgia

Silage Crops
By M. L. Jenkins, '41

Every where one turns he hears, "Save the natural resources, conserve the soil and the forest." All of this is well and good. It should be done. But there is another leak in the farmer's pocket book, a large leak, but one which we seldom hear about. It is the loss of forage crops, crops which are already produced but are wasted before they are consumed. What causes these losses? Rain, which leaches and rots a large percent of all our hay crops.

Every field of sun cured hay has about eighty percent of its vitamin A and a large percent of its nutrients bleached out.

Hay is stacked or bailed when it is a little too green or wet, molds and deteriorates and is largely unfit for consumption.

Hay that is too mature or too dry when it is harvested, loses a great many leaves by shattering during harvesting or feeding. This is especially true of valuable legume hay because their leaves shatters easily.

Unless hay is of the very highest quality much of the coarser parts are refused by livestock.

It has been estimated that even the finest hay cured in an ideal season and feed under the best of conditions loses about one third of its nutrients and most of its vitamin A. If the farmers of the semi arid west lose thirty percent of the nutrients in their hay crops, how much do the farmers of the humid south lose?

Forty percent of the nutrients in the corn plant are left standing in the field to leach out and rot when the ears are snapped off the stalk.

Stripping the leaves for fodder is no better than only snapping the ears for this practice reduces the yield of grain more than enough to make up for the value of the fodder.

There is yet another loss which the farmer who produces dry forage is subject to. This is fire which destroys many tons of hay and the barns and livestock along with it.

Stop a minute and think! It is true that our lands do not produce great yields, but still there is no use to throw away such a large percentage (in some cases more than half) of what they do produce. These great losses can be stopped almost completely, and they can be stopped quickly, easily, and most important of all economically.

continued on page 32
Low-priced pitch-on Trailer-Baler rolls on two rubber-tired wheels, goes anywhere behind motor car or small tractor, gets to work in a jiffy with power from its own air-cooled engine. No staking down or belting up; ideal for field baling of cocked hay, handler and easier for stack and barn baling. See both these balers at hay-machine headquarters; also new 4-bar side-rake geared to go at tractor speed and new all-forage cutter for all kinds of silage and chopped hay, fodder, etc. You are always welcome at our branch houses and factory display rooms. J. I. Case Co., Racine, Wis.

Here is hay as easy to feed as helping yourself to a slice of bread. No tugging to dig matted hay from mow or stack, no struggle to tear apart the folds of ordinary bales, no loss of leaves by rough and repeated handling.

And what hay! Richer in leaves, in color, in vitamins, in nutrients, in softness and palatability. Air-conditioned hay made with a Case side-delivery rake and then baled at the ideal stage of cure. Baled with a new continuous-feed pick-up baler that weighs no more than an average motor car, pulls with a small tractor, works with two men, stays in step with 7-foot tractor mower and side-rake. A baler that has no blocks to handle, that measures every bale to same size with automatically spaced dividers.

The Case blockless pick-up baler is built for individual hay growers, to bring them the blessings of sliced hay with a small family-size crew and a surprisingly small investment. It saves the labor of loading loose hay, the dirty work in the hay mow. It multiplies the capacity of storage space four or five-fold, reduces risks from fire. In addition to all this it is the ideal means for saving straw from the combine in the preferred form both for bedding and for chemurgic uses.

Case
SILAGE CROPS
continued from page 30
How? By the use of silage.
Why use silage?
1. It is a cheap feed.
2. It can be made in any kind of weather.
3. It saves the whole crop.
4. It is a very palatable feed.
5. Any forage crop can be made into silage.
When all the expenses are considered, the cost about the same to make a ton of hay as it cost to make its equivalent in silage. This does not take into consideration the value of the nutrients saved by putting the whole crop into silage. Silage can be made when the land is too wet to use the labor for plowing or when the crop is too wet to cut for hay. Corn stalks and all other coarse forage can be entirely utilized. Silage is the nearest thing to the green succulent pastures which is the natural food for all classes of livestock. All crops, the ones which yield the greatest tonnage on your land, even grasses and legumes, can be made into high quality silage at low cost.

Even with all of its desirable features, silage is not a perfect feed, but it is by far the best roughage which we can use in this humid area where good hay is hard to make and seldom seen. If it is so good, then why do so few farmers use silage? There can be only one answer. Not enough is known about its many virtues. In the sections where silage is well known and adapted, it is used very extensively and no other harvested forage can compare with it in popularity.

