IN FARMING -

YIELD X QUALITY = GREATER INCOME

BECAUSE OF THIS RELATIONSHIP, A PROVEN FORMULA FOR OBTAINING BETTER INCOME FROM FLUE CURED TOBACCO IS \( \text{KNO}_3 \) - CALLED NITRATE OF POTASH.

THE FACTORS THAT RESEARCH ON FLUE CURED TOBACCO HAS PROVEN TO BE ESSENTIAL FOR GREATER PER ACRE VALUE ARE -

MORE NITROGEN IN NITRATE FORM.
HIGH POTASH CONTENT.
LOW CHLORINE CONTENT.
CONTROLLED SULFUR CONTENT.

THESE ARE THE SAME QUALITIES THAT NITRATE OF POTASH MAKES POSSIBLE IN TOBACCO FERTILIZERS.

SOUTHWEST POTASH CORPORATION
The Agrarian is published twice yearly by the undergraduate agriculture students of Clemson University, and coordinated by The Agrarian Staff. Opinions expressed in the magazine reflect solely the opinion of the author and do not necessarily reflect the policy of the College of Agriculture and Biological Sciences or Clemson University.

THE COVER

The cover shows one of the many forms of wild life found in South Carolina — the cottontail rabbit. Very few states offer the variety of game species which South Carolina has. From the white-tail deer of the coastal plains to the quail of the piedmont, the hunter can choose the type of hunting he enjoys most. See page 11 for a fine article on South Carolina hunting. The cover was drawn by staff artist Bob Upson.

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All correspondence should be addressed to The Agrarian, Clemson University, Clemson, S. C. Subscription free on request.
UNDERGROUND WAR

C. T. Mathews, '63, Biological Sciences

Right under your feet day and night there is a war going on. Today, in a world of conflict, you want to know at once: Where is this battlefield? Who are the participants? What are the issues involved? Who are the “good guys” and the “bad guys”?

Almost since life began, this war has been fought, and yet most of us are not even aware of it. This is a war of survival—a war for “food.” It is unique in that we can’t see most of the individual participants without the aid of a microscope even though we may see the results.

These microscopic armies, called microbes, exist in almost every square inch of the earth’s surface and in the air surrounding it. We are concerned here only with those microbes that live in the soil. These microbes, like other living things, must continuously have “food” or nutrients at their disposal in order to grow and reproduce. But obtaining these nutrients is not always easy, since there are so many different species competing for a relatively limited supply of nutrients. For instance, an average number of microbes in the surface layer of a typical mineral soil is about 12 x 10.6 or 12 million per gram of soil. This is broken down in Table 1.

Table 1. Organisms per gram of soil

<table>
<thead>
<tr>
<th>Organism</th>
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<tbody>
<tr>
<td>Bacteria</td>
<td>9,750,000</td>
</tr>
<tr>
<td>Actinomycetes</td>
<td>2,080,000</td>
</tr>
<tr>
<td>Fungi</td>
<td>119,000</td>
</tr>
<tr>
<td>Algae</td>
<td>25,000</td>
</tr>
</tbody>
</table>

Just looking at these numbers it is hard to conceive that all of these microbes could survive and reproduce without interfering with each other.

Because of this competition for a limited nutrient supply, some microbes have become especially adapted to survival and the obtaining of food in this competitive society. Sometimes this adaptation is due to an antibiotic which the microbe secretes into its environment. This antibiotic inhibits the growth of other microorganisms and thus reduces competition in laboratory cultures, and presumably does the same thing in the soil.

Actinomycetes are well-known producers of antibiotics, such as streptomycin and aureomycin, which are used as human medicines. There are many species of bacteria, fungi, and actinomycetes in the soil that synthesize antibiotics which inhibit the growth of their microbial neighbors. Such an example of antibiotic production is shown in Fig. 1. In the plate at the left the growth of the fungus *Fomes annosus* (top) has been stopped by an antibiotic secreted by the dark-colored fungus *Penicillium*. *Fomes annosus* causes a root disease of pines and other coniferous trees in many parts of the world. It appears to be very sensitive to antibiotics, and it is sometimes impossible to get a pure culture of the fungus from soil.

Work with *Fomes annosus* has been going on for some time at Clemson University. Figure 1 was taken during a study conducted in 1963 by Thomas Adams, Forestry senior, and Wesley Witcher and Carl Lane of the Experiment Station staff, to determine if there was a relationship among numbers of fungi, bacteria, actinomycetes, and/or nematodes and pines diseased by *F. annosus*.

Sometimes one microbe may actually prey on another microbe. In this case the predator actually destroys or kills its victim. This is illustrated in the dish at right in Fig. 1 where the fungus *Trichoderma*, which was started at the lower edge of the dish, has destroyed the colony of *Fomes* which was started at the top of the dish. This is not the case where antibiotics are concerned. The antibiotics, mostly, inhibit growth and/or reproduction of the competing species.

As another example of the microbe which destroys its victim, we will consider the attack of the fungus *Dactylella* on nematodes. This fungus produces doughnut-shaped spores in abundance in the soil. When a nematode squirms into the loop of the spore, specialized appendages digest the nematode slowly (Fig. 2). Last spring Miss Harriet Lipscomb, a graduate student in Plant Pathology, studied this type of fungus-nematode relationship.

The attack of special viruses, called bacteriophage, on bacteria is another example of antagon-

(Continued on Page 15)
The American public is equipped with a giant rubber stamp carrying the inscription “bad” which it immediately grasps when words such as “fall out,” “water pollution,” or “pesticide residue” are mentioned. People tend to group all new and little understood problems into one category which they regard with awe, mysticism, and skepticism. This is largely due to a basic distrust of the unknown, and the overemphasis, by the press, of a few accidents involving new chemical products. Most people will not try to understand and learn about a new problem. Many are perfectly satisfied to be scientifically illiterate.

The problem that this article pursues is soil pesticide residues. Rachel Carson approached the problem from the standpoint that the modern chemical farmers are upsetting the “balance in nature” and fixing a path for destruction. In the words of Mark Twain “a lie can go around the world while the truth is putting on her shoes.” The other extreme approach is to say that there is nothing to be concerned about at all. The actual truth is located somewhere between these two extremes. All adverse publicity concerning pesticides has not been detrimental. The public becomes emotional about health hazards and this has been reflected in legislative appropriations. It has resulted in increased funds for study of the problems concerning pesticides and has pushed upward the rate of research in this field.

Pesticides have come into wide usage during the past twenty-five years. Due to its recent origin, no distinct science concerning pesticides has yet developed. A worker in the area of pesticide residues has to be trained in organic chemistry, soil chemistry, microbiology, plant physiology, and a number of other fields. Pesticide residues present a complex problem.

The soil is a dynamic system composed of chemical and biological fractions; each soil having its own unique set of characteristics. Modern pesticides are mainly complex and organic molecules with various functional groups attached to give specific effects. The way that a soil will react to a specific pesticide is dependent on the conditions of that soil. The reaction is controlled by soil pH, salts present, moisture content, organic matter content, the amounts and types of clays present, and many other variables. An ideal pesticide (insecticide, herbicide, fungicide, or nematocide) would do its job and then disappear; however, almost anything that completes its job brings about some side effects. A pesticide, when introduced into a soil can be leached out by rain, be absorbed on soil surfaces, be decomposed by sunlight, persist as a problem, or possibly be detoxified by soil micro-organisms. Much of the research presently being carried on is oriented in the direction of trying to find out the final fate of these compounds. The main desire is, in the future, to have enough facts compiled concerning soils and pesticides to predict the behavior and fate of a given pesticide when it is introduced into a particular environment.

One of the most common public misconceptions is that the farmers are contaminating our foodstuffs with chemicals, and that there seems to be no control over what they drench our “apples and oranges” with under the present government regulations concerning pesticides. The chemical producer has to prove that there are no harmful side effects produced from his chemical. In the past the manufacturer did not have to prove that the chemical brought about the control that he claimed. Before a new pesticide reaches the public market, several hundred thousand dollars have been spent on research with the chemical. Union Carbide spent $1,500,000.00 in research, used 1,900 test animals, and had 43,000 pages of laboratory reports invested in the insecticide Sevin (N-methyl-naphthylene) before it was cleared for general usage. Most of the over-emphasized accidents with farm chemicals have come about through their mis-use. There have been very few reports of toxic effects from properly directed usages. When a “layman” sees a farmer spraying his soil and crops with several hundred gallons of insecticides, he does not realize that the amount of active ingredient in the spray solution is used at the rate of only a few pounds per acre. The average weight of the cultivated

(Continued on Page 19)
SUCCESS IS HIS STORY
Bill Plaxco, Ag Education, 1965

On the faculty of York High School in York, S. C., there is a man who has dedicated his life's work to giving vocational agriculture the position of importance it deserves.

Mr. Floyd D. Johnson graduated from Clemson University in June of 1939 with a B.S. degree in Agricultural Education.

While at Clemson Mr. Johnson was very active in student church work and was elected President of the Baptist Student Union his senior year. He was also very active in Alpha Tau Alpha, the national honorary, professional fraternity of Agricultural Education. Mr. Johnson was also actively interested in the collegiate chapter of the F.F.A. at Clemson.

Immediately upon graduation Mr. Johnson went to York and took over the Vo. Ag. department there. Once at York he felt his first obligation was to build a strong high school program and work from there. He began building this strong program by recruiting high school boys that were actively interested in vocational agriculture. He wanted boys who were interested in receiving training in production agriculture. He looked for boys that were willing to learn by doing; boys who could put this training into practice.

Mr. Johnson became interested in the F.F.A. and what it could offer his program. Once he had the material he needed, he began his program, largely through the F.F.A. Since he went to York twenty-six years ago, Mr. Johnson has kept his classroom instruction closely integrated with his F.F.A. chapter program. Today he has built one of the most active and productive chapters in the state. Wherever contests are held throughout the state, York has always been well represented, whether it be in livestock judging, dairy judging, public speaking, parliamentary procedure, or various other contests.

The York F.F.A. Chapter always sends delegates to the National F.F.A. Convention. There they participate and learn and bring their experiences back home to help build a better chapter.

During the past twenty-six years, more than fifty boys from York have earned the State Farmer degree under the leadership and direction of Mr. Johnson. One of these boys has gone on to win the Star State Farmer degree and three of his students have earned the most coveted American Farmer degree.

Using this strong high school program as a nucleus, Mr. Johnson began to broaden his program to include part-time farmers (now called young farmers) and adult farmers. He made available to the groups training that would help them to realize more returns from their farms. He helped young farmers to get started in a sound production program, and older, more experienced farmers, to employ production practices that would increase their farm's earning power. Today he has twenty-six members actively engaged in his young farmer program and fifty-one members in his adult farmer program.

Mr. Johnson has cooperated with Clemson University in its off-campus teaching program since the program was originated. In all he has helped to train some twenty-three young educators to take their place in departments throughout the state as well as places in other agricultural related jobs. Many students have chosen Vo. Ag. as their profession as a result of the influence they received from Mr. Johnson during their teacher-training period at York.

In his work at York, Mr. Johnson saw where membership in certain organizations could benefit him in his program. He joined the South Carolina Vo. Ag. Teachers Association where he soon became District Vice-President. From there he went on to be elected Vice-President of the S. C. Vo. Ag. Teachers Association in 1953 and served in that capacity during 1953 and 1954. As a result of his work in this office, he was elected President of the organization in 1954 and served that office well during 1954 and 1955. In 1956 he was elected alternate Vice-President of the Southern Region National Vo. Ag. Teachers Association.

(Continued on Page 14)
A NEW DEVELOPMENT
Al Keller
Graduate Research Assistant in Horticulture

In today's fast moving world the trend is toward more prepared foods for home consumption. Working toward this end, the Department of Horticulture at Clemson has been working for the past three years on a method for processing fresh prepared peaches.

The project was a grant-in-aid sponsored by Troy H. Cribb and Sons of Spartanburg, South Carolina. During this past summer I had the opportunity of working on this project and sampling the end-product.

During the past three years about 2000 bushels of peaches have been processed in the Horticultural Products Research Laboratory. The peaches come to the laboratory while slightly firm and are held until soft ripe by storing in a warm room.

The actual process involves conveying the peach through a boiling lye (NaOH) bath, thorough washing, and cutting the peaches in quarters with an experimental pitter. This machine is a high speed pitter developed by L. O. Van Blaricom of the Horticultural staff at Clemson. Next the peaches run along a belt from which they are trimmed of defects and placed in jars. The peaches are then covered with a light syrup of sugar and water, plus small amounts of sodium bisulfite, sodium benzoate, citric acid, and ascorbic acid. These chemicals are added to inhibit the growth of spoilage organisms, prevent browning and discoloration, and retard enzymatic activity.

The jars are then sealed and conveyed through a hydro-cooler where ice cold water is pumped over them. They enter the hydro-cooler at a temperature of about 90°F. and after 15 minutes are cooled to 50°F. The jars are then placed

Who was the smartest inventor? Edison. He invented the phonograph so people would stay up at night and use his electric lights.

"What's the matter?" asked the girl.
"We're out of gas," replied the boy. "We may be here quite a while."
The girl smiled shyly as she took a bottle from her bag and said softly, "We can make good use of this, then."
"Great," said the boy with a pleased grin. "Is it gin or whiskey?"
"Neither," she smiled. "It's Ethyl. I've been out with you Clemson men before."

A hangover isn't serious until you can't stand the roar of a Bromo Seltzer.

And there was the judge who told the condemned man, "You'll just die when you hear this one!"

Driver of car: "I take the next turn, don't I?"
Muffled voice from back seat: "Like hell you do."

(Continued on Page 10)
FORESTRY vs LUMBERING
John B. Hatcher, Jr., Forestry, 1965

Forestry as defined by the Society of American Foresters is the scientific management of forest land for the continuous production of goods and services. On the other hand, lumbering may be defined as the utilization of trees with little or no regard for their replacement. On any piece of property, no matter how large or how small, the decisions for the methods of operation are entirely up to the owner. By electing to practice good forestry the landowner can increase his income on an average annual basis, and at the same time raise the value of his property.

In South Carolina there are approximately 12 million acres under trees, and nearly half of this is in farm woodlands. As one can readily see, six million acres even though divided into small parcels could produce a very sizable amount of timber. On the average farm in South Carolina the woodlot consists of 43 acres.

It has been established that on large forest holdings the intensity of forestry practiced is much higher than that on small holdings. This can be seen easily when one considers the economics of the situation. On most small farms timber production is not the major source of income, therefore forestry necessarily takes a back seat to farming. In many cases the small landowner holds down a regular job in addition to managing a farm. However, with a little effort the farm woodlot could be turned into a more profitable venture.

The major reason for the lack of forestry practiced on small holdings is the deficiency of capital. If a farmer has a bad season or for some other equally good reason he runs short of cash for operating the farm, he usually resorts to cutting some of his timber. It really makes no difference to him what stage of growth his trees are in. He needs money, and he can get it from his woodlot. Once the small landowner finds himself in this predicament he is in no position to consider market fluctuations; he has to sell his timber.

In South Carolina the Commission of Forestry employs many foresters who do little else besides help and advise landowners. This costs the landowner nothing, but by using sound forestry practice as outlined by a competent forester, one may increase his gains substantially. It should never be thought that these changes can occur overnight or even in two or three years. However, over a period of probably ten to thirty years a man who uses sound forestry principles will not only be ahead from the financial standpoint, he will also have new growing stock which is ready to yield financial benefits.

The best way to set up a revolving annual cut is to make an effort to place the woodlot on some type of sustained yield. For a farmer this would mean the continuous production of timber with the annual income more or less equal. It would also mean that there would be some sort of balance between growth and harvest. It is implied by this that the owner of the woodlot would have to regenerate the area harvested each year. Over the long run there would be a small area ready to cut every year. Since the average farm woodlot in South Carolina consists of 43 acres, it could very easily mean that the farmer would cut only one acre per year. To most small landowners who have no background in forestry, this would probably seem like an insignificant area to cut each year. However, most people feel that a steady annual income is much better than large payments at irregular intervals.

Nearly everyone, at some point in life, looks for an investment that will provide, with relatively low risk, a means of security for old age, a provision for the education of his children, or a nice inheritance for his heirs. An investment in forestry can provide all of these, and it will provide all—not just one. Lumbering will not do this! A small landowner has this option, and it seems senseless to discard all of the advantages that forestry can provide over lumbering when they could be realized so easily.
Milk selling for 39c per half gallon in South Carolina! How can it be sold at this low price? Well, it is being done although economically it is not a sound practice. There is a price war on milk similar to gas price wars that have occurred in other areas.

Let's get a few facts together and present the case of the dairymen in this dilemma of declining prices.

The dairymen, or producer as he is better known, is engaged in a highly regulated industry which imposes very rigid sanitary restrictions on the production and processing of milk. Milk is a highly perishable product. It is not only an excellent food for man but also for almost all forms of life including bacteria. Because of the nature of the product extra sanitary precautions must be practiced. These sanitary regulations are enforced by the Public Health Department in order to safeguard the health of the consumer. These regulations include the testing of cows to determine if they are free of diseases, the types and kinds of milking barns, procedures and equipment. In essence, these are requirements imposed upon the producer by the consumer. These requirements cost money.

In order to assist the State Health Department in regulating the dairy industry, South Carolina enacted laws in 1953 to provide for the orderly disposition of Grade A milk produced in the state and to require all milk entering the state from other areas to be of the same quality as milk produced locally. The Dairy Commission was created as the agency under this law to supervise and regulate the entire fluid milk industry of the state.

Now back to the price war. Several years ago a large independent supermarket in Greenville began selling milk at 37c per half gallon. This milk was sold as a “loss-leader” to entice more customers into the store to increase sales of other articles. If this milk was affecting milk sales in other areas of Greenville, the Dairy Commission was asked to study this practice. The Dairy Commission held a public hearing as required by law before any action could be taken and asked interested parties to participate. As a result of the hearing the Dairy Commission ruled on November 5, 1959 that the action was illegal and enjoined the supermarket to raise its retail price for milk. The supermarket protested this ruling and obtained a temporary injunction restraining the powers of the Dairy Commission. The case was taken to the South Carolina Supreme Court in 1960 which ruled by a 3 to 2 decision that it was unconstitutional to regulate retail milk prices.

As a result of this ruling by the Supreme Court, a new law for regulating the dairy industry was enacted in 1961. The basic difference between the two laws was that in the first the Commission had the authority to set the price at all three levels—producer, processor-distributor and retailer. The second law specifically said that the Commission had authority to prevent sales below cost but only when the dairy producer was in danger of economic destruction. Since the producer was being paid full price for his milk, the supermarket continued to sell milk as a loss-leader.

The real milk price war started on April 4, 1963 and was triggered by the purchase of Paradise Ice Cream Company by Piggly Wiggly Wholesale, Incorporated of Charleston. It was Piggly Wiggly's intention to process milk and offer it for sale in one half gallon containers for 39c in their stores. They contended that this figure was above their cost and that milk would be sold at this price and not as a loss-leader. They also contended that milk sold to the consumer at this price would not lower the price to the producer supplying milk to Paradise.

The usual wholesale prices for a one-half gallon of milk was 48-49c. The retail price was 53c. Because milk comprises a large part of the food dollar for young growing families, especially, and the young growing family spends more of its income on food, any money saved on milk purchases by the consumer can be spent for other items which are more profitable for the supermarket. This is why milk makes such a good loss-leader to get more customers into a store.

Paradise milk being sold in more stores covering a relatively large area of South Carolina, as compared to the independent store in Greenville, caused milk processors in these areas great concern. Rather than lose their sales in supermarkets the processors and distributors met Piggly Wiggly's price by reducing the wholesale milk price to their outlets. A loss of sales by processors would reduce the need for milk from the producer. Since the processor could not take the full ten cent loss per half gallon, producer prices were lowered to permit the loss to be shared by plant and producer. This reduction to the dairy farmer ranged from 3c to $1.13 per one hundred pounds of milk (milk is purchased on one hun-

(Continued on Page 13)
The Milk-Machine Alliance

A vast new trend has come upon the American retailing scene. The vending machine has become a dynamic force in the field of marketing. Everything from soft drinks to stockings and toothpaste can be purchased from a vending machine. Food is the largest single item being sold by vending machines today. Together the sale of soft drinks and coffee totaled more than $700 million dollars in 1962. Most industries now have entire batteries of food vending machines which dispense food to the employees. Some schools are now experimenting with this idea. Of course, almost every place a group gathers, there is a vending machine selling some item of food or cigarettes.

The milk-vending industry has been growing by leaps and bounds along with the rest of the vending industry. A few statistics show the scope of milk vending operations. There were 47,300 indoor milk venders in use on January 1, 1960, according to the census of industry for that year. Each machine sold an average of 250 units of milk per week. Most of these sales can be counted as additional sales. That is, many people drink milk from vending machines as a refresher or pick-up drink. Clearly today, when both the dairyman and processor are in a profit squeeze, all ways of expanding the market should be welcomed and explored.

