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Is Farm Youth Deteriorating?

By S. K. Able, '42

Of all our nations assets none are so valuable . . . so irreplaceable as farm youth.

The leaders of tomorrow—the youth of today.

(AUTHOR’S NOTE: During these trying times there have been numerous charges that American youth has gone soft, has become weak and indolent. This article, written editorially, is a defense of the farm youth of America. The author, during the National FFA Convention in Kansas City, Missouri, had ample opportunity to meet and observe youngsters from all parts of the nation and from all walks of life. The following are the author’s impressions and compose his answers to those who would condemn our FUTURE AMERICANS.)

The Future Farmers of America, national farm youth organization, is probably the only one of its kind in the world. It is one of the largest organizations in the United States, covering forty-seven states, Alaska, Hawaii and Puerto Rico. The group which met at Kansas City, Missouri, in October was typical—typical of Young America today. They are tomorrow’s citizens. It is to them the older generation will leave the glorious heritage that is America. Is is to them the nation will look for protection in the next few years. How will these boys, many of them yet to take their first shave, stand up to this responsibility? Or maybe it is not so much a responsibility as a challenge. After meeting these fellows, talking with them, seeing them in action, there can be but one answer. They will never shirk, they will overcome their obstacles, kill their Goliaths and emerge with their heritage safe and the great American smile on their face.

During the entire week-long spectacle of American youth in action there was no sign of weakness nor the slightest evidence of any lack of ambition on the part of any boy present. Each one had his own ideas, his own plans, goal and convictions. None missed an opportunity to express his feelings. This was democracy in action.

Cooperativeness is one trait which the FFA strives unceasingly to develop to the fullest. The growth of this spirit of group work can be well illustrated by the work of the Michigan State FFA band. There are sixty-four musicians in this band and they come from fifty-four different chapters of the FFA. This band played as well as any group of amateurs could and gave several nationwide broadcasts during the convention. Had it not been for this spirit of cooperativeness in the boys, this band would not have been possible. It is ‘90 bad that adult America cannot realize the need of this spirit, especially in times of national stress.

The Nyes, Lindberghs and Wheelers of the United States could well afford to take a few lessons in patriotism from these farm boys, for in their ceremonies and other activities there is always a note of deep feeling for their native

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Science in Agriculture

This broadcast is so informative, so searching, it adds stature to any publication.

Collings, Mr. Williams, South Carolina farmers have realized for a number of years that they were growing too much cotton and not enough livestock. Leading farmers in the state have long advocated more diversification and this doctrine has been concurred in and helped along by the various activities of the United States Department of Agriculture and the South Carolina Experiment Station and Extension Service. During the last ten years, the acreage for cotton in South Carolina has had to be reduced by about 800,000 acres. During the same period, the acreages of food, feed and hay crops have increased about 1,000,000 acres. So you see the land that has been taken out of cotton production has been diverted to the production of soil conserving and feed crops. This adjustment of production is believed to represent real progress and this change in farm practices is already doing much to help produce a better farm life on many South Carolina farms.

Williams: I know what you say is true because I have noticed this change in my community but I don’t believe farmers yet have enough stock. I know I don’t.

Collings: You are right, Mr. Williams. We need much more livestock and poultry in South Carolina, but while we are getting more livestock we must increase our acreage of improved pasture or we will not be able to maintain the livestock. We all know that on many cotton farms the area which the stocks is turned to graze and which is called a pasture is no more than an exercise lot.

Williams: It looks like in spite of everything I do my pasture dries up every summer. I would be in a bad fix if I didn’t have some bottom land to graze. Dr. Collings, why is it so hard to make and keep a good pasture?

Collings: Mr. Williams, yours is a common experience. Pastures are not as easily secured in South Carolina as they are in the so-called livestock regions of the United States. For one thing our soils are timber soils; that is, when these soils are abandoned they naturally grow up in timber just as the soils of the western prairie county naturally produce grass. Of course, our soils can be made to produce grass but when we put grass on a piece of South Carolina land we are going against the current, we are working

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An Editorial

By EDWARD P. HUGUENIN

Editor-In-Chief

Since Reconstruction (which has not entirely ended yet) the South has remained as solidly unipartisan as it was before the Civil War. The large landowners, before the war, decided that it was for their best economic interest to act as a unit, and this was the beginning of the “Solid South.” Since the end of the war the dominant political group has felt that all white men must stand united, or submission to the negro would be the result. A large number of our politicians have used this fear of negro domination as a tool to gain office, it is sad to say. The effects of this concern are readily seen in our civil and political policies today. The colored man has been continually striving to come into his own, politically; and the southern legislators have been equally active in preventing even a vestige of “Negro Domination” to occur. The negro was (and still is) excluded from the Democratic primary which is paramount to election in most of the South. Therefore the few who have been allowed to register have been, obviously so, solidly Republican, and it follows, that the whites would be solidly Democrat in order to maintain their supremacy (in the event that negro suffrage becomes a serious threat). This political situation has been of inestimable harