SERVING THE FARMERS IN NORTH AND SOUTH CAROLINA SINCE 1906

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CHARLESTON, S. C. CHARLOTTE, N. C.
All around us we hear the rumblings of the people of the South — the people who are of the lineage of Lee, Jackson, Wade Hampton, John C. Calhoun, and other great Southerners, the people who have fought, died, and risen again because of the courage given them through their beliefs.

We, of the South, are not hot headed upstarts, as many of the people of this country would have others believe, but are people that have the firm conviction in a way of life that has been so much a part of us that we look on it as sacred.

We in the South have been faced with social, political, and economic problems in the past, but not in the last 90 years have we been faced with a problem of such impact as the one created May 17, 1954. The problem is larger than who goes to school with whom. It is more than a fad or mass hysteria. It brings us face to face with a question that is yet unanswered. Is the right of the Southern States, or any other state, to deal with its own people in internal problems which touch on the customs, morals, and the very culture of these people going to be denied?

We cannot answer this question; we can only pray that we can stand, united against the outside forces that attempt to divide us. We are not sure of the enemy we fight because we do not know the force that sends its legion of lawyers, editors, and rabble rousers.

Our beliefs are being attacked on many fronts. Our enemies come in the guises of social reforms, religious codes, and political pressures.

We must stand firm and unflinching and in so doing we know that our fathers before us stand with us.
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Your Tobacco Plant Bed

By Carol Brown, Agronomy '57

One thing that every tobacco grower is more concerned with is his tobacco bed; for without plants he cannot produce a crop. In the following article I have tried to take up a few of the factors which should be considered in the production of tobacco plants.

One of the most important factors in selecting a location for your tobacco plant bed is the soil. Beds are located on many types of soil, but the best seems to be the leaf mold soils found in the woods. The desired characteristics are that the soil should have a high organic matter content, should not become waterlogged, and the top two inches should never bake or become hard and should be relatively free from weeds and disease. If a soil is selected that does not have much organic matter, it can be corrected by adding well rotted manure or by growing and turning under legumes. Clay soils will grow plants under good conditions but the internal drainage is poor and if left undisturbed tend to become hard. Sandy soils are subject to rapid leaching and may require more water than clay soils.

The location selected should be exposed to full sunlight because shading slows down growth and makes the plants more susceptible to blue mold. Trees should be situated on the north and northwest to afford protection from cold winds, but if any trees cast shadows on the bed they should be removed.

Moisture is also a factor of prime importance. Plants should be located where a liberal amount of water can be obtained in case of a long dry spell. Water from streams and ditches should not be used because they may contain disease. Any excess water should be removed from the bed or it will keep the soil air out and cause the roots to rot and the plant to turn yellow and die because it cannot secure nutrients. The excessive moisture may also cause the growth of a fungus which causes "damping off."

The shape, size, and type of bed also play an important part. Narrow beds are more desirable because the plants are more easily reached to be dusted, and for the removal of weeds. The most popular beds are about four feet wide and about 25 yards long. The frames around the bed usually consist of boards held on edge by stakes or pine logs. The disadvantage of the logs is that the rough bark may tear the cover. If the bed is over three yards wide, it is necessary to have some sort of support in the middle to hold the cover up. Most of the beds have glass bottles which have been inverted and pushed into the soil. Some people use a mound of earth around the bed instead of poles or boards. This is satisfactory, but is not as popular as the other methods. The straw bed is one which seems to be gaining in popularity. Some type of straw is placed over the bed in a thin coat and the cloth is then placed over the straw and anchored around the edges. The advantages of this type of bed are the cheaper construction, and the warmth and retention of moisture afforded by the straw. Pine straw which is reasonably clean is the best.

The soil in the bed area should be cleared of all debris and plowed to a depth of eight inches. If the top is plowed deeper than this, it will be turned under and the subsoil will be on top. After plowing, the bed is usually harrowed to break up all clods of dirt. Now the bed should be shaped so that it is slightly higher in the middle and sloping toward the edge to improve drainage.

The selection and clearing of a new site for a tobacco bed was necessary a few years ago due to weed seeds, diseases, and insects. This is no longer necessary because of the new chemicals which have been developed to sterilize the soil. The two most effective ways of sterilizing the soil are by burning or using these new chemicals. Burning has been used for many years, but it only kills weed seed and does not affect any diseases or insects which may be present. If the bed is going to be burned, the fertilizer should be applied first and then about four or five feet of cotton stalks which have been packed down. The soil should not be disturbed after burning except to rake it over lightly and then plant the seed. The chemicals most commonly used are methyl bromide,

(continued on page 20)
Peach Pest Control in S. C.