Once a milk-vending machine operation has been decided upon, the plan of operation should be studied very carefully, or else it could prove a most painful and expensive venture. The requirements for success are many. Of course, the first factor to consider is whether to sell small units of milk, one-half pints, one-third quarts and pints, or large units of quarts and one-half gallons. Either of the two units of size would require different locations as they would be appealing to different segments of the market. For instance, the number of potential locations for small unit vending machines is much greater than machines dispensing larger units. Schools, military posts, swimming pools, parks, factories and numerous other places are potential locations. For instance, one might place a machine in a school from September to May, then move it to a swimming pool for the summer months. With this type of marketing, however, competition is great from coffee and soft drinks. This is especially true in industrial plants and recreation areas. In the installation of a vending machine, an administrator or manager should stress the time saved, convenience to students or employees, and the cleanliness of the operation.

Treating the vending operation as a step child is a mistake that many milk distributors make in regard to vending operations. Successful vending requires knowledge, a substantial investment, systematic and careful management, and trained personnel. Know-how is the ability to oversee the general vending operation. A general knowledge of marketing and maintenance is required.

The indoor machines cost between $800 and $1,000 while the larger outdoor types cost between $3,000 and $4,000. Systematic careful management is required, if the operation is to be profitable. Population changes, buying habits and patterns must be studied so that the machine can have maximum volume, while minimizing expenses. Perhaps the biggest requirement for profitable operation is well trained personnel. A good route man should be able to notice selling patterns and report them to the management. The machine should be kept clean and attractive. Routemen should be able to make minor adjustments and quick loading in the machines. If a route man can save a service call, then the operation will be dollars ahead.

DAIRY CLUB NEWS

Andy Moss

The Clemson Chapter of the American Dairy Science Association began its activities for the new year with a supper at the home of Dr. and Mrs. J. T. Lazar. Dr. Lazar is the club's faculty advisor. This get-together served as a welcoming for new members and as an organizational meeting for the club.

The club's first regular meeting was held on the evening of October the thirteenth in the Student Center. This meeting was highlighted by reports given by the members of the Dairy Cattle Judging Team and the Dairy Products Judging Team. These teams judged in both the regional and national contests.

The dairy cattle judging team, composed of Shuler Houck, Spann Brabhman, and Jimmy Williams competed first at Memphis, Tennessee, in the Southern Regional contest and then moved on to Waterloo, Iowa, for the national contest at the National Cattle Congress. Although the Clemson team failed to place among the top teams, they gained much valuable experience and saw many interesting dairy operations and other places of interest during the course of the trip.

The dairy products team competed in the Southern Regional Contest at Louisville, Kentucky and then at the National Contest in Chicago. Out of eight teams competing at Louisville, the Clemson team, made up of Terry Blakely, Nicky Baskin, and Jimmy McMillan, placed third in cottage cheese and fifth in ice cream. The team also placed fifth in all products. In the individual scoring, Nicky Baskin finished fourth in cottage cheese, and sixth in buttermilk. Terry Blakely was fifth in cottage cheese and sixth in ice cream. At the national contest in Chicago the team placed ninth in ice cream out of twenty teams competing.

Jimmy Williams, President of the Clemson Chapter of ADSA, and also President of the National Student Branch, spent several days during the contest. (Continued on Page 17)
NEW LIVING QUARTERS FOR CHICKENS?

Nelson McLoughlin, Poultry Science Dept. (1965)

The type of poultry housing for broilers and layers in the Southeast may be in for a drastic change. The predominant house design is now mainly pole construction with merely a roof. This seems to be giving way to the completely controlled environment house.

What has caused this change to come about? In actuality, the completely controlled environment house has been in use for many years, particularly in the northern and colder regions of the country. The much colder areas of the country have been almost compelled to construct a poultry house in which the environment is completely controlled due to the severe extremes in weather. Competition between the northern and southern regions of the country has been very keen in production of eggs and poultry meat. The northern regions have the so-called disadvantage of higher housing cost as compared to the low cost housing of the South. But has this really been a disadvantage to the North? Records of production in these controlled environment houses of the North point towards economical benefits of the producer in the forms of better feed conversion, better production, a better profit, and more birds to the house. Will these better production factors actually pay the producer to construct the outlandishly expensive controlled environment house in the South? Will the environment of the house combine with the genetically proven quality bird and pay the producer the extra cost of improved housing? Many authorities say "yes" and many think otherwise.

Since this is such a vital question among poultrymen in the Southeast, Clemson University has responded to the cries of the producer and is planning research in this field in the very near future. State appropriated funds of $100,000 will be used in the research for construction of various types of housing. Data will be collected as to which construction type is best suited to the South Carolina producer. Furniture arrangement within the houses, density of birds, amounts of insulation needed, and all general economic aspects will be studied.

Among the houses to be constructed will be three very distinct types. The first is a windowless, forced ventilated house having both walls and ceiling heavily insulated. A second type is the pole type house having merely a roof, natural ventilation, no insulation, and polyethylene used as a side wall in winter. The third type will be a compromise between the other two. It will have an insulated ceiling, plastic cloth for sides with partial walls. Each of these houses will accommodate around 3300 layers.

Research information in this field will prove very interesting and important to the poultry industry of the South. No longer is poultry housing a mere shelter and confinement area for birds, but is in fact a technical piece of equipment which the skilled and efficient producer must use as a tool to better production.

ASAE NEWS

By Charles D. Ables, Ag E, '65

The South Carolina Student Branch of the American Society of Agricultural Engineers held its first regular meeting of the 1964-65 school year on September 22, in the Ag Engineering Auditorium. The main purpose of this meeting was for organization and committee appointments for the coming year. Several amendments to the constitution were presented which included changing the wording from Clemson Agricultural College to Clemson University.

The second regular meeting was held on October 13, in the Ag Engineering Building. The new members were invited to this meeting and were instructed on the initiation procedure. The main part of the program consisted of slides shown by Dr. Lambert of his, Mr. Wilson's, and Gene Rochester's trip to the National Summer Meeting of ASAE, held this past summer at Colorado State University. At this meeting our branch president, Gene Rochester, was elected Second Vice-President of the National Council of ASAE.

Investor-owned SCEGCO maintains an Agricultural Development Department composed of college-trained Agricultural Engineers. This is one of its "friendly" services for better living, and, in this case, better farming, too.
SUCCESS AND SERVICE
A Profile of Dr. William H. Wiley
Kenneth K. McDaniel, Feature Staff

Dr. W. H. Wiley is not a native South Carolinian. He was born February 19, 1913, in Willsburg, Texas, and graduated from Port Arthur High School, Port Arthur, Texas in 1931. He is a graduate of John Tarleton Agricultural College and the A&M College of Texas. He received his B.S. degree, 1936, majoring in Poultry Husbandry. Dr. Wiley earned 100% of his college expenses by working on the College Poultry Farm of each institution. He entered the Texas A&M graduate school in 1936 and working as a graduate assistant, received his M.S. degree in 1937. After a year of instructing at the University of Arkansas, he re-entered Texas A&M to pursue more graduate work. In 1949 Dr. Wiley received his Doctor of Philosophy degree in Genetics and Zoology.

Dr. Wiley served in the United States Army from 1942 until 1945. He now holds the rank of Colonel in the Army Reserve.

In 1947, he was elected Head of the Poultry Department, at Rhode Island State College. Later in 1959 he assumed the position of Dean of the College of Agriculture, University of Rhode Island. He held this position until July 1, 1962, when he became Dean of the College of Agriculture and Biological Sciences at Clemson University.

