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Clemson University

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THE CLEMSON A & M SCHOOL

JANUARY 1954

CLEMSON, S. C.
SERVING THE FARMERS IN NORTH AND SOUTH CAROLINA SINCE 1906

Planters
Fertilizer & Phosphate Co.

CHARLESTON, S. C.     CHARLOTTE, N. C.
DOWN TO EARTH
By Joe O'Cain, Associate Editor

TIGER SPUR
Tender shoots
Break the crust
and sheepishly
Emerge in the
New, hazardous existence
of life.
So it is, Country Gentlemen,
When the inevitable bald head
Enters the portals of Tillman.
But then, life has begun.
—Joe W. O'Cain, '54

THE WINNER
"The man who wins is an average
man,
Not built on any particular plan;
Nor blest with any peculiar luck—
Just steady and earnest and full of
pluck.

When asked a question he does not
guess!
He knows and answers "No" or
"Yes."

When set a task the rest can't do
He buckles down and sees it thru.

So he works and waits, 'til one fine
day,
There's a better job with bigger
pay.

And the men who shirked wherever
they could
Are bossed by the men whose work
made good.

For the man who wins is the man
who works,
Who neither labor nor trouble
shirk;

Who uses his hands, his head, his
eyes—
The man who wins is the man who
tries.
—From a poster on the Purina Farm.

PRAYER AT DUSK
Master Peacemaker of the uni-
verse, Farmer and Shepherd of life,
as the vespers sky eddies into the
night, and the busy world is hushed
by the soft hymns of nature, we are
ever mindful of our littleness and of
Thou supremeness. Amen.
—Joe W. O'Cain, '54.
Two familiar old faces always welcome you back to the campus.

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YEMASSEE,
SOUTH CAROLINA
Agrarian Philosophy

By
THE EDITORS

CLEMSON AGRICULTURAL PROGRESS
By James K. Henderson, Co-Editor

For the first time in years Clemson College is getting a major addition to the School of Agriculture. To analyze the effect this new addition will have on the people of South Carolina and the nation let us look at the four groups of people who will directly feel the effects of this new progressive building plan.

First, let us start with the students of the college itself. To them will be given the opportunity of studying in one of the finest and most modern Schools of Agriculture that the nation has today. With the space and equipment that the new buildings will provide, along with the proper teaching methods, a Clemson graduate should be prepared to face most problems that might arise in his line of study. Graduate students from Clemson and other colleges throughout the United States will also be provided with the research facilities necessary to take full advantage of new processes and developments in their respective fields.

Next, the farmers of South Carolina will be provided with the latest information so necessary to them in producing their products with the highest possible net return. Not that the South Carolina farmer is not now being supplied with all the valuable information the extension service and experiment station have to offer—he is. But with up-to-date laboratories and equipment, research can progress at a much faster and more efficient rate. To the farmers whose sons return to the farm is the knowledge that the finest is being made available to their boys in the way of buildings, equipment and teaching.

The state of South Carolina will benefit by having this wonderful addition to the School of Agriculture at Clemson in several ways. As mentioned before, the farmers will greatly profit from the research and experiments to be carried on here. Thus, the state will benefit by having the products from these farms. There is always a market for superior products and more money can be brought into the state in this manner.

In conjunction with bringing benefits to the state of South Carolina, this new School of Agri-

(Continued on page fourteen)

AGRICULTURE — A RELIGION
By Joe O’Cain, Associate Editor

This science of agriculture is becoming a kind of religion in itself. Today, more than ever before, the agricultural scientist is becoming more and more aware of God’s supremeness. It has been said by many contemporary philosophers that the true scientist entertains a stronger belief in God than most other people. I believe that.

Just try explaining the laws of growth, fruitage, or reproduction. All the fundamental processes of life will perhaps never be fully understood. What about the great laws performed with such brilliance of lifting the fluids of the earth into the bud at springtime? Isn’t this magnificent existence of life today really a matter of faith? It is beyond human talents to make something as simple as a mere leaf. True, we know all the elements in a leaf, but we lose out when we attempt to manufacture chlorophyll.

The agricultural scientist is a real appreciator of nature; he is God’s true partner! He realizes that the things about him, the things that others take for granted, such as the sun, the raining clouds, and the good earth are our most valuable possessions.

The agricultural scientist is no quitter; but he does realize that he can’t work against God’s established and proven laws such as gravitation, the assurance of spring in April, or necessity of soil for life. It’s doubtful that man will ever make peach trees yield apple fruit, or wisteria vines yield cucumbers!

We now realize that every inch of the earth reflects the face of God. The beauty of the visible world and the invisible world about us are marks of supreme intelligence. A minister, Lee Fletcher, has said, “no demonstration is ever verified in a chemical or physical laboratory until it’s proven successful.” The agricultural chemist has not proven or shall never prove that he is one-hundred percent successful. The elements of the earth, known and unknown, and the very existence of this earth today, in my conviction, flings out the challenge of a greatest honor and glory to the Master Farmer of the universe, God Almighty.

(Continued on page thirteen)
Another Source of Income For the Coastal Plains

By A. L. McCaskill, Jr.
Dairy '54

For many years the Coastal Plains of South Carolina have been blessed with two good sources of income, cotton and tobacco. At the present time it is on the verge of adding a third source and that is milk. Dairies, both large and small, are gaining rapidly in numbers throughout the Coastal Plains. Until recently the dairy industry of this section has consisted almost entirely of a few large, specialized dairy farms. The herds on these farms usually contained fifty cows or more. These were mostly producer-distributor operations in which the farmer produced the milk which he processed, bottled, and distributed to the consumer. At the present time many of our large dairy companies, having seen the opportunities in dairying Coastal Plains, have built large modern milk processing plants in the cities of this section. This development has provided farmers with a wholesale market for Grade "A" raw milk. By producing milk for this market the farmer can use many other advantages that result from dairy farming. Some of these are as follows: (1) Helps utilize land not suitable for cotton and tobacco.
(2) Provides an excellent market for feed crops raised on the farm.
(3) Provides more efficient use of labor and machinery.
(4) Provides a twelve month per year income.

(5) Returns many vital minerals and organic matter to the soil.

The Coastal Plains have large areas of land which are not suited for cotton and tobacco. When these areas are limed, fertilized, and seeded to suitable pasture and feed crops the land will produce abundant yields of grass, small grains, corn, and forage. The milk produced from these crops can be sold on the local cash market.

Milk is a finished product; therefore, its market value is superior to that of products which are sold as raw materials and must go through a series of processes before they can be used by the consumer. Each of these processes adds cost to the product which must be paid by the consumer. For example, in 1945, according to the United States Department of Agriculture, the farmer received fifty-nine percent of each dollar the consumer paid for dairy products whereas he received only forty-one percent of each dollar the consumer spent for cereal grain products. Also, another advantage in marketing these crops through milk is the market stability of milk. The market value of these feed crops vary from day to day whereas the market value of milk varies little throughout the year.