By T. E. Hayden, Jr., A.H. '56

There are four main areas of peach production in South Carolina. In 1950, 81% of the state's orchards were in the Piedmont, 9% in the Ridge area, 7% in the Sandhills, and 3% in the Upper Coastal Plain. Spartanburg is the leading peach county with about 60% of the total commercial trees. Using 1954 figures, which are fairly representative, peaches provided the third largest income of field crops and fruit and nut crops combined. Peaches brought in 4% of the total crop dollars, which seem small, but it must be remembered that the orchards are localized and not as widespread as cotton and tobacco, the two crops which exceed it in value.

Having this bit of information about peaches, peach pest control can now be more fully appreciated. There are two types of pests of peaches. These are insect pests and diseases. Frost may be considered as a pest, but since there is little that the grower can do to prevent loss by frost, this article will be confined to insects and diseases.

The plum curculio is a constant threat to the peach grower. Parathion has given excellent control of the plum curculio under orchard conditions. The parathion may be applied either as a dust or as a spray. One thing must be remembered about parathion though, IT IS EXTREMELY DANGEROUS to humans and livestock unless precautions are observed. The jarring sheet is often used to get an indication of the relative numbers of the curculios throughout the orchard. Begin jar-ring when the average daily temperature is about 55° for several days.

The oriental fruit moth is not a serious pest in South Carolina except on scattered locations. Vigilance should still be given to detect any however, and all varieties ripening in late July and August should be sprayed. Two pounds of wettable DDT to 100 gallons of water 3-5 weeks before ripening has given good control. Growers who are using parathion will not need to make this application.

There are three types of scale insects which are found in South Carolina: San Jose scale and Forbes scale are very similar and may be controlled by dormant oils or liquid lime sulfur. The white peach scale requires two applications of a dormant spray two weeks apart. San Jose scale has given the most trouble in South Carolina. Growers using parathion will find that it helps control scale. If after checking no scale is present, the dormant spray may be omitted.

Plant bugs sometimes injure small peaches causing cat-faced and deformed fruit. These bugs include the

(continued on page 7)
“It’s the Kind of Implement That Makes a Customer a ‘Friend’...”

AND this John Deere “Li” Lime and Fertilizer Distributor makes friends because—when purchased for farm use—it’s not just an item of expense, it’s an investment. It’s a wise investment and a necessary one for almost any farm’s soil conservation program.

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SIX
A time honored tradition of Clemson has disappeared due to progress is the one that “rats” participated in during the first months of their stay at Clemson. In the older days, as remembered by every alumnus, the word was passed by the upperclassmen that the creamery’s ice cream machines had “broken down” and that ice cream was going to waste. The freshmen, gathering pitchers, trash baskets, and every available container, ran like rabbits to the old Dairy Building for their share of the ice cream. The old creamery has now been replaced and there is no excuse for the ice cream freezers to be “broken down.”

Clemson now has a modern Dairy Industry Laboratory for processing all its milk, ice cream, and other dairy products. This laboratory is located in the Food Industries Building, which was recently completed under the Agricultural Building Program. The “plant,” as it is affectionately called by the dairy students, is a large wing consisting of three sections which lie lengthwise of the building. The outer section consists of the blue cheese processing room, cold storage rooms and the bottle washing room. The center section consists of the large processes room where all the dairy products are processed. The section next to the remainder of the Food Industries Building is for dry storage. A quality control laboratory is also located in this section.

To trace the “flow” of the plant one must always begin with the basic material, milk. Milk produced at the college dairy is brought to the plant in a 1500 gallon tank truck. The truck is driven up a ramp at the rear of the building, and a stainless steel sanitary pipe is connected to it and to a positive blow milk pump. Sanitary piping is used throughout the plant for conveying milk. The milk is pumped from the tank through a clarifier into one of the two 1000 gallon refrigerated storage tanks. When milk is to be processed, milk flows by gravity to a supply tank from which it is pumped through a special type high temperature, short time pasteurizer — only one at any college—to get rid of odors and to destroy bacteria. From the pasteurizer the milk is pumped into a homogenizer where it is homogenized and then pumped to a plate cooler to be cooled.