Dean Wiley is married to the former Miss Anne Earle and is the father of a 16 year old son, Douglas. He is a member of the American Genetics Association, Poultry Science Association, American Association of University Professors, Alpha Zeta, Phi Kappa Phi, Sigma Xi, Phi Sigma, and Gamma Sigma Delta honorary and professional fraternities. He is also a member of the Lions Club, Tavern Hall Club, Grange, Kingston Improvement Association, and Fellowship Club of Clemson.

The accomplishments Dr. Wiley has achieved in his career are as outstanding as his contribution to the field of Agriculture. It is with much pride that The Agrarian presents the Success and Service of Dr. William Henry Wiley, Dean of the College of Agriculture and Biological Sciences at Clemson University.

Alpha Tau Alpha News

Alpha Tau Alpha, the National Honorary, Professional Fraternity for Agricultural Education students, held its monthly meeting on October 20, 1964. The purpose of this meeting was to consider candidates for admission to the fraternity. The following students were extended an invitation due to their scholastic achievement, character, and leadership abilities: Gordon Chipukites, Wayne Coward, Furman Lollis, Jon Poteat, and Quincy Smith.

New officers presiding this year are: President, Bill Whitfield; Vice-President, Bill Plaxco; Secretary-Treasurer, Al Berry; Sergeant at Arms, Hugh Caldwell.

On October 13-15, 1964, The National Alpha Tau Alpha Conclave was held in Kansas City, Missouri. Hugh Caldwell represented the Kappa Chapter of Clemson University at this conclave.

A NEW

(Continued from Page 5)

mine the maximum safe storage time. They have been consumed through a period of 14 weeks after harvest with retention of relatively good fresh color and flavor. The peaches have been marketed in New York City; Jacksonville, Florida; and Spartanburg, South Carolina. They have also been served over a seven weeks period in 1963 in the Clemson University dining hall. The Department of Agricultural Economics is conducting studies on the marketing of the fresh prepared peaches. Preliminary reports show very good acceptance of the product by the consumer.

With this new product the consumer will be able to have fresh peaches in seconds without the inconvenience of peeling, pitting or cutting.
South Carolina Hunting Prospects

F. Spann Brabham, Dy. Sc., 1965

Prospects are excellent for another banner hunting season in South Carolina in the fall and winter of 1964-65. Open seasons will be declared on two species of big game and eight species of small game.

The entire state has received an excessive amount of rainfall this year, and much of this has come during the breeding season of our game animals and birds. In spite of this, indications are that we have a plush new crop. Many of South Carolina’s game wardens were surprised to see this abundance of offspring, especially in the low country where water pushed most of the game to higher ground.

The two species of big game being hunted in the state this year are whitetail deer and black bear. The hunting prospect for the whitetails ranges from excellent to good, depending mostly on location. The Coastal and southeast section is considered best, while the Piedmont Management Area is considered good. It is expected that a two week season will be set in each of the management areas. The deer season in most of the state opens on August 15 and ends on January 1. This year, some form of doe shooting is expected in many of the over-populated areas. The extreme northeastern section of the state, consisting of Greenville, Pickens, and Oconee counties, expects fair black bear hunting between November 15 and December 1.

The entire Southeast has enjoyed excellent quail hunting for the past several years. Some states are forecasting a slight decline in population for the fall of 1964, but South Carolina is predicting excellent to good prospects. The Coastal area is best, but central and western areas are expected to have good quail hunting. One of the greatest complaints of the quail hunters is that there isn’t enough opportunity for public shooting in the state. Landowners usually have their property posted, guided hunts are too expensive, and there is very little state-owned quail territory. Therefore, it is necessary to either own land, rent hunting rights, or have a good friend that has access to hunting territory.

Gray squirrels and fox squirrels have shown some decline in most areas this year, but prospects are good for the mountains and coastal river swamps. Squirrel season opened October 15 and ends March 1.

Ruffed grouse is a relatively new game bird for South Carolinians and a great deal of effort is being extended by our game department to establish a sizeable population of these birds. There have been plans to inaugurate a season on grouse in Greenville, Pickens, and Oconee counties, but these plans are incomplete and it may be next season before any grouse shooting occurs.

Cottontail rabbits are considered a pest in the coastal counties due to the extremely heavy populations. Rabbit hunting for this year will range from excellent to good, and considerable hunting is needed to reduce populations. Beagle hunters should have another exciting season.

Wild turkey populations have been constantly on the rise, especially in the Coastal forests and Piedmont Management Area. There is good public opportunity for turkey shooting, since most of the turkeys are found in management areas and extremely large, unposted forests. Last year, there was a split season on turkeys: from November 25 to January 1, and from March 1 to April 1. This year, there may be a single season in some counties, starting November 25 and ending March 1.

The season opened on September 1 for raccoons and opossums, and ends March 1. “Coon” hunting will be excellent to good in the Coastal areas and good to fair in the Piedmont. Opossums are abundant throughout the state.

No mention was made of the seasons on our migratory game birds since they vary from year to year. But, populations in the nesting areas indicate that there will be good seasons on both doves and duck. Duck hunting will be best on the extreme coast, but will be good to fair throughout the state.

Doves, being hunted in a split season fashion, are plentiful this year, as was indicated by estimates of kills during the first season which ended in October.

According to The Olin Mathieson Conservation Department, game populations, in general, are increasing in areas of game management. That we need more game management by individuals cannot be too highly stressed. Proper management of game not only provides better hunting, but also preserves one of our greatest outdoor sports.
AYF LEADERSHIP CAMP

This past summer I attended the American Youth Foundation's leadership training camp on Danforth Scholarship. The camp provides training to selected young people. The camp lasts for two weeks. Each day of this two weeks is planned to the minute so that each person will get the most out of his stay. There were several courses taught. The American Youth Foundation believes that these courses can provide the basis for good leadership in America. These courses included Leadership Training, The Life and Teachings of Jesus, America—Its Ideals and Traditions, and Balanced Fourfold Development. This last topic emphasized the balanced fourfold development of the religious, mental, physical, and social aspects of one's character. In short, it emphasized the development of the whole man. The camp's motto, "My Own Self, at My Very Best, All the Time" is stressed in all of its programs.

The camp provided opportunities for the leadership qualities of the individual to develop and to be used. Various games gave the person a chance to function both as an individual and as a member of a team. There were also opportunities to lead in social functions and to lead one's particular class by running for class offices.

The camp offers one a chance to be with boys from all over the United States, Canada, and several other countries. This past year there were boys from Hawaii, Ghana, Turkey, and Malaya. Many lasting friendships have come out of those two weeks at Camp Minawanca.

The camp is located on the beautiful shores of Lake Michigan. The name of the camp, Minawanca, means many waters. As the name implies, there are many waters at Camp Minawanca. The Camp is bounded to the west by Lake Michigan, to the north by two small creeks, and to the east by a large lake called Stoney Lake. The Camp is located in the small resort town of Stoney Lake, Michigan. Stoney Lake is about 40 miles north of Muskegon.

(Continued on Page 17)

THIS IS THE WAY TO GROW!

That cloud of dust at the upper right represents the Rolling Cultivator. You can't see it, but you can see the results in these rows - slick, clean, beautiful to look at. As this Minnesota farmer put it: "I get a bigger thrill pulling that Rolling Cultivator 8 miles per hour than I would doing 158 on a race track. All you've got to do is look back there to know exactly what I mean."

Watch a demonstration on your farm. You'll see why a top magazine editor called it one of the most remarkable tools he's seen in years.

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Lehman-Lilliston ROLLING CULTIVATOR

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Mulches Soil • Cultivates Crops • Puts Dirt Anywhere
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Write Lilliston at Albany for illustrated brochure.

Manufacturers of Lilliston Rolling Cultivators, Lilliston Peanut Harvesting Equipment and Lilliston Rotary Cutters
Pioneering Products to Serve Mankind
A MILK

(Continued from Page 7)

dred pound lots). This reduction cost producers $7,000 daily and would amount to $2.5 million annually. Processors suffered a similar loss.

If these losses continued many dairymen in South Carolina would be forced out of business; in fact, many of them have. The Dairy Commission, because of the danger of economic destruction resulting from chaotic marketing conditions, called a hearing on April 25. Two thirds of the dairy men in South Carolina were in attendance. Evidence obtained by the Dairy Extension Division of Clemson University and others was presented proving that producers were in danger of economic destruction due to the milk price war.

As a result of the hearing the Dairy Commission used its authority on April 29 and regulated the price of milk at all levels. An independent supermarket in Greenville objected to this price fixing. This store had been selling milk for 37c per half gallon strictly as a loss-leader for years. It obtained a court injunction against the Dairy Commission prohibiting the Commission from enforcing its order. Piggly Wiggly stores also obtained injunctions permitting them to sell milk at 39c per half gallon. To meet this competition dairy plants themselves obtained injunctions to meet any prices set by competitors. The difference in costs between the regular price and the lower price for milk has been shared equally by the producer and distributor.

Because of the chaotic conditions that resulted in the marketing of milk, Governor Donald Russell, after consulting with leaders of the industry, appealed to the industry on July 6 to raise prices back to normal. Most of the business concerns increased the price of milk back to its normal level due to this appeal.

The Dairy Commission continued to study marketing conditions and made a further auditing of Paradise Ice Cream Company. As a result of its findings, on January 29, 1964 it set a retail price of 51c and a wholesale price of 46.66c. These prices were contested in court on March 30 by Paradise resulting in Paradise being permitted to sell milk at a retail price of 45c. By the latter part of April many stores in Greenville were selling milk at $99c per gallon. Dairy plants during this time were absorbing all the loss. However, on June 25 the producer price of milk dropped in eight counties and this was followed later by most other counties.

Chaotic milk marketing conditions existed in the state. The Dairy Commission, in order to erase the injunctions and to determine its authority, asked the Supreme Court for a ruling on the constitutionality of the state’s dairy laws. The Court ruled in a 3 to 2 decision that it was unconstitutional for the Dairy Commission to set milk prices at the retail level. As a result of this ruling the milk price war continues.

The milk price war has caused a reduction in the number of producers of Grade A milk in South Carolina. During the year April 1, 1963 to April 1, 1964, 72 producers have discontinued their dairy operations. This makes a total of 86 producers during a 16 month period. In the past the dairy industry has been one of the more stable industries in the state. The production and sale of milk by South Carolina producers and processors fed many dollars into the local economy. However, if the South Carolina dairyman cannot be paid a fair return on his investment, he will be unable to remain in business. These dollars will flow out of the state. Also the consumer in South Carolina may not be assured of the same quality of Grade A milk supply in the future.

The Dairy Industry is making detailed studies to determine what steps should be taken to safeguard the public health and to increase marketing efficiencies. Until then the milk price war continues.

Block And Bridle News

Danny Bozard

The Clemson University Block and Bridle Club year is underway, with the initiation of new members highlighting the first part of the Fall Semester. The new members began their initiation procedures on the 8th of October and were formally initiated into the club on the 13th, following a club cook-out at the Food Industries Building.

The Senior Livestock Judging team has also been active, participating in a state-wide judging workout the second week of September and taking part in the Mid-South Livestock Judging Contest in Memphis, Tenn., and the Southeastern Judging Contest in Atlanta, Ga. on the 26th of September and 10th of October, respectively. Members of this team are: Bob Bishop, Billy Bookhart, Danny Bozard, George Dorn, and Jack Ruff. The team is now in preparation for the International Livestock Judging contest which will be held in Chicago, Ill. during Thanksgiving.

4-H CLUB NEWS

The Clemson University 4-H Club was organized in May of 1952 by those students who had previously been active in 4-H Club work and felt a need to establish an organization which would maintain their service and social contacts with 4-H alumni and the active 4-H program.

The objectives of the club are to establish closer friendships among students and college officials, and to train its members for leadership. The functions of the Club are coordination of the recreation during Farm and Home Week, cooperating with the Clemson Agricultural Council in its projects, and taking an active part in campus activities.

Some of the activities of the club include the monthly meetings of general interest to college students. These meetings consist of discussions and talks on various current affairs and the application of modern agricultural techniques in today’s world. The monthly meetings are held the 4th Thursday of each month at 7:30 p.m. in meeting room No. 4.

The club extends a cordial invitation to anyone interested in joining, or visiting our meetings.
SUCCESS IS
(Continued from Page 4)

tion. He served for one year in that capacity and used his ever growing influence well in making the needs of the South felt. In 1957 he was elected Vice President of the National Vo. Ag. Teachers Association and represented the Southern region in that capacity during 1957, 1958, and 1959.

On December 4, 1959, at the national convention meeting in Los Angeles, California, Mr. Johnson was elected President of the National Vo. Ag. Teachers Association. He served well in that position for one year. During his term as president he served on various committees and worked on a number of programs to establish many new concepts and ideas in the field of Vo. Ag. education. As a result of this office he was appointed to the board of directors of the National Vo. Ag. Teachers Association.

In 1960 Mr. Johnson received his Masters degree from Clemson University. During all of this time Mr. Johnson never lost sight of the fact that he was first of all an agriculture teacher. His classroom never suffered from the time spent on his other duties and obligations. The York Chapter continued to grow in importance and prominence. Mr. Johnson's influence began to be felt in higher places.

On October 5, 1961, President Kennedy appointed Mr. Johnson to the Panel of Consultants for Vocational Education. He served on the panel until his work was completed on November 27, 1962. The report that came as a result of this panel's observation and work was the basis and used primarily for recommendation of the Vocational Education Act of 1963. As far as agriculture is concerned this new law broadens the base of the instruction program, permitting more flexibility. It held on to the basic concepts of past years, but made possible training in agricultural occupations that require a knowledge and a skill of agriculture.

The following is a portion of the new law:

"... any amounts allotted (or apportioned) under such titles, Act, or Acts for agriculture may be used for vocational education in any occupation involving knowledge and skills in agriculture subjects, whether or not such occupation involves work of the farm or the farm home, and such education may be provided without directed or supervised practice on a farm..."

Mr. Johnson was instrumental in getting this concept into the new law. In the past, legislative limitations have limited training to farming only as production agriculture. This new law will open the door to training for employment in fields of agriculture in a broader sense. This new law not only provides for training to engage in production agriculture, but will allow classroom training for agriculture occupations other than production agriculture. It will help to develop an appreciation for career opportunities in agriculture as well as develop the ability needed to secure these jobs. It will help develop abilities needed to be a success in agricultural occupations and to filling occupational, social, and civic responsibilities.

In December of 1963, Mr. Johnson was elected Vice-President of the American Vocational Association, representing the Agricultural Division. The Agricultural Division includes some ten thousand members. This office makes him a member of the Board of Directors of the American Vocational Association. This new position will afford him another chance to have his voice heard and his influence felt.

In a short forty-eight years since his birth, Mr. Johnson has become an outstanding member of his profession, not only in South Carolina but throughout the nation. This new law opens the door for a new era of agricultural training. Mr. Johnson stands in this doorway, ready to do his part in keeping agriculture dynamic.

Pre-Vet Club News

The Pre-Veterinary Club is organized for the purpose of bringing Pre-Vet students closer together and to give them a chance to increase their knowledge of veterinary medicine.

The club meets twice a month. An interesting movie is presented at the first meeting of the month and a speaker appears at the second meeting.

The club takes two trips during the year. An interesting trip is made to the Columbia Experiment Station and an interesting and informative trip is taken to the University of Georgia School of Veterinary Medicine.

The membership is open to anyone who is interested in Veterinary Medicine.

OCONEE DAIRIES
P. O. Box 975 Seneca, S. C. Phone 882-2339
The South Carolina Chapter of Alpha Zeta is meeting this year in the Student Center rather than in the Plant and Animal Science Building. It was the feeling of the membership that attendance could be improved by having the meetings nearer the dormitories.

The result of a poll taken of all professors who received teacher evaluation reports indicated that 70% of the professors reporting favored the continuation of this project by Alpha Zeta. As has been done in the past this project will again be carried out during the last few weeks of each semester.

Alpha Zeta is attempting this year to compile a list of all Alpha Zeta alumni of Clemson University. An attempt will be made to contact all alumni and get a reply from each one. If this project is successful we hope to print a booklet containing the names and present addresses and position of all AZ alumni. This booklet will be distributed to all those interested.

Another project Alpha Zeta hopes to coordinate this year is a book sale. Anyone interested

in selling or buying textbooks will be invited to consign them to Alpha Zeta for sale. The prices will be set by the owner of the book and AZ will receive a small commission to pay overhead and operating costs. It is hoped that through this project, students will be able to save several dollars each year on textbooks.

Early in the spring Alpha Zeta is planning to sponsor a picnic for all agricultural freshmen. The purpose of this picnic will be to acquaint the freshmen with Alpha Zeta, its aims and purposes. It is felt that a greater respect for membership in AZ can be obtained.

AN IMPERFECTION

The staff of The AGRARIAN realizes that this magazine is not perfect. We know that you can write better articles and that you can tell funnier jokes. We know that you could have gotten the magazine out sooner and for less expense.

Please send us your suggestions. We will be happy to use them. Or better yet, bring your suggestions to us and work with us on the staff. Our staff is open to any student interested in Agriculture whether he is an Ag major or not.

Please send all comments and suggestions to Jimmy Williams, Box 2853, University Station.

Underground

(Continued from Page 2)

ism. This type of antagonist could be important to the farmer who grows leguminous plants such as alfalfa, which depend at least partially on nitrogen-fixing bacteria to "fix" nitrogen from the atmosphere. It has been suggested that poor yields of alfalfa in fields where alfalfa has been grown continuously for several years may be due to a build up of a bacteriophage population, resulting in the destruction of the plant-Rhizobium symbiotic association.

The "phage" attacks a bacterium cell by attaching its "tail" to the cell and enzymatically perforating the bacterium cell wall. The DNA in the "head" of the phage is then injected through the tail into the cytoplasm of the bacterium. Here the DNA of the phage will catalyze the formation of more phage nucleic acid and phage protein. After a brief period of "incubation" the cell splits and many new phage particles are expelled through this opening.

The typical phage particle is between 50 and 100 mu in cross-section of the polyhedral head. It seems amazing that such a small unit can cause so much trouble.

To all of us microscopic antagonism is an important war. We can only assume that before man was able to control microbial populations through crop rotation, chemical application, etc., there were only three limiting factors to a microbe's growth. They were (1) climatic and environmental factors, (2) nutrient limitations, and (3) antagonism among the microbes.

An understanding of this virtually invisible, underground war will often permit man to provide "military aid" to the "good guys" by providing a more favorable soil environment for their activities. This method of controlling undesir-
VOCATIONAL AGRICULTURE TEACHES
OUT-OF-SCHOOL PEOPLE
Hugh Caldwell, Agricultural Education, 1965

For many years vocational agriculture has taught both in-school and out-of-school students the fundamentals of agriculture. At the present time more emphasis is being placed on offering additional instruction for the adult farmer group. Modern farming—larger operations, more mechanized, greater capital needs—presents many problems which farmers of the past did not have. The vocational agriculture out-of-school program is an attempt to aid farmers with these problems.

This year more people, young farmers and adult farmers, are expected to be enrolled in various courses offered by the local high school agriculture departments. These courses of instruction are planned to meet the needs of the individual. These programs are in addition to the regular adult classes held by the agriculture teachers.

There are two types of programs offered at present. The “Special” out-of-school courses are planned for 20 to 30 hours. Both types of courses will be taught by special teachers who are well qualified in these areas. This kind of instruction will be suitable for both full-time and part-time farmers.

The special courses will include farm welding, tractor maintenance, small gasoline engines, farm electricity, farm plumbing, farm carpentry, and painting. Instruction for these courses is provided mainly through laboratory work where persons can improve their skills in the various areas.

Post high school courses, longer, 200 to 300 hours, and more technical, are largely intended for young farmers and those who have most recently completed high school. These courses will include farm mechanics and ornamental horticulture taught by men specialized in these fields. The purpose of these courses is to up-grade persons already employed in these areas and prepare others for profitable employment.

Several post high school courses were conducted last year in South Carolina with favorable results.

These two types of course work, special and post high school, together with the regular classes for adults, should result in reaching more farm people with needed instruction.

Agricultural Economics Club News

The Agricultural Economics Club started the new school year with a picnic at the Y.M.C.A. cabin on September 29, 1964. This event was sponsored by the Agricultural Economics staff and was enjoyed by both staff and students.

The first Club meeting was held September 22, in Long Hall. New officers for the year were introduced along with the class advisors. The two advisors this year are Dr. H. C. Spurlock and Dr. E. M. Corley. The class advisors are: Marshall Dantzler, President; Beverly Williams, Vice-President; Billy Gulledge, Secretary; Gene Dukes, Treasurer; Doug McCrary, Program Chairman; Jerry Milton, Publicity Chairman; and Gerald Dukes, News Bulletin Editor.

The Agricultural Economics Club has gotten off to a good start, and all members anticipate a successful year for the Club.

COLLEGIATE FFA ACTIVITIES

Over fifty members and guests were present at the Food Industries Building September 29 for the annual FFA cook-out. Dean Wiley, School of Agriculture and Biological Sciences, and Dr. L. H. Davis, Head of the Agricultural Education Department made short and inspiring talks to the group.

The first regular meeting was held October 13. This meeting included routine business, setting up committees and viewing the film—“Wisconsin Agriculture Tour.”

The chapter is planning a leadership training program for FFA officers in the nearby counties this fall.