Dairy cattle added to the farm program provides more efficient use of labor and machinery. For example, about 120 days of work is required to grow a cotton crop and tobacco requires only about 120 days for growing and harvesting. Both of these crops are grown at the same time, therefore, the machinery and labor used on farms growing only cotton and tobacco is idle at least one-half of the year. Dairying provides a use for these items throughout the year and yet interfere with the production of these crops very little. The cows are on pasture during the summer months and require very little labor for feeding and management. By breeding the cows to freshen in the fall, they are dry during the summer months when the labor is needed so badly for the cotton and tobacco crops. When labor is used throughout the year the employee and the employer both have higher incomes than they would otherwise.

Milk is produced daily to provide a twelve month year income for the farmer. Milk producers receive a check twice monthly, whereas cotton and tobacco provides for a check only once a year. The milk checks help the farmer meet his expenses throughout the year and often prevents a complete loss during bad crop years.

An advantage in dairy farming, which is often overlooked, is the return of many vital minerals and organic matter to the soil. When crops

(Continued on page twelve)
The Coastal Plains of South Carolina

By Jackie Salters and Ray M. Buck

The low country? Where is it? Who lives there? How do the people earn their living? What is its history?

When our country was being settled, Carolina was a proprietary colony of England, and Charleston was the southern center of culture and commerce. As the colony grew, people of predominantly English origin began to expand the colony, and their place of settlement is known today as the “Low Country.”

The majority of the people settled on the rivers and on the more choice land areas near the coast. Great plantations began to develop in these areas and small towns sprang up in the more concentrated areas. Each one of the plantations was independent and self-sustaining. The plantations were self-sustaining in that each could produce or manufacture most of the necessities of life. The few items that could not be produced on the plantations were imported from England or by English merchants. This trade in goods with the mother country also brought the mores and culture of the Anglo-Saxon countries to the low country.

These large plantations demanded much additional labor to produce the rice, tobacco, indigo, and cotton. These four crops comprised the major sources of income during the plantation era and to meet this demand slaves were imported from Africa. The use of slaves for labor and the relation of slaves to family life became an integral part of plantation life in the low country of early South Carolina.

That was the old low country. Most of the old plantations are gone, and the plantation life has given way to the modern era. Since the War Between the States the scene has changed to one of modern agriculture and diversified farming. The system of agriculture has changed, but the people have changed very little. The people of the low country are well known for their distinct guttural type speech, independence, pride in their community, and their ancestors. The people are not the only factor that differentiate the low country from the remainder of the state. The climate and the soil of the Coastal Plain are distinctly different from the Piedmont.

Roughly, the low country is composed of thirteen counties, extending from Georgetown and Williamsburg counties in the north-east to Clarendon and Orangeburg counties on the west and south to the Georgia line and east to the sea. Some people now consider the entire eastern seaboard to be the low country.

The climate is very pleasant and favorable to agriculture. The average temperature is around 65° F. and the average rainfall is 50 inches as compared to an average temperature of 60° F. and an average of 60 inches in the mountain areas. The low country has a growing season of around 290 days, ranging from April until November. This is compared to an average growing season of 186 days in the north-west portion of the state.

Agriculture in the low country is so diversified that it would take pages to name all the products on the farms in this area. This area embraces practically all phases of livestock production, forest production, fruit, vegetable, and innumerable specialty crop production. Beef (Continued on page twelve)
New Clemson Sweet Potato Harvester

By David Martin,
Agricultural Engineering '55

Throughout the Coastal Plains region of South Carolina the sweet potato is a very important crop. One of the largest backaches which growers have is harvesting the crop. Only recently the mechanical age has brought little help toward the harvesting of the sweet potato. The sweet potato has a delicate skin that is very easily broken. The flesh also is easily bruised, broken, or cut. A real need has arisen for a good sweet potato harvester!

The first problem in harvesting sweet potatoes is the removal of the vines. The vines form a rank growth and some means must be made for disposing of them. Many different types of cutters have been tried, such as, a plain or shielded cutter and mower-blade knives mounted on a slide. The necessary requirement for clean cutting is that the cutter maintain in all positions a relatively uniform pressure against the top of the bed. A cutter which consists of two mower-blade knives and a spring has been designed at Clemson and has proved to be very satisfactory. The blades are spaced about five inches apart, cutting vines on each side of the bed with a relatively uniform pressure of about 100 pounds, regardless of bed height. This cutter will serve as a good vine cutter regardless of what type digger is used.

The actual harvesting of sweet potatoes has always been a time consuming task. Vines often cause trouble by clogging the plow beam; excessive cutting and bruising occurs, and generally the plow leaves a large percent of the potatoes buried so that they must either be scratched out by hand or lost. These are only a few of the problems encountered at harvesting time.

Many growers have experimented with the Irish potato digger but this has proven unsatisfactory for several reasons. Although the Irish potato digger, will show 100 percent of the crop on the surface of the ground, after storage the crop is covered with many bruises, thus giving a bad appearance and a low quality product. In addition, soil and crop conditions in this area are such that this type digger often gives an excessive amount of trouble.

The sweet potato harvester developed at Clemson came about as the result of research on root distribution in 1948. J. K. Park, M. R. Powers, and a staff of capable assistants developed this harvester with most of the testing taking place at the Edisto Station at Blackville, S. C. This harvester has been developed after much redesigning and testing, and seems to be a practical machine for harvesting sweet potatoes. The actual machine consists of three sets of sifting rods which ride parallel with the surface no matter what depth the plow is set. These rods float behind a special middlebuster made with a wide point and short wings. The plow itself is mounted on a special high clearance frame. The action of the plow throws a furrow of soil on the side rods; the rods, in turn, sift the soil and leave the potatoes exposed in view of the pickers. In most fields this harvester exposes about 95 percent of the sweet potatoes with a negligible amount of bruising.

The vine cutter previously mentioned is used in conjunction with this harvester. The cutter is attached under the tractor differential by means of four bolts, and a chain is attached to the frame so that the cutter may be raised at the same time as the plow. Two vine removal disks are attached just behind the cutter and move the vines off the bed just far enough so that the side rods slide over them. These disks are actuated by springs which maintain uniform pressure against the bed.

In the tests which were conducted at the Edisto Station, exposure averaged over 93 percent, and bruising was no more severe than with standard equipment. In most cases (Continued on page twelve)
Healthy Tobacco Plants

The Secret of Good Yields

By C. L. Mullwee

The first essential for a good tobacco crop is healthy plants, and in order to produce healthy plants, there must be a good bed carefully selected, well constructed, and properly managed.

The first step toward a good bed is the selection of the correct site. During the early periods of agricultural development in this country, good land was plentiful, and a new area well suited for a tobacco bed could be easily found each year. However, in the present era, due to the fact that good land is rapidly becoming scarce, we are forced to establish a permanent bed on the best soil available. In general, an open, well drained soil, high in organic matter, which does not harden or bake easily, is the most desirable. These soils are usually found in or near wooded areas. Although the ideal soil is seldom to be found, proper soil management may overcome many of the natural soil weaknesses.