The milk, now being ready for bottling, is pumped through stainless steel piping to the bottle filler. Automatically cleaned, sterilized bottles are filled with the processed milk. The filled bottles pass on to the capping machine, and finally by conveyor the milk is passed into the milk storage room.

When ice cream is processed the milk is pumped into a 200 gallon vat pasteurizer and the other necessary constituents are added. The ingredients are thoroughly mixed, pasteurized and then pumped through the homogenizer, a plate cooler, and then into a refrigerated mix storage tank for holding.

After proper aging the mix is flavored and frozen into ice cream by either of two models of continuous ice cream freezers. The ice cream is packaged directly from the freezer into pint, quart, or 3-gallon containers. The packaged product is conveyed into a — 20° F. hardening room for final freezing and storage.

Forward of ice cream freezers is the butter processing area where a stainless steel churn is located for the churning and processing of butter made at Clemson.

A cleaning-in-place system is used to clean and sterilize all stainless steel sanitary pipe in the plant. To save taking down all the pipe, this system is used and involves the running of chlorine solutions as a detergent, followed by very hot water as a rinse solution.

In the southwest corner of the building is the blue cheese processing room. Milk for cheese making is pumped from the milk storage tanks through stainless steel sanitary pipe lines to the cheese vats. Curd made from the milk is inoculated with blue mold, cured, and processed into blue cheese. After aging, the cheeses are wrapped as wedges and rounds. The blue cheese room is isolated from the rest of the plant to prevent contamination of other dairy products by blue mold.

A platform is around the outside of the dairy plant and is used for the loading and unloading of dairy products and supplies. Conveyors run from the platform into various rooms inside the plant. Steam and cold water connections are located on the platform for washing and rinsing purposes.

Our dairy plant, as modern as can be found in the South, has been in operation since November 1955. We dairy students are proud of our new quarters which gives us the benefits and opportunities of learning our chosen profession through use of the latest and most modern equipment and facilities. In addition to the student’s work, a program of research is underway for the continued development and advancement of the great Dairy industry of today.

PEACH PESTS

(continued from page 4)

black peach aphid, mites, red spiders, and the corn earworm. These insects are especially found on heavier soils and where legume cover crops are used, DDT should be applied. The corn earworm causes the most damage in orchards with a vetch or Austrian winter pea cover crop. Disking the cover crop under will help to control the corn earworm as well as spraying or dusting to control them.

Borers may soon be the biggest pest of the peach industry in the Southeast. South Carolina has three types of borers: the peach tree borer, the lesser peach tree borer and the shot-hole borer. The peach tree borer is a creamy to pale-yellowish caterpillar which bores into the trunk at or just below the ground surface. Ethylene dichloride emulsion or parachlorobenzene (PDB) crystals have been recommended for the control of this pest, however, spraying the trunks of the trees with DDT or some other organic insecticide has given good results in some sections of the country. Ethylene dichloride emulsion may be used in lieu of (continued on page 8)
PEACH PESTS
(continued from page 7)

the crystals and is safe to use. It is slightly more expensive, but saves labor. Ethylene dichloride is more volatile at lower temperatures and can be used later in the season, up to early November.

Dosage: The strengths of the emulsions vary according to the individual manufacturer. It is essential to follow the manufacturer’s directions in diluting it. Be sure that the stock emulsion is stirred or shaken thoroughly before removing it from its container.

Method of application: Keep it constantly stirred as it is being used. It should be applied in a small trench dug around the base of the tree. After treating, place several shovelfuls of soil in a mound against the tree. The mounds should be torn down after 4 to 6 weeks unless it is cold, then they may remain longer. In all cases, tear the mounds down by June 15 to prevent the female moths from laying eggs high on the trunks and making subsequent treatment difficult.

PDB crystals sold specifically for peach tree borer control should be the ones used if the individual prefers to use the crystals. Fall treatments are more effective than spring treatments — October being the best month.

Dosage: On 6-year-old trees and older apply 1-1/2 oz. PDB per tree. On younger trees from ½ - ¾ oz. PDB is not recommended for 1 and 2-year-old trees.

Method of application: Remove the excess gum, clear away any weeds and trash for a distance of a foot away from the tree. Loosen the soil and level it, distribute PDB in a narrow continuous band about two inches from the trunk. Place several shovelfuls of soil over the band of PDB crystals, being careful not to knock them up to the trunk, then compact the earth into a cone shaped mound with the back of the shovel. Remove mounds in 3-6 weeks after treatment, the shorter time for younger trees. Since care must be taken when building the mound up on the crystals, the emulsion method will probably save labor.