Worth Keeping in Mind — Duke Power’s Free Agricultural Advisory Services

- Chick brooding  - Crop drying  - Farm shop installations  - Feed processing  - Frost protection of piping  - Heating for farm buildings; farm homes; hot houses; plant beds  - Lighting for poultry houses, farm buildings; green houses  - Outdoor lighting  - Materials handling, including conveyors, augers, elevators  - Pig brooding  - Silo unloaders  - Water systems  - Water warming  - Interior and exterior wiring, including center-pole metering

Details on these and other services, designed to help you live and farm better electrically, are available at any Duke Power office.

DUKE POWER
Serving over 273,000 rural customers
The Editor Speaks

The Ralston Purina Company of St. Louis, Missouri, is doing a wonderful job in public relations with young people. Each year they give awards worth thousands of dollars to young men and women in the Land Grant Colleges of our Nation. They give both graduate and undergraduate scholarships as well as other awards.

Each spring one rising senior at Clemson is selected to be the recipient of one of these awards —The Danforth Award for Agricultural Seniors. A similar recipient is chosen at each of the other Land Grant Universities in the United States as well as in Canada and Puerto Rico. It was my good fortune to be chosen as the recipient of this award for 1964.

I knew very little about the award until I was notified to be in St. Louis, Missouri on the first Sunday in August. This was the beginning of the most wonderful 4 weeks I have ever spent. There were 44 "Danny Boys" in the 1964 group from 44 different states. For the next two weeks in St. Louis we were treated royally. Purina spared no expense in making us feel like real "big shots." We spent some time at the Purina Research Farm at Gray Summit, Missouri. We toured such places as McDonnell Aircraft Plant, Barnes Hospital Complex, Hunter Packing Company, Gardner Advertising Agency and many other interesting facilities.

After the two thrilling weeks in St. Louis our group moved to Stony Lake, Michigan for two weeks at the Youth Leadership Training Camp of the American Youth Foundation. These two weeks were spent in development of the four-fold character of the individual — spiritual, mental, physical and social. It was a most inspiring experience.

Ralston Purina paid all expenses for our four-week trip. These weeks were without question the most enjoyable and beneficial I have ever known. Our schedule was filled to the minute but we always knew that what was to come would be better than what we had already experienced so we were eager to go.

I wish to say thank you to the Ralston Purina Company, to our guide and chaperone Bob Morton, and to all the officials of Clemson who made my trip possible.

To each underclassmen in the College of Agriculture and Biological Sciences, I say, "Study hard and participate in extracurricular activities, this trip is well worth working for."

DAIRY
(Continued from Page 8)

October in Chicago working with the national program planning committee in planning the 1965 meeting in Lexington, Kentucky.

On Tuesday night, October 27th, the formal initiation was held for the six new members of the Dairy Club in the auditorium of the Food Industry Building. The initiates were required to cater to the old members in various ways and they also put in a certain amount of time on building the club's homecoming display which appeared in front of the Chemistry building during homecoming.

The club's plans for the future include sending delegates to the Southern Regional convention in Dallas, Texas. Gene "Knot" Merritt is president of the Southern Section of ADSA.

THERE IS A LOSS OF
1000 DAIRY COWS PER
COUNTY IN MANY PARTS
OF THE U. S. A.

Goodness knows they neglected to insure
more profit coming in by breeding to
NOBA Bulls

Semen Available Anytime — Anywhere

SEVENTEEN
Student Agricultural Council News

At the last regular meeting of the 1963-64 school year, the Ag Council held its elections. Those elected were: Chairman, Jimmy Williams; Vice-Chairman, Danny Bozard; Secretary-Treasurer, Marshall Dantzler; and Reporter, Joe Shealy. Dr. Gene Stembridge was elected Senior advisor and Dr. T. H. Garner Junior advisor.

The Ag Council will meet the first Tuesday in each month at 4 p.m. in the Student Center.

As in the past, the Ag Council plans to promote Operation Contact. Through this program an attempt is made to contact high school students throughout the state and stress the field of Agriculture as an area of employment for them. This program has been a success in the past and we hope to make it even more successful this year.

Anyone who is interested in speaking to a group of students or in having someone else speak to a group may pick up literature and information from Dr. J. W. Jones in Long Hall.

The Ag Council is planning to coordinate a college-wide Agricultural Field Day in the spring. This idea is now being studied and any suggestions will be appreciated.

“Mother, are there any sky scrapers in heaven?”

“No, son, engineers build sky scrapers.”

COKER VARIETIES FOR 1965

HYBRID CORN
Yellow — Coker 71... Coker 67
White — Coker 911... Coker 811... Coker 811A

COTTON
Coker Carolina Queen — Certified
Coker 100-A

TOBACCO
Coker 298 — NEW!
Coker 319
Coker 111
Coker 187 — Hicks
Coker 80-F
Coker 187
Coker 156
Coker 47-27

SOYBEANS
Coker Hampton
Coker Hampton 266
Coker Stuart

OATS
Coker Moregrain
Coker Suregrain
Coker Victorgrain 48-93

WHEAT
Coker 61-19
Coker Hodden
PESTICIDE
(Continued from Page 3)
top soil is two million pounds per acre. On a per-
centage basis, the farmer is using a very low con-
centration of active chemical ingredient. Through
the use of more specialized chemicals and such
things as surfactants (surface tension depressants
—similar in net effect to detergents), the active
ingredient concentration per acre of pesticides
has been greatly reduced over the past few years.
Farmers are not indiscriminately contaminating
our foodstuffs.

The soil, air, and water are the final depositorys for all public, industrial, and agricultural
wastes. Pesticide residue is only a phase of the
very large problem of environmental pollution
by wastes. The population explosion and urban-
ization movement have brought city and farm
closer together. This has increased the problems
of industrial waste and public waste disposal
without contamination of farm land. When com-
pared to the general pollution problem, pesticide
residues do not rank a leading position in the
scale of individual problems. Through continued
research and collection of knowledge concerning
soil and plant chemistry, the “future farmer” will
be an intelligent “chemical farmer” and will pro-
duce safe, contaminant-free foodstuffs.

Senior (at a football game): “See that big
substitute down there playing quarterback? I
thing he’s going to be our best man next year.”

Coed: “Oh, darling, this is so sudden.”

Hort Club News
DAVE WALKER

The Hort Club has gotten off to a very good
start this year. While we did lose a few mem-
ers, we gained fourteen new freshmen. We hope
that next year our membership will be even
larger.

The projects of the club this year for making
money are the sale of apple and grape juice and
some grape jelly. Since the peach crop was killed
this year, we decided to try making juice and so
far we have done very well.

The main event that the Hort Club is work-
ing toward this year is the trip to Dallas. This
will occur in February when the Southern Ag
Workers hold their convention. The members
will meet with other collegiate branches of Horti-
culture Clubs from different states.

The officers for the Hort Club 1964-65 are
Butch Ferree, President; Ronald Burnett, Vice
President; Loren Brogdon, Secretary; Arthur
Pfister, Treasurer, and Dave Walker, Club Re-
porter. Last year’s president, Ronnie Robbins, is
now at L. S. U. doing graduate work.

The members of the Hort Club are divided
into two majors — Ornamentals and Fruit and
Vegetables. Both of these fields play an important
part in the business world as well as the private
residence. Students and grad-students in these
two fields are in great demand and their need is
growing larger and larger as the population in-
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