WOOD'S YELLOW SOYBEANS
Yield 25 to 45 Bushels per Acre, 2 to 3 times as Much as Other Varieties
DO NOT POP OUT
Strong upright stalk. Disease, Storm, and Drought Resistant. Best Soybean for oil, hugging down, or hay. N. C. State College reports: "It is superior to standard varieties like Mammoth Yellow and is non-shattering. Write for WOOD’S CROP SPECIAL illustrating improved seeds. Mailed free.

T. W. WOOD & SONS
Richmond, Va.

New South Carolina Agriculture Industry
continued from page 3
it. The agitators are removed, the curd is allowed to settle and the whey is pumped off. There will remain about six inches of curd in the bottom of the vat. This toughened curd is cut into slabs about a foot wide and is turned every fifteen minutes while remaining in the vat. The curd is then ready to be "milled."

Milling is the final process involved in the manufacture of cheese. First, the slabs of curd are placed in hoppers and cut into pieces about two inches long. Then salt is added at the rate of three pounds for each thousand pounds of milk. The salted curd is then packed in cheese molds and placed in a cheese press where it is left overnight. When removed, the curd has taken the shape of cheese. After being exposed to the air for three days the cheese is dipped in paraffin. Each day the cheese is turned to develop an even rind. Each cheese is weighed individually and the weight is stamped on the box. The better quality and more tasteful cheese is that which has been allowed to ripen for about six months.

The Borden Company has shown great foresight in establishing a source of supply near the point of consumption and placing that source in capable hands. The manager of the Chester plant, Mr. A. E. Vaughn, is well qualified for his position. He is experienced in all phases of this work and is a specialist on evaporated milk. He and his capable staff will undoubtedly develop this new South Carolina agricultural industry until it occupies a major place in the agriculture of this state.
WE ALL know the story of the two prospectors who dug and dug for gold and then quit—just three feet short of one of the world’s richest lodes. It’s a story that carries a powerful moral—never quit until the goal is reached.

In the engineering and experimental laboratories of the thirteen great John Deere factories are men who are pledged to follow that same principle . . . men who are engaged in designing, testing, improving, and re-testing new farm equipment . . . men who keep “plugging away” until the final answer is achieved.

The new John Deere No. 490 Planter, shown below, is just one of the many new and better machines that John Deere has developed for 1941. Its unfailing accuracy in checking corn at a new high speed of 5 miles an hour cuts planting costs to rock bottom and enables the farmer to get his seed safely in the ground when the field and weather conditions are right.

The No. 490 is typical of the constant progress that John Deere is making in providing the farmer with improved equipment to lower his costs, speed up his work, and enable him to handle his farm jobs easier and better than ever before.

JOHN DEERE • MOLINE, ILLINOIS
DAD ought to know. Look at the wall behind him. Photo of Dad, straight and proud in old-style choker-collar blouse, Sam Browne belt, and second "lootie's" gold bars. And his decorations—the Order of the Purple Heart, Victory Medal, Croix de Guerre with palm.

"You savvy quick, soldier," he says to his son as that chip off the old block in the new uniform proffers Camels. "These were practically 'regulation' cigarettes with the army men I knew. Lots of other things seem to have changed, but not a soldier's 'smokin's.'"

Right! Today, and for more than 20 years, reports from Army Post Exchanges show that Camels are the favorite. And in Navy canteens, too, Camel is the leader.

Just seems that Camels click with more people than any other cigarette—whether they're wearing O.D., blues, or civvies. You'll savvy, too—and quick—with your first puff of a slower-burning Camel with its extra mildness, extra coolness, and extra flavor, why it's the "front-line" cigarette—past, present, and future!

THE SMOKE OF SLOWER-BURNING CAMELS GIVES YOU EXTRA MILDNESS, EXTRA COOLNESS, EXTRA FLAVOR AND 28% LESS NICOTINE

than the average of the 4 other largest-selling cigarettes tested—less than any of them—according to independent scientific tests of the smoke itself.

- What cigarette are you smoking now? The odds are that it's one of those included in the famous "nicotine-in-the-smoke" laboratory test. Camels, and four other largest-selling brands, were analyzed and compared . . . over and over again . . . for nicotine content in the smoke itself! And when all is said and done, the thing that interests you in a cigarette is the smoke. YES, SIR, THE SMOKE'S THE THING! SMOKE CAMELS!

CAMEL THE CIGARETTE OF COSTLIER TOBACCOs