Trunk sprays: Effective control of the peach tree borer has been obtained by spraying the tree trunk with DDT or parathion. Thoroughness of coverage is essential for borer control. Growers using parathion in their regular spray program should spray the trunks and scaffold limbs each time they spray. This practice will help in controlling the few borers which emerge early in the season and particularly the lesser peach tree borer.

The lesser peach tree borer commonly occurs in wounds and cankered areas on the trunks and branches, although they are not the cause of these cankers. Partial control of this borer may be obtained by keeping the tree as free as possible from these cankers, wounds, and winter injury. Some methods in doing this are: 1) Prune during the dormant period. 2) Practice close pruning and avoid stubs. 3) Cut out all dead wood at pruning time. 4) Cankers and wounds on the tree should be cleaned in the winter with a non-injurious asphalt or commercial pruning preparation, or with white lead paste made with a small quantity of boiled linseed oil. Never use turpentine. If the trunks are sprayed with para-thion during the other sprays, the grower will have less trouble with the lesser peach tree borer.

Shothole borer: This borer usually attacks dead or weakened trunks and branches of all fruit trees, but may be found on healthy trees. The best control method is to remove all dead wood from the trees. Vigor of the remaining trees may be improved by heavy application of nitrogen, proper drainage, and effective scale control. The oil emulsion treatment is moderately effective in controlling the shot-hole borer.

Most diseases of peaches are fungus organisms. Leaf curl is a fungus which infects young foliage and fruits during the spring. Infected leaves appear thick and are distorted. Infected fruits are often irregular and knobby in shape. Such peaches often drop prematurely. Leaf curl is of economic importance only in the Piedmont. Piedmont growers should apply a leaf curl spray each season. Lime-sulfur or bordeaux spray may be used to gain control of this fungus.

Peach scab overwinters in shallow twig lesions. The first spores appear shortly after petal fall and continue during the growing season. Disease symptoms appear on leaves, young twigs and fruit. On the fruits, scab-like lesions develop, but are only skin deep. Wettable sulfur applied according to the spray schedule will control the scab.

The most important peach disease in South Carolina is brown rot. Brown rot is probably of more importance in the Piedmont section. The fungus overwinters in fruit mummies lying on the ground or hanging in the tree. These mummies produce spores at blossom time. In infested orchards, sprays should be applied at 2-3 day intervals during the blossoming period. During the summer, the rot infects immature fruits. By harvest time, a high percentage of the fruits may be infected. Control measures include the removal of all rotted fruits, mummies and buttons following the harvest and spraying during blos-soming with a wettable sulfur spray or dust. Spraying or dusting should also be done during harvest if the season is rainy.

Rhizopus rot is caused by a fungus parasite often known as bread mold. Although this disease is detected in the orchard, the damage occurs during transit and storage. This rot appears as a raised black mold with little black spore balls. Sanitary conditions around packing sheds are important in controlling this fungus.

Peach anthracnose or “bitter rot” is caused by a fungus which starts to rot the fruit as it starts to mature or while en route to market. The disease is first seen as a small brown rot which enlarges slowly. The center of the spot becomes sunken, and rings of spores appear. This disease has been found most severe where blue lupine is planted as a cover crop or when planted near orchards. Two pounds captan per 100 gallons water in preharvest sprays seems to control it. The captan spray is also helpful in controlling brown rot and may elicit control of these two fungi simultaneously.

Bacteriosis or bacterial spot is most severe in the Sandhill and Ridge areas. This disease is caused by a bacteria which overwinters in twig lesions. The disease may occur on foliage, fruit and young twigs, and is spread chiefly by wind-blown rain. The fruits appear with black spots on the skin, which if over ⅛ square inch cause an otherwise No. 1 to be a No. 2. The regular spray program and all other fungicides tested in South Carolina have resulted in poor control of this disease. Zinc sulfate and hydrated spray lime applied at 5- to 7-day intervals may provide control.

(continued on page 12)
TOXAPHENE IS RECOMMENDED FOR

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DAIRY NEWS

Ernest L. Corley, Dairy '49, was a visitor at Clemson in the latter part of February. Professor Corley is a teacher and research worker on the Dairy Husbandry staff at the University of Wisconsin Madison, Wisconsin. He is scheduled to receive his doctorate degree at the University of Wisconsin in June.