The fact that good soils are to be found near wooded areas presents a problem of securing enough sunlight. Maximum sunlight is essential for all portions of the bed if sturdy, disease free plants are to be produced; therefore, any vegetative growth shading portions of the bed must be removed. Generally, a clear area with a slight southern slope will provide maximum sunlight to all portions of the bed during the entire plant producing period.

Perhaps the oldest problem tobacco producers are concerned with is control of weeds and diseases in the plant bed, and when beds are a permanent establishment, this problem presents itself even more. In early days, weed seeds and disease producing organisms were destroyed by burning the bed. Today, chemical treatment is fast replacing this old practice, even though it is still used in some areas.

The leading commercial chemicals used for seed bed treating are cyanamid, urammon, Dowfume W-40, or a mixture of cyanamid and urammon. Cyanamid and urammon are effective against both weeds and diseases, and have some fertilizing value. Dowfume is recommended for plant bed and field use in the control of Root Knot and other nematodes.

A farmer must select and utilize some method of disease and weed control far enough in advance of seeding time to prevent any toxic effects on the tobacco seed. Under normal conditions, ninety days or more are required for the toxic effect of chemicals to disappear.

To apply chemical treatment, first remove any trash and break the soil thoroughly without turning under the top soil. After the soil is well pulverized, disk in about two-thirds of the amount of chemical to be applied with the top three and one-half to four inches of soil. After leveling out the bed with a smoothing harrow or rake, apply the remaining chemical, and again lightly rake the bed to a depth of one inch. Every step in this operation is necessary to insure good results, because to be effective, the chemical must come in contact with the weed seeds or disease organisms.

The most wide spread and devastating seed-bed disease of tobacco is Downy Mildew, commonly called Blue Mold because of its bluish-grey color. It is a wind-borne disease and is particularly favored by cool temperatures and high humidity. This is the reason for insuring that the bed be free of any shaded areas.

Effective control of blue-mold has been achieved with paradichlorobenzene — used as a fumigant — and fermate used as a dust or spray. Treatments may be used as a control at the first sign of the disease in the bed or as a preventative measure when there are any serious outbreaks in the surrounding areas. Other diseases may be prevented to a great extent by insuring that any water applied to the plant bed is free from contamination, and good drainage has been provided.

Another important factor in producing early, healthy plants is proper fertilization. Fertilizer should be applied far enough in advance so as to be readily available for plant use when needed, and in amounts sufficient to correct the natural existing soil deficiencies. A fertilizer high in nitrogen and low in potash is generally recommended for plant bed use. It is interesting to note that the exact reverse of this requirement is encountered once the plant has been transferred to the field. One of the most important points to remember concerning fertilization is to be sure to avoid the use of Murate of Potash or other chlorine bearing carriers on the plant bed, for such materials are very likely to cause serious chlorine damage to the plants.

The importance of proper care and management of the plant bed can not be over-emphasized, for the best way to increase the net returns from a tobacco crop is to increase the yield of high quality tobacco per acre, and the best way to increase the yield, is to start with healthy plants produced on good beds.

Hand picking weeds not controlled by chemicals helps keep beds clean.

(Photo courtesy S. C. Experiment Station)
Future Farmer Training
How One Man Influences Citizen Farmers

Gene A. Norris, VAE '54

Mr. Lewis J. Carter, vocational agriculture teacher at Wampee, says that if his endeavors to teach are considered a success he owes it to three factors: having a keen interest in the welfare of a farming community, a community willing to follow his leadership, and having a willingness to always work. Certainly all who know Mr. Carter have labeled him as a successful agriculture teacher. Let’s take a look at his program and accomplishments and see how they resulted from the above factors.

Mr. Carter’s keen interest in the welfare of the farmer can be partly attributed to the fact that he was reared on a farm near Loris. His interest in agriculture was stimulated in high school by his agriculture teacher, Mr. R. E. Naugher, who is now Southern Regional Supervisor of Agriculture. With his enthusiasm for better agriculture, Mr. Carter decided to go to Clemson and study Vocational Education. This was during the depression days, and it was necessary for him to go to school a year and teach a year in order to finish. Upon graduation from Clemson in 1935, he accepted the position of agriculture teacher at Turbeville where he remained until 1940. He then moved to Johnsonville where he continued to teach agriculture for two years. With the outbreak of World War II, Mr. Carter joined the Navy where he attained the rank of Lieutenant, junior grade, by the time of his release in 1945. Still eager to work with farm people, the ex-Navy man took a position as agriculture teacher in his own home community, Loris, where he taught until 1951. From that time until the present he has been teaching at Wampee, which is about five miles from the coast.

During his twenty years of teaching, sixteen of which have been agriculture, Mr. Carter has accomplished many things which have been the criteria for classifying him as one of the most successful vocational agriculture teachers of South Carolina. One of his first achievements was the establishment of the third cannery in the state at Turbeville. In 1948, his Loris judging team won the State Judging Contest. The team and teacher were awarded a trip to Waterloo, Iowa to represent South Carolina in three judging contests; milk and milk products, poultry and poultry products, and dairy cattle. Mr. Carter’s boys exhibited the quality of teaching they had received when they brought home the bronze award. The great convention-city became quite familiar to the coastal plains agriculture teacher as he took two more boys there to receive their American Farmer’s degree. An accomplishment which has probably been appreciated more than any other by the surrounding farmers was the installation of a post treating vat at Loris. This year Mr. Carter has received recognition from the South Carolina Association of Soil Conservation for his outstanding performance in teaching principals of soil conservation to evening, all day, and young farmer classes. On January 15, 1954, at a banquet in Columbia, an award of $50 was presented to his young farmer chapter for the winning of membership contests, percentage increase, and actual number increase. Perhaps two big factors instrumental in achieving these accomplishments have been that Mr. Carter has actually managed a farm while teaching and therefore sees the needs of the farmer, and he has striven to improve his technical knowledge and teaching ability by attending summer schools and short courses. He now needs only two credits to complete requirements for his master’s degree.

One has only to look at Mr. Carter’s present program to understand why he has been chosen as one of the outstanding agriculture teachers in the state.

His instruction groups consist of all day classes, young farmers, and evening or adult classes. His all day classes consist of 32 farm boys, divided into three groups. Instruction for these boys consists of classroom work and outside or field study. The inside instruction consists of lectures, discussions, studying books and bulletins, movies and other visual aids. The primary crop studied in class is tobacco since it is the major money crop of that section. Running close for second place are sweet potatoes and corn. The production of marketing timber receives a great deal of attention. With livestock instruction, the production of hogs rank first. Beef and chicken production are studied, but they are not as important around Wampee as pork production.

Mr. Carter finds his outside program holds both practical value and interest for the boys. The boys must actually learn by doing such tasks as dehorning, castrating, vaccinating, identifying plant diseases, running soil tests and criticizing farm layouts. Of course adequate instructions are received before these tasks are attempted.

(Continued on page thirteen)
Camellia Culture

W. D. Barton '54

The camellia is one of the most popular of all ornamental plants grown in the south today. It is, therefore, important that culture and care of these plants be understood.