John E Wessinger, Dairy '50, is a dental student at the Dental College at the University of Virginia.

Benjamin S. Wiggins, Dairy '56, and former Agrarian staff member, is now employed by the Edisto Farms Dairy, Columbia, S. C. Benny is to be married on March 17, 1956. He is awaiting his orders to report to the Air Force for pilot training.

Two dairy graduates of the class of 1953 are candidates for their Masters Degree in Dairy Industry here at Clemson. They are William R. Bellamy and Wayne Williams.

A recent visitor here at the Clemson Dairy Department was Mr. James H. Boulware, Dairy '32. He is Agricultural Attache at the American Embassy at Canberra, Australia. Mr. Boulware has been in foreign agricultural work since World War II.

THE BLOCK AND BRIDLE CLUB TO PRESENT BARBECUE

The Block and Bridle Club, whose plans have largely been defeated by circumstances this year, swung into action at the first meeting this semester as it planned a barbecue for the Block C Intracampus Game on the 10th of March. Committees have been appointed and from the looks of things this should be one of the biggest and best barbecues the club has ever sponsored.

A contest has been initiated between club members to see who can bring in the largest number of new members this semester. New members will be initiated formally at the "y" cabin in the near future. Any agriculture major who is genuinely interested in animal industry is eligible for membership in the club.

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AGRONOMY NEWS

Dr. Gilbeart H. Collings, Head of the Clemson Agronomy Department has just signed a contract with a publishing house in Barcelona, Spain, for the translation into Spanish and the publication of his 5th Edition of Commercial Fertilizers. These books are designed for the Spanish market in Spain and South America.

Dr. W. B. Boykin has been appointed State Representative of the South Carolina Experiment Station to represent the station with all soil cooperative projects between the South Carolina Experiment Station and Federal agencies.

Dr. W. P. Byrd of Ohio State University is being employed by the Agronomy Department as small grains breeder. He will begin work here on April 1, 1956.

Dr. D. D. Hill, Head of the Department of Farm Crops, Oregon State College, addressed the Agronomy Club and staff members on February 14. He also showed picturesque slides of the Pacific Northeast.

LAZAR AND WHEELER JOIN AZ

Alpha Zeta is proud to announce that two faculty members, Dr. Richard Wheeler of the Animal Husbandry department and Dr. J. T. Lazar of the Dairy department, have been accepted by the national office as associate members.

Alpha Zeta held its first meeting of the second semester on February 14. The chief item of business was the taking in of new members which will take place in the near future.

Watt E. Smith, the chapter's delegate to the national biennial conclave in the fall of 1954, gave a short report on his activities for the benefit of boys who may be interested in going to the conclave next September. The delegate will be elected soon after new members are initiated.

The fraternity will again offer a $25 scholarship to the outstanding freshman in Agriculture. This award will be presented on Honor Day this spring.
The BREEDERS' GAZETTE
An Index of South Carolina’s Outstanding Breeders

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Breeders desiring Ads in this Gazette write THE AGRARIAN, Box 2525, Clemson, S. C. Ads $3.00 per issue.

PEACH PESTS
(continued from page 8)

A threatening disease to South Carolina growers is the phony disease. Caused by a virus, infected trees have abnormally dark green leaves, terminal twig growth is stunted and the fruit is greatly reduced in size and quantity. This disease is present also in wild plums, but is symptomless in this host. Phony disease occurs in all peach growing areas of the state and has caused serious damage in some localities. Control measures include: 1) Remove all infected trees as soon as detected. 2) DESTROY ALL WILD PLUMS WITHIN 300 YARDS OF PEACH ORCHARDS. Wild plums may be killed by spraying them with Ammate weed killer, rate 1 pound per gallon of water. Spray equipment should be carefully cleaned after using this material.

Root knot or nematode is caused by round worms which penetrate the feeding roots of young trees, causing an early death of infected trees. Symptoms are “galls” on the root about matchhead size. Nematode infestation has been frequently observed in the Sandhill areas. Root knot resistant stock is the control measure being used to combat this nematode. Shalil, Yunnan and S-37 are the three principle stocks being used in South Carolina. All of these stocks are susceptible to certain kinds of nematodes, but S-37 has given the best results.

Crown gall is a soil-borne bacteria disease which occurs on a wide range of hosts including the stone, pome and bush fruits. Infestation may occur at any time during the growing season. The bacteria overwinters in living tissues of galls or free in the soil. Drainage water is an important means of spreading the bacteria. Control measures include: 1) Obtain and plant only inspected, disease free stock in soil. 2) Remove and burn diseased roots and stumps. 3) Do not reset trees in an infected orchard. 4) Infected orchard sites should be planted to small grain or row crops for 5-6 years before resetting another orchard.

Host introducing man to woman wearing a strapless gown: “This is Professor Shefertz, authoring on structural engineering. He wants to ask you something.”

“* * * *”

“What happened to your finger?”

“Oh, I was downtown yesterday getting some cigarettes and some clumsy fool stepped on my hand.”

“* * * *”

Host: Did anyone ever tell you that you have beautiful eyes?”

She: “Not while looking where you are.”

THE AGRARIAN

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A farmer visited his son at U.S.C. Watching students in a chemistry class he was told they were looking for a universal solvent.

"What's that?" asked the farmer.

"A liquid that will dissolve anything."

"That's a great idea," agreed the farmer. "When you find it, what are you going to keep it in?"

Husband: "The iceman's been bragging that he's kissed every woman in this apartment house, except one."

Wife: "Must be that snooty Mrs. Jones upstairs."

"That's a hot number," said the steer, as the glowing brand was pressed against his tender flank.

Ray—"Do you think I should put more fire in my editorials?"

Don—"No—vice versa!"

Mary Ann: "What's your opinion of my boyfriend?"

Betty Ann: "He'd be a bigger success if he had more horsepower and less exhaust."

THE AGRARIAN
The Men Who Guide Us

By Watt E. Smith II

MILTON D. FARRAR

Doctor Farrar, who is the Dean of the School of Agriculture, graduated from Iowa State College at Ames, Iowa, in 1925 with a Bachelor of Science degree. In 1927 he received his Master of Science degree from South Dakota State College. Further study at Iowa State College gave him his Doctor of Philosophy degree in 1932. He has done some additional work at the University of Illinois.

His professional career began at the University of Illinois where he remained for eighteen years. The following three years found him working at the University of New Hampshire. He left the University of New Hampshire for Clemson College in 1949. At Clemson he started as Head of the Department of Entomology and Zoology. In 1953 he was made our Dean of Agriculture, the position he now holds.

The accomplishments of Doctor Farrar are noteworthy. Here are only three. He developed the vacuum bell-jar technique for testing insecticides. A granular type of insecticide was developed by him, and this type of insecticide is being used throughout the world today. It was developed between 1950 and 1952. He has published about 80 papers on entomology and zoology.

His hobbies include gardening (particularly for ornamentation), reforestation, wildlife, and anything to do with the out-of-doors.

Doctor Farrar was married in 1925. He and his wife have three children—the only girl is now married, the older son is working for his Master’s degree in Music, and the other son is a sophomore at Daniel High School.

He was one of the second class of ROTC officers and was a Reserve Officer for a number of years.

Recently, he was the agricultural representative on the committee which built the new Agricultural Center here at Clemson.

BEN E. GOODALE

Mr. Goodale whose present title is Professor of Dairying is a native of Marshalltown, Iowa. He was a farm boy in his youth. He graduated from Iowa State College in Ames, Iowa in 1922 with a Bachelor of Science degree and further study there gave him a Master of Science degree in 1929.

In 1922 when he came to Clemson, he was in charge of Dairy Manufactures Teaching, and as a sideline was head freshman football coach. He was head freshman coach for three years and then became varsity line coach for seven more years. For 11 years he was a member of the Southern Football Officials Association.

Mr. Goodale is a member of the following fraternities on the campus: Blue Key, Alpha Zeta, Phi Eta Sigma, Mu Beta Psi, and Tiger Brotherhood. He is the faculty advisor for Phi Eta Sigma, the Presbyterian Stu-

(continued on page 18)
WILLIAM J. GOODWIN

Dr. Goodwin, who came to Clemson in 1953, is an Associate Entomologist and an Associate Professor of Entomology. He received his Bachelor of Science degree from Oklahoma A & M College in 1950. In 1951, he received his Master of Science degree and in 1953, his Doctor of Philosophy degree, both from Cornell University.

Dr. Goodwin has done research in the field of veterinary entomology. A self-rubbing device for the control of flies and lice on cattle has been investigated by him, and this device is made from just barbed wire, burlap bags, and three small posts. Also he has done research on the control of houseflies, cattle grubs, hog lice, cattle lice, and biting flies.