The soil in which the camellias are grown should be well enriched to give the plant a good supply of nutrients. Good results will be obtained from a soil made up of one part of each of good garden soil, peat or leaf-mold, sand, and well decayed manure. It is a good thing to always keep the organic matter content of the soil at a high level. Peat, leaf-mold, and manure are good sources of organic matter, while sand will help with drainage and aeration.

A mulch on the soil surface is very helpful in maintaining favorable moisture conditions in the surface soil where camellia roots should be extensive. Peat moss is good but costly. Cheap and excellent for the purpose are wood shavings, such as pine.

The proper pH for camellias is 6.5 to 7.5. This pH may be maintained by keeping the plants mulched properly at all times.

Weather conditions play an important part in the culture of camellias. Hot, dry, motionless air is not conducive to good camellia culture. For winter nights optimum temperatures should be maintained at 40° to 45° F. It is not desirable for the temperature to go higher than 55° or 60° F. in the warmer daylight hours. Occasional rises above this point, however, will cause no injury, but changes should not be abrupt because flower buds may drop. Movement of air should be free at all times. Moist air is preferable. Best results are obtained if the humidity does not drop below 60°F.

Careful attention should be given to watering. Plants should not be allowed to dry out. It is best that the moisture content of the soil vary very little. Moisture in the soil must be maintained at a high level. A safeguard against over-watering is good drainage. To insure good drainage do not plant camellias in heavy clay soils. If the soil is a little clayey, it may be advisable to place one inch of gravel in the bottom of the hole when planting them.

Shade, also, plays an important role in the culture of camellias. During the summer months the flower buds enlarge and develop in preparation for opening in autumn and winter. High temperatures seem to be helpful in the growth and development of flower buds. It should, however, be kept in mind that in hot dry weather special attention should be given to watering.

Fertility should be maintained at a high level. Commercial camellia fertilizer can be scattered very lightly over the surface and watered into the soil. A liquid fertilizer is also good. An application of one ounce of liquid fertilizer to two gallons of water is recommended every two weeks.

Scale insects sometimes gain a foothold on camellias. The best time to take care of these is just after spring growth has become hardened. White miscible or summer oil are materials most commonly used. In the spring this can be used at the rate of one to one hundred parts of water. In autumn it can be used at one to 60 parts of water. The insecticide may either be sprayed on the plants in such a way as to hit the insects or if the plants are small, they may be washed with it. Spider mites also attack camellias, turning the leaves greenish-gray. They may be controlled by using a commercial miticide.

Pruning is a necessary part of the culture of camellias. Many gardeners place too little importance on pruning, probably through fear of losing the following year's bloom. The inner branches should be thinned, dead branches close to the trunk should be removed and the outer branches should be trimmed to the shape of the plant. This will have little effect on the bloom, as the inner branches seldom produce large flowers but will produce sturdy new growth. They may be pruned at any time of the year, but if heavier pruning is done right after the blooming period before new growth starts, it will have little effect on the following season's blooms.

For growers wishing larger blooms for show or arrangement purposes, disbudding is recommended. The practice is to remove all but one or two terminal buds and the majority of the lateral buds on each branch. This is not essential, however, if the gardener is interested in profuse bloom rather than size.

The Clemson Agricultural Engineering Department has been operating under a joint administrative setup since June, 1952, when the board of trustees approved a joint program of administration which was sent to the president by the deans of the schools of engineering and agriculture and the head of the Agricultural engineering department. Although this system is a rather unique setup here at Clemson, it is by no means unusual for agricultural engineering schools throughout the country, with Clemson's department being the 22nd in the U. S.
AGRONOMY CLUB NEWS

Douglas Owens, Ted Maxwell, and Robert Poston, members of the Clemson Agronomy Club, attended the annual convention of the student activities section of the American Society of Agronomy in Dallas, Texas, November 16-20. Each year the student section holds its meetings in concurrence with the parent society. Over twenty different shows were represented from all parts of the country.

Besides having many guest speakers to talk to the student section, the student delegates were invited to attend as many of the parent society meetings as possible.

One of the highlights of the convention was a field trip to Fort Worth to visit the stockyards and Armour Packing Plant, where the group had a delicious steak dinner.

The delegates from the Clemson Club agreed that the convention was a success in every respect. It afforded the opportunity to meet many of the outstanding leaders in agronomy and to exchange ideas with students from other schools.

During the previous year, the Clemson Club was chairman of the National Crops Judging Contest Committee. The delegates gave a report of this committee at the convention.

On October 29 and 30, 1953, the College Feed Survey Committee sponsored by the American Feed Manufacturers' Association of which Professor J. P. LaMaster is a member, met in Chicago. This Committee meets at the beginning of each feed year to make estimates of feed used by various classes of livestock and poultry. These estimates are compared with available feed supplies to arrive at a supply-use balance. In their calculations, the Committee estimates what producers will likely do in view of current feed and probable economic conditions. In no way does this report reflect what the producers should do.

After completing work for his master's degree last June at the University of Michigan with high honors, Dave McGregor is now employed as a forest geneticist with the United States Forest Service Branch of Research at Lake City, Florida.

For the past twelve years, reports of the College Feed Survey Committee have been published. These reports have served as a helpful guide to educational and service agencies and to the Nation's producers of meat, milk, and eggs. Annually, estimates have turned out to be remarkably accurate.

The Borden Foundation Scholarship of $300.00 was awarded this year to Bernard M. Sanders, Jr., of Orangeburg, S. C. This scholarship is awarded to the eligible senior achieving the highest average grade on all college work preceding the senior year. The recipient of this award must have included in his curriculum two or more dairy subjects.

Professor J. P. LaMaster of the Dairy Department attended a large Cuban cattle exhibition in Sancti-Spiritus, Cuba, from November 28 through December 6, 1953.

W. A. Smithwick, dairy graduate in 1949, is now a jet pilot stationed at Victoria Air Base, Victoria, Calif.

C. A. James, III graduate of 1943 in dairying, is a captain in the regular army quartermaster corp and is stationed in Japan.

H. A. Johnson, 1940 graduate in dairying, is the quality control technician for the Pet Dairy Products Co. in Greenville, S. C.

Dr. C. R. Swearingon, dairying graduate of 1937, is now a practicing veterinarian in Smithfield, N. C.

T. P. McKellar, dairying graduate of 1933, is now the owner of the Maple Grove Dairy in Ashboro, N. C.

James E. Cushman, a 1950 graduate in dairying, is director of S. C. Dairy Commission with headquarters in Columbia, S. C. James is also a former co-editor of Agrarian.

W. T. O'Dell, 1950 dairy graduate, is working on his Ph.D. at Penn State College. Probably most of you know him as the professor of Dairying.

William Reasonover, the first Agrarian editor after World War II, is now advertising manager for "The Robersonian" newspaper at Lumberton, N. C.

James H. Boulware, a 1932 dairy graduate, is now agriculture attaché at Rangoon, Burma.

Radio Station WIS in Columbia has an agricultural program at 12:45 p.m. each day. It is called "The Clemson Journal" and is rotated each day between the different agricultural departments.

The Claude W. Kress Research Endowment Fund has awarded a research grant to Dr. J. M. Rush, Associate Professor of Bacteriology, for a study of the family achromobacteraceae. The object of this research project is to isolate members of the genera of the family achromobacteraceae from sources suggested in the literature and to determine their significant taxonomic characteristic which will facilitate their future identification.

J. M. Dunlap, class of 1923 in dairy, is now the owner of a milk and ice cream plant in Cleveland, Tennessee.

T. W. Bailey, dairy graduate in 1926, is assistant director of the Textile Institute at Charlotte, Va.

J. B. Copeland began December 15 his new duties as assistant agricultural editor of the Clemson School of Agriculture.

Mr. Copeland grew up on a farm in Carroll county, Georgia. He graduated from the University of Georgia in 1948 with a B.S. degree major in dairying. While at the University, he served as editor of the "Georgia
AGRICULTURAL ECONOMICS DEPARTMENT

H. D. and M. J. Morgan, brothers in the class of 1937, are employed in the sales department of the Lederle Laboratories, large manufacturers of agricultural and medicinal supplies, including some of the recently developed anti-biotics.

C. E. Pike, Ag. Ec. ’38, is Agricultural Attache of the American Embassy in New Delhi, India. Pike is a native of Clemson.

O. Harold Folk, agricultural economics graduate in the class of 1937, is on the staff of the International Bank for Reconstruction and Development in Washington, D. C.

J. M. Bozard, Ag. Ec. ’48, is employed as agricultural and livestock agent for the Atlantic Coast Line Railroad with headquarters in Orlando, Florida.

H. Z. Smith, Ag. Ec. ’47, is vice president, in charge of sales, for the Sedbery Corporation, the largest manufacturers of grinding machinery in the U.S.A.

C. C. Taylor, Ag. Ec. ’50, is Agricultural Economist for the United States Department of Agriculture with headquarters at Clemson.

Carl Dalton, a former forestry student, is continuing his studies toward a bachelor degree in forestry at the university of Michigan.

Hormone is now being used in experimental work to thin peach trees. After studying the results, there is hope that a hormone concentration will be found that is suitable enough to put on the market.

The 1953 agricultural yearbook is now available to the public. It is titled "Plant Diseases." You may obtain a copy by writing to the Superintendent of Document, Washington 25, D. C. Price: $2.50. You may obtain a copy from your senator or representative free or charge.

Mr. J. M. Eleazer, extension information specialist, reports that you may now obtain good certified Coastal Bermuda grass in every county in the state. There was a lot of it grown in every county this past winter under the supervision of Hugh Woodle, agronomy extension worker, and the respective county agents. Coastal Bermuda does well on light soils, and also responds well to nitrogen.

Dr. James G. Gee, graduate of soils in 1917, is president of Eastern State Teachers College in Commerce, Texas. Dr. Gee was at one time director of athletics here at Clemson. Dr. Gee received his Ph.D. degree from Cornell University.

TWO NEW WHEAT VARIETIES

Two new wheat varieties, the Anderson and Taylor, recently released, have shown high yield of performance and a wide range of adaptation. This fact is confirmed by results of tests conducted in this state and in nine other southern states. The program represents cooperative work that has been in progress for a number of years by these ten southern state experiment stations; the Bureau Plant Industry, Soils and Agricultural Engineering; and Coker's Pedigreed Seed Company, Hartsville, South Carolina. Additional information concerning these two new wheat varieties may be obtained by writing for Circular 92 and address to the Bulletin Room, Clemson College. The circular is written by W. R. Paden, Acting Head of the Agronomy Department, and E. B. Eskew, Associate Agronomist.

At the annual meeting of the National Joint Committee of Fertilizer Application in Chicago, December 8, Professor G. B. Nutt was elected general chairman for 1954.

The mechanical sweet potato digger which was developed at Clemson by Mr. J. K. Park, of the Clemson Agricultural Engineering Department, and Mr. M. R. Powers, formerly at the Edisto Experiment Station, is now being manufactured by the Darf Corporation of Raleigh, North Carolina.

In the spring of 1953, application was made through Dean J. H. Sams of School of Engineering to the Engineering Council for Profession Development for the accreditation of the Clemson Agricultural Engineering curriculum. In October, President Poole and Dean Sams were notified that the curriculum had been fully accredited. In addition to the recognition and prestige given to the department, it will mean much to the graduate of the department who wishes to obtain engineering license, do graduate work, or seek employment with firms who recognize the standing of E. C. P. D.

For the year beginning October 1, 1953, Dr. J. H. Sams, Dean of School of Engineering, and Professor G. B. Nutt, Head of the Agricultural Engineering Department, will serve on a regional committee to evaluate undergraduate Agricultural Engineering curriculum for the states of Alabama, Florida, Kentucky, Georgia, Mississippi, North Carolina, South Carolina, Tennessee and Virginia for accreditation.

TheRalston Purina Company of St. Louis, Missouri, gave a dinner to 27 agricultural engineering seniors at the Clemson House Wednesday night, December 9, and afterwards interviewed all who were interested in plant management positions with the company. Several men are expected to join this organization. W. H. Mitchel, agricultural engineering graduate of 1953, is working for the Charlotte branch of the Purina Company.

ELEVEN
THE COASTAL PLAINS
OF SOUTH CAROLINA
(Continued from page five)
cattle and hogs constitute the major-
ity of the livestock production. There
are numerous herds of purebred cat-
tle as well as large numbers of grade
animals. Cattle and hogs are raised
on the smallest farms and the larg-
est plantations. In recent years large
acreages of low and marginal lands
have been utilized for pasture. There
still remain large areas of this land
that are not producing now, but with
the advent of more and better equip-
ment and increased technical knowl-
edge this land is being rapidly
brought into profitable production.

The low country is one of the
largest milk producing areas in the
state. The Bamberg-Orangeburg-Bu-
tawville triangle is one of South
Carolina's largest major milk-sheds.
Purebred dairy animals play an im-
portant part in maintaining a high
rate of production. Gippy Plantation
pioneered in purebred dairy cattle in
the low country with their herd of
Guernseys.

The low country is not a com-
mercial fruit raising area; however the
fringe is a large pecan growing sec-
tion. What is lacking in fruit is made
up in flower growing. The large az-
alea and camellia gardens and nur-
serys are world famous.

Truck crops are grown extensive-
ly along the coastal strip. This area
produces string beans, watermelons,
cantaloupes, cucumbers, cabbage,
lettuce, potatoes, and numerous oth-
er crops on a smaller scale. The soil
and climate are very favorable to
this type of agriculture. The mild
temperature and long growing sea-
son permit year-round production of
some crops.

Grain and other feed crops are
grown extensively throughout the
Coastal Plain. Corn, small grains,
soybeans, cowpeas, hay and grazing
crops are produced to feed the hogs,
cattle, and other livestock.