Dr. Goodwin is a member of Alpha Zeta, Phi Kappa Phi, Phi Sigma Biological Fraternity and Sigma XI. He is a member of the American Association for the Advancement of Science, the Entomological Society of America, and the South Carolina Entomological Society, Inc. Also, he is a member of the Board of Directors for the South Carolina Entomological Society, Inc.

At Clemson, Dr. Goodwin teaches medical and veterinary entomology to graduate students. Directing the graduate students is another job of his.

Photography is his hobby, and hunting is his favorite sport. In 1947 he was married and now he has a boy who is three years old and a girl who is one and a half years old. The Army had his services from 1943 to 1946, and he was discharged as a sergeant. Two of those years were spent overseas. Now he is a first lieutenant in the Medical Service Corps Reserve.

* * * * *

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He: I won't!
She (with a sigh of relief): All right, I've done my duty.
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evenly spaced, overlapping gear speeds forward, all the way from 1.6 to 20 MPH... plus three reverse speeds.

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THE MEN WHO GUIDE US
(continued from page 15)

tand Association, the Agrarian, and head freshman football coach. He

the Senior Council. Incidentally, he

was a co-founder of the Agrarian in

1938. Also he is on the YMCA ad-

visory board. College chairman for

Religious Emphasis Week in 1942

and 1952 and chairman of the fac-

ulty committee on Student Govern-

ment are more of his honors.

He is a charter member of the first

Civic Club to be organized at Clem-

son — the Fellowship Club. The

Fellowship Club’s first president was

Mr. Goodale. He was the founder

of the local Public Health Clinic and

has had charge of it for the Fellow-

ship Club since 1937. The Presby-

terian Church had his services as a

deacon for many years, and now he

is an elder.

He is a member of the American

Legion and a veteran of World War

I. For action in World War I he re-

ceived the French Croix de Guerre

with a Silver Star citation. When

Strom Thurmond was governor of

South Carolina he made Mr. Good-

ale an honorary Colonel. He was

Clemson’s Commander of Civilian

Defense for a time during World

War II. He is a member of the

American Association for the Ad-

vancement of Science, the American

Association of University Professors,

and the American Dairy Science As-

sociation. Also he is listed in Ameri-

can Men of Science, Who’s Who in

American Education, and Who’s Who

in the South and Southwest. He re-

ceived the Jewish Award and the

Catholic Award for his contribution
to religion on the Clemson College

campus.

Doctor Gordon Goodale, a Clem-

son graduate of 1948, is Mr. Good-

ale’s only son. Doctor Goodale is a

research chemist with Union Carbide

Chemicals.

Mr. Goodale’s hobby is welfare

work in connection with the local

clinic, and his favorite sport is foot-

ball.

Individual intelligence and back-

bone are still necessary for modern

civilization despite the tendency to

gather in huge groups and holler yes
to a loud orator.

Said farmer one to farmer two:

“My best cow died of Bang’s disease.

Some hunter shot her.

* * * * *

Country Constable—“Pardon, miss,

but swimming is not allowed in the

lake.”

City Flapper—“Why didn’t you tell

me before I undressed?”

Constable — “Well, there ain’t no

law against undressing.”

* * * * *

You, down there,” shouted her

father from the top of the stairs, "Do

you think you can stay all night?”

Er, thank you,” replied the

young lover, "but I’ll have to phone

home first.”

* * * * *

Daughter: “I can’t marry him

mother, he’s an atheist. He doesn’t

believe in Hell.”

Mother: “You go ahead and mar-

ry him dear; between the two of us

we’ll convince him he’s wrong.”

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EIGHTEEN

THE AGRARIAN
Now TRACTION BOOSTER Farming
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Changes a dragging load to a ROLLING load!
Hydraulic TRACTION BOOSTER automatically shifts implement weight to tractor's drive wheels. Instead of a dragging weight, you have rolling weight . . . an easier load to pull, requiring less fuel per acre.

The work capacity of the dynamic Allis-Chalmers WD-45 Tractor... great as it was... has now been expanded by acres — without increasing the weight of the tractor. This development is made possible by the exclusive Allis-Chalmers hydraulic Traction Booster system and a new remote ram principle... as automatic as the tractor's governor.

So that WD-45 owners may capitalize on this added work capacity to the fullest, Allis-Chalmers has introduced a line of new big-capacity, wheel-transported Traction Booster implements of outstanding design and performance.