Not only can the low country pro-
duce crops and livestock, but it is
also rich in natural resources, espe-
cially forests. The great pine forests
of the low country make it the larg-
est pulp and pine timber area in the
state. More and more land that was
once thought useless is being planted
in pines to further increase the pulp
and timber industry.

From this brief summary of the
low country you can see that it is an
interesting and varied section of the
states, both in industry and agricul-
ture. Opportunities in nearly every
field are opening as the area grows
out of its rich past into a richer fu-
ture.

SWEET POTATO HARVESTER
(Continued from page six)
"scratching" is not necessary. Elimi-
nation of "scratching" enables pick-
ers to harvest a considerably larger
number of bushels per day and
makes the entire job much less dis-
agreeable.

Use of this harvester requires that
the field be dug in alternate rows.
Design of the side rods is such that
performance is equally good in dig-
ging first and second rows.

This harvester was put into com-
mercial production in 1952, and sev-
eral dozen were sold on an explor-
atory basis. It is now available for
use on the Ford and Ferguson trac-
tors and could be adapted to other
tractors. The harvester is being pro-
duced by the Darf Corporation of
Raleigh, N. C. About sixty have al-
ready been put into use, and the re-
actions of growers have been quite
favorable. The harvester has been
patented, and the cost of its between
two and three hundred dollars.

Research is still being carried on
concerning root distribution, trans-
planting, and harvesting. For addi-
tional information check Bulletin
40, "Machinery for Growing and Har-
vesting Sweet Potatoes," by Joseph
K. Park, M. R. Powers, and O. B.
Garrison.

DAIRYLAND, S. C.
(Continued from page four)
are grown and sold as such, all of
the minerals present in them are sold,
but by marketing a crop through
dairy cattle many of the minerals
are returned to the soil through ma-
nure. In addition to returning min-
erals, organic matter is returned in
large quantities. The value of ma-
nure is often overlooked but at
Clemson College, by applying ma-
nure on Bermuda grass pasture, a
return of $3.35 per ton was realized
in increased feed value. This was
calculated in terms of alfalfa hay
replacement value of the pasture.

Few people realize the amount and
value of manure which is excreted
by dairy animals in one year. A stu-
dy at the Minnesota Experiment
Station reveals the following infor-
mation. A 1000-pound dairy cow ex-
cretes 26,000 pounds of manure a
year in the liquid and semi-solid
state. This amount of manure would
contain approximately 127 pounds of
nitrogen, 40 pounds of phosphoric
acid, and 125 pounds of potash. The
value of these plant nutrients at the
present time would amount to ap-
proximately thirty dollars disregard-
ing the value of the organic matter.

The addition of dairy farming will
result in fewer unused acres of land,
more income for the farm laborer
and the farmer, a steadier income,
and a richer soil. These factors will
help build a more prosperous Coast-
al Plains and South Carolina.

THE AGRARIAN
FUTURE FARMER TRAINING

(Continued from page eight)

Another part of Mr. Carter's all-day program is the farm shop work. Here the boys construct farm equipment to improve their livestock programs, and make repairs on farm equipment.

In any all-day class group, the F.F.A. is a must. Mr. Carter's chapter is quite active and a real asset to the community. Along with the usual F.F.A. activities such as judging, public speaking and exhibiting at fairs, these boys also maintain a school forestry plot as a garden plot. In order to raise money, the members also raise hogs, which are fed from the lunch room garbage and corn raised in the garden plot. The sale of sweet potatoes, tomato plants and potato slips also adds to the income of the chapter.

About 67 young men, all of whom are not established in farming, compose the second instructional group, the Young Farmers. This group has regular monthly meetings plus six to eight called meetings during the year. Mr. Carter gives instruction on problems which they bring up; he also secures agricultural specialists to speak at meetings.

The third formal instructional group under Mr. Carter's supervision is the evening class, or adult farmers. This group includes 50 well established farmers who meet a minimum of ten nights a year. At these meetings the farmers bring up their various problems for group discussion with Mr. Carter acting as discussion leader.

Last summer Mr. Carter along with nine other agriculture teachers in the state took a course at Clemson which prepared them to become supervisory teachers for students in the directed teaching program. In this program, which will begin the spring semester of 1954, a number of student teachers will actually live and teach in the ten school communities for six weeks.

With these instructional groups, plus the supervision of the community cannery and shop, Mr. Carter has still found time for other activities in the community. He is a member of the American Legion, the Masons, and president of the Lions Club. For a number of years he has taught a Sunday School class and recently he was elected superintendent of the Sunday School. Probably the most important role of all to Mr. Carter is that he is the husband of a charming wife and the father of two lovely children.

Mr. Carter; the vocational agricultural field recognizes you as one of its outstanding teachers. May your achievements in your profession and in life be a goal for others.

Irrigation
AS
Crop Protection
Domestic Water Systems
Disston Saw-log
AND
Pulpwood Chain Saws
COLUMBIA SUPPLY CO.
Phones LD-64 Local 5121
COLUMBIA, SOUTH CAROLINA

"One of the best in the South... ultra-modern...", says

Clemson House

In the foothills of the beautiful Blue Ridge Mountains, you'll find the Clemson House located in a unique setting - right on the campus of Clemson College. Here you will find all the services of a great metropolitan hotel yet you will be far away from the noise of a large city. And you'll enjoy the beautifully landscaped grounds and the flower beds. The splendid accommodations and the excellent cuisine offered at the Clemson House are combined with warm friends, hospitality and fine service.

The Clemson House is a gem among fine hotels and the sites are almost unbelievable. At public rooms are air conditioned. Four dining rooms and the Tiger Lounges and Carter than there is swimming fishing and golf nearby.

Fred L. Zink, Jr., Manager
On East Edge of Clemson, S. C. On U.S. 78, 123 & State 28

AGRICULTURE—A RELIGION

(Continued from page three)

Certainly the agricultural scientist does not challenge God. He works with God and for a better humanity. We have realized that Herbert Spencer states it that "we are ever in the presence of an infinite and eternal Energy from which all things proceed.”
FOREST RESOURCES
IN SOUTH CAROLINA

JACK B. EDWARDS, Pre-Forestry

The forests of South Carolina are one of the State's most important natural resources. They form an inseparable part of the economical and social structure of the State. If proper care is used in the management program, the forest resource is renewable, and because of its vital contribution to the welfare of the people, both private and public officials should take a more active part in initiating and putting into effect conservative and productive plans of forest use.

Approximately 55 percent, or eleven million acres of nineteen and one-half million acres of South Carolina is in woodland. The eleven million acres are owned by over one hundred and eight thousand individuals and firms. These vast forests are the sum total mainly of small woodlands of twenty, forty, and one hundred acres. Only one hundred and forty owners have title to more than five thousand acres. Much of this forest area has progressed through several cycles of clearing, cultivation, and abandonment. There are approximately thirty billion board feet of saw timber in the state, about three-fifths pine and two-fifth hardwood and cypress. More than a third of the total volume is loblolly pine. Despite this large volume, the saw timber production of South Carolina decreased ten percent during the period 1936 to 1947. This decrease was worse in some parts of the State than in others. The decrease was especially severe in the southern coastal plains. Here there was one-fourth less volume in 1947 than in 1936—seveny-five saw tree where one hundred had been growing in the earlier survey.

While the saw timber volume has been declining at a serious rate, the quality of saw timber has likewise declined. One tree in every five is rated as a cull tree today. These are the trees that are too poorly formed, too many limbs, too rotten, or too defective to have commercial value.

(Continued on next page)
FOREST RESOURCES

(Continued from page fourteen)

It is a matter of considerable concern that hardwoods of low quality and cull hardwood trees are replacing pine on areas that could grow good pines. When an area is cut over, the best stands and the best trees are usually taken, and the inferior trees are left. As a result, culls and low-grade hardwoods remain with each succeeding cutting. The cull tree volume, which was only eleven percent of the total in 1936, has increased to eighteen percent of the total volume in 1947. Practically all of this volume is in hardwoods.

In addition to the timber production, South Carolina also participates in large scale forest industries. These industries, of which lumber is the principal product, are found in every county of the state. Pulp and paper manufacture ranks next to lumber in the value of products. Expansion of mills has increased the requirement of pine pulpwood to over a million cords per year.

The wood-using industries, as a group, rank next to textiles among manufacturing industries of South Carolina. These wood-using industries in 1940 provided a total employment of over eight million man-days, equivalent to full-time work by 31,600 persons. The number of persons benefiting from forest and mill employment is much larger, because of the many part-time workers. Farmers furnish much of this part-time labor. The state-wide distribution of farm forests—more than one-half of the total—is an important employment factor. Each year, the forests of South Carolina add an income of $172,000,000 to these citizens of the state.

Forests are as necessary to the maintenance of the farm, the state, and the nation, as money in the bank. The spirit of forest conservation, lying dormant in the minds of so many people, must be brought to life. It must be made to express itself in better timber management, in planting trees on deserted and idle land, and in the many phases of forestry that can be applied to woodlands to insure a continuous supply of wood products.
SOIL MINERAL DEFICIENCIES
How Do They Affect Cattle?
By TOMMY ELEAZER

It is needless to say that a man raising cattle wants to produce good healthy animals. Livestock raised in the bluegrass region of Kentucky and Tennessee, and in the Shenandoah Valley of Virginia are world famous for their excellence. You may ask why is this true only in these certain areas of our vast country. It is true because the soil contains plenty of all the soil nutrients that are essential to the welfare of good healthy cattle. In other regions cattle can only thrive to the degree to which the elements of the soil have supplied to the grains and forages utilized as feed the elements needed. This is by no means a new idea, but has been shown by centuries of past experience.

Many cattle growers who think they are supplying their animals with everything they need in the way of food are actually starving them by a lack of essential minerals. Let us take, for example, the phosphorus deficiency in the United States. Around 25 years ago this deficiency showed up in farm cattle in Wisconsin and Minnesota. The symptoms were stiffness of joints, harshness of coat, dull eyes, a general unthrifty condition, and an abnormal appetite which resulted in bone chewing. An soon as this situation was checked by supplying the animals with a phosphorus supplement, or hay grown on better soil, an almost immediate recovery of severely affected animals occurred. This case stimulated much research in other areas. In Minnesota alone, the soil in 60 counties was found to be deficient in phosphorus.

The use of mineral supplements where they are needed now takes care of cattle which are fed a grain ration in addition to their hay and pasture grazing. But this is not true for animals which are raised largely on forage crops and pasture alone. These animals may not be receiving an adequate mineral supply. The best way of correcting this deficiency is by supplying the deficient soil with the minerals it needs. This building up of the soil aids not only in correcting the deficiency, but also in increasing feed production.

(Continued on page twenty)
Aromatic Tobacco Can You Grow It?

By Edward M. Rast
Agronomy ’54

Aromatic tobacco, commonly referred to as Turkish tobacco, has been blended with domestically grown tobacco for more than 30 years; resulting in the popular blended cigarettes which are familiar to the American public. At present, the manufacturers of these blended cigarettes have need for more than eighty million pounds of aromatic tobacco annually.

Experiments carried on by the experiment stations of different southeastern states have shown that aromatic tobacco, of equal quality and value of those which have been imported, can be grown in many of our Piedmont and mountain soils of South Carolina, Virginia, North Carolina, and Georgia.

With the new devices developed for labor saving in harvesting, and new methods for curing operations, several people can now take care of one acre of aromatic tobacco at a labor income of $1.28 per hour as compared to 52.7 cents per hour. Since there are not many crops that will give a labor income of $1.28 per hour, this crop is worth investigating.

The production of these tobaccos will not only provide a cash income for the farmer, but it will also fit well into the crop rotations. The addition of this crop to the farm provides an additional use for farm labor at just the right time of the season. Since the better qualities of aromatic tobacco are produced on relatively poor soils the use of only 400-500 pounds of commercial fertilizers per acre is needed in the production of this crop.

The most suitable soils in the production of these tobaccos are those soils that are heavy with a clay base. The better soil types used in growing this crop include the Cecil, Appling, Madison and Porter series. When selecting soil for the production of this crop, usually the most suitable areas are those that are well drained, found near the crest or slope of hills.

For farmers who are interested in producing aromatic tobacco, Bulletin 111, Aromatic Tobacco — Instruction for its Production in South Carolina, has been written by J. R. Mattison, Extension Tobacco Specialist, J. A. Martin, S. C. Experiment Station and T. L. Senn, Associate Professor of Horticulture, and published by the Extension Service of Clemson College. This bulletin gives recommendations based on farm experience and research that will give practical help to farmers who plan to produce this tobacco. This bulletin can be secured free of charge through your county agent, or by writing to the Bulletin Room, College Library, Clemson, S. C.

SPRING TIME IS AROMATIC TOBACCO PLANTING TIME


Many Farmers in the Piedmont Section of South Carolina, North Carolina, Georgia, Tennessee, and Virginia Have Found "Pay Dirt" in the Production of Aromatic Tobacco for Which Southeastern Aromatic Tobacco Company Affords a Ready Market. The Clemson Agricultural College has Developed and Will Continue to Develop Better and More Efficient Ways and Means in the Various Phases of Aromatic Production.

IF INTERESTED IN GROWING AROMATIC TOBACCO, CONTACT YOUR COUNTY AGENT

SOUTHEASTERN AROMATIC TOBACCO COMPANY
1628 East River Extension
ANDERSON, SOUTH CAROLINA

JANUARY 1954

SEVENTEEN
Hints on Marketing Truck Crops

William E. Byrd
Ag. Ec. '54

In the southeastern part of South Carolina, much human effort along with much land resources, capital, and equipment is devoted to raising truck crops; some for sale in the towns and cities of South Carolina, and others to be shipped primarily to northeastern markets.

It has been found that when dealing with a product which is being shipped a long distance, it usually pays to ship only the better grades. Some of the major reasons are as follows:

1. The cost of transportation is a constant, regardless of the quality of the commodity. In other words, it will cost the same to ship a truck of lower grade watermelons or peaches as it will to ship a truck of higher grade products.