These include two double-action disc harrows (10-ft. and 12½-ft.); a 4-bottom moldboard plow; and a heavy-duty 4-blade disc plow — all big husky implements with SNAP-COUPLER Hitch, and pulled from a single free-swing hitchpoint ahead of the tractor's rear axle.

Full information about this great new development in power farming may be obtained from any Allis-Chalmers dealer. It means more work... done better... in less time... at lower cost!

FARM EQUIPMENT DIVISION, MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS

Snap-Coupler is an Allis-Chalmers trademark.
cyanamid, and urea-cyanamid. If burning or any of the cyanamid treatments are used, the soil should be fumigated with DD for the control of nematodes.

One to one and one-half pounds of a 6-9-3 fertilizer should be applied to each square yard of bed. The fertilizer should be uniformly applied and then thoroughly mixed with the soil. Too much organic material should be avoided because it may increase fungus growth. Muriate of potash should never be used because the chlorine it contains may cause injury to the young plants.

It is recommended to use about one to one and one-half rounded spoonfuls of seed to the hundred yards. The seed should be mixed with soil from the plant bed or with ashes if they are available. The seed should be sown when the wind is not blowing as they are very light. A better stand will be secured if the bed is sown from two different directions. After seeding the bed should be packed by using the feet, a packer, or a roller.

It is often necessary to top-dress the bed with nitrogen sometime during the growing season especially right after an attack of blue mold or an especially cold spell. The nitrogen will give a quicker response if it is in solution. A good solution is five pounds of nitrate of soda dissolved in fifty gallons of water to the hundred yards. The plants should be washed down with more water after the solution is applied to remove it from the leaves and wash it down into the soil. Some farmers prefer to use a light dusting of cottonseed meal on the plants. The meal is taken directly into the plant from the leaf area but should only be applied when the plants are perfectly dry. If Ferbam or Zineb has been used for the control of blue mold, it is not necessary to use any top-dressing because these chemicals stimulate plant growth enough to be sufficient in most cases.

Plant bed covers are used to protect the plants and keep them warm. The covers used are an unbleached cotton cloth which has from sixteen to thirty-two threads per inch. The mesh is usually 22 x 18 or 24 x 28. The 24 x 28 is recommended for use in South Carolina. If the covers are removed from the bed at the end of each season and washed, they will last four or five years.

The bed should be well cared for during the transplanting season. The plants should be toughened by removing the cover from the bed for a short period each day about a week or longer before transplanting. The bed should be watered before the plants are pulled to make the soil around the roots soft so they will not be damaged. If water is added again after the plants are pulled, it will pack the soil around the roots of the plants that are left and cause them to give a quicker growth.

I believe that the farmers in South Carolina will find their yields greatly improved if they pay more attention to their tobacco beds and start off with the healthiest plants they can possibly produce.
Modern farming has gone piggy-back, so

This Farm Fleet has a One-Man Crew!

Motomation has reached the farm!

With a Minneapolis-Moline Uni-Farmer, you command a self-propelled squadron of machines that lets you harvest virtually every crop you grow . . . and you do it from a single power source. You cut hay with the Uni-Windrower, bale hay with the new Uni-Balor. You turn hay or row crops into silage with the Uni-Foragor. You harvest grain, bean, or seed crops with the Uni-Harvestor; pick corn with the Uni-Huskor or pick and shell your corn with the Uni-Picker-Sheller. And, all Six Uni-Farmer machines mount on the same Uni-Tractor. One man runs them all!

Only Minneapolis-Moline builds the Uni-Farmer. It is another of the outstanding engineering achievements that have given this 131-year-old company idea leadership in the farm machinery industry. The Uni-Farmer is one more reason why thousands of American Farmer-Businessmen look first to MM for machines to make farming pay a better profit. It is on this firm rock of acceptance and trust that MM builds for American Agriculture.

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NEW POWER . . . NEW HANDLING EASE!

20% MORE POWER! Powerful new high-compression V-4 engines give you a big boost in work capacity.

NEW POWER STEERING! Sleep with hydraulic power as standard equipment.

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NEW UNI-V DRIVE! The strength and simplicity of flat belts . . . the speed and grip of V-belts.

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In the 1954 International Mechanical Corn Picking Contest MM Uni-Huskars placed 1st, 2nd, and 3rd. Now, in the 1955 contest, the Uni-Husker proved its Championship by taking 1st Prize in Snow U.S., competition and placing 1st, 2nd, and 3rd in All-Canada Self-Propelled Corn Picking Contest.
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