2. Usually quality during transportation and storage may be better maintained on high grade than on low grade products.

3. Consumers who buy the high-grade product are generally speaking, not too concerned with the price of the commodity and are willing to pay premium prices in order to obtain high quality products.

Many individual growers do not ship north in their own trucks but sell to trucker buyers. The trucker buyers consist of two groups; the trucker who works independently, and the trucker who is employed to buy for some company.

Truck crop producers are sometimes faced with the problem of how to dispose of surpluses, especially those of the inferior grades. One solution is to offer some of the better low grades on the local markets at a reduced price. You can afford to sell for less locally since you do not have the high transportation cost to worry about. Another solution is to sell the lower grades in other forms. In the case of tomatoes, they may be processed and sold as tomato juice or perhaps canned tomatoes. In the case of string beans and other vegetables, they may be canned.

One of the most important considerations in selling commodities lies in grading. Some of the more important reasons are:

1. The consumer wishes to know what he is buying without visual inspection.

2. The merchant buying produce by telephone or by letter likes to know exactly the type of goods he is getting to offer his customers.

3. Usually the producer will be well paid for his efforts taken. For example, two bushels made up of a mixture of No. 1 and No. 2 grades will usually not bring as much as a case of the No. 1 grade and of the No. 2 grade.

It is most important to producers to keep well informed of the current market situation in reference to the various markets so that they will better know both where to ship and when to ship.

SEE US FOR YOUR FARM SUPPLIES
WE CAN HELP YOU
WE HANDLE A COMPLETE LINE OF
SEEDS, FEEDS, FERTILIZERS, AND
GENERAL SUPPLIES

BASKIN FARM SUPPLY
BISHOPVILLE, S. C.
An Authorized Purina Dealer

WHY THE STOCK NEEDS MORE SILOS

Silage is succulent feed—the nearest thing to good pasture. It is relished by all livestock. Leading dairy records have been made by silage-fed cows. Prize-winning beef cattle are fed silage.

Southeastern Silo Company
640 Sixth Street Phone 2-8378
AUGUSTA, GEORGIA

THE AGRARIAN
When a man hangs out his Shingle...

Thousands of them started that way ... with a hole in the wall and a slab of cedar, hung over the canopied boardwalk.

They were men of every sort, in businesses of every sort. And most of them had some things in common, like vision, initiative, and faith in the future.

But each that lasted had still an extra quality in common with the other—an acute consciousness of the responsibilities he assumed when he went into business.

He knew that the day he “hung out his shingle” he did more than announce a new venture—he announced his willingness to plight his future with his community and with his neighbors ... to live with them, to work with them, and to serve them.

Now the signs have changed some. But though neon has supplanted the cedar slab and the modern store front has replaced the canopied boardwalk, the philosophy of the successful remains the same.

It’s the philosophy that admits to the responsibilities assumed when a man “hangs out his shingle”—the responsibilities to his neighbors, to his community, and to his country.

It’s the philosophy to which the John Deere dealer subscribes.

JOHN DEERE
Moline Illinois
SOIL MINERAL DEFICIENCIES

(Continued from page sixteen)

Now nearly every state conducted research on the need of minerals for various classes of livestock. The area where phosphorus deficiencies occur is known to include the Northern Great Plains, the Gulf Coast, a part of the Atlantic Coast, the middle South, and the extreme Southwest. This shows that the problem of soil deficiencies is widespread throughout our country. It has been shown that where there is a deficient soil, there are deficient cattle. Our cattlemen must face this problem.

There are several ways of tackling this problem. One way is by applying the needed mineral fertilizer to pastures. Fertilizer will increase the nutritive value of pasture grass, and the grass will in turn help supply the cattle grazing on it with the needed minerals. In order to have good healthy cattle we must have a good healthy soil.

It has been shown by many past experiences that cattle prefer pasture which has been properly fertilized. Experimental pastures have been fertilized in certain parts and not in others. The cattle on these pastures would graze the fertilized portions and leave the unfertilized part practically untouched. Dr. W. A. Albrecht of the the University of Missouri tried a similar experiment with hay. He put hay from a well fertilized field on one stack, and hay from a poorly fertilized field on another. He then turned cattle on the two stacks and found that they completely consumed hay from fertilized field before starting on the stack from the unfertilized field.

Although our state of South Carolina is not too deficient in minerals, a great part of our country is deficient in calcium, phosphorus, sodium, chlorine, iodine, iron, copper, cobalt, manganese, boron, magnesium, zinc, potassium and sulphur. In order to raise a good healthy grade of cattle, the growers in these deficient areas must doctor their "sick" soil. I might use the irrigationist’s expression and say that it is not a matter of whether we can afford to adopt a pasture improvement program, but whether we can afford not to. If we are to have healthy cattle, we must first have healthy soil. And that means to apply lime to get the reaction right and then also supply such other elements as are found to be needed.
Pasture renovation is no longer a complicated job requiring 4 to 6 separate operations. The new McCormick pasture renovator makes seed trenches and places commercial fertilizer, grain and grass seed in 3-deck strips—in one trip!

Deep placement of fertilizer, directly below the seed, produces better stands than broadcast distribution. This new pasture renovator also saves time, fuel, and up to 50 percent of costly grass seed. Most erosion losses are eliminated. Livestock can continue grazing pastures that are being improved. The McCormick Renovator also can be used for deep placement of commercial fertilizer, or as a conventional grain drill and band type grass seeder.

The McCormick pasture renovator is another example of the way IH engineering keeps product development abreast of the latest discoveries of our crops and soils scientists. This helps farmers to start profiting from new farming techniques almost as soon as they are proved practical.

---

1. Colter cuts sod. Diamond-point applicator makes narrow trench as deep as 4 inches.

2. As fertilizer is released in the trench, a layer of soil falls over it to protect seed from burning.

3. Oats and other unhulled seeds are released ahead of the press wheels which firm soil around them.

4. Clover and other hulled seeds fall into moisture-holding grooves either before or after the press wheels.

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INTERNATIONAL HARVESTER

HOW THE STARS GOT STARTED...

Eddie Sauter and Bill Finegan, leaders of America's most excitingly-different dance band, met in 1939 as struggling young arrangers. Ed had studied trumpet and drum at college, worked up to arranging for "name" bands; Bill had studied in Paris, won a spot with Tommy Dorsey.

After 13 years of pooling new ideas, they formed their own band. It clicked!

---

Sauter-Finegan Orchestra
AMERICA'S NEWEST, MOST COLORFUL DANCE BAND

---

Eddie Sauter says:
"I'VE TRIED MANY BRANDS,
BUT I GET MOST PLEASURE FROM CAMELS. YOU WILL, TOO!"

Bill Finegan says:
"WITH ME, CAMELS CLICKED INSTANTLY. THE FLAVOR'S HOW I LIKE IT, THE MILDNESS JUST RIGHT."

---

Start smoking Camels yourself!
Smoke only Camels for 30 days and find out why Camels are first in mildness, flavor and popularity! See how much pure pleasure a cigarette can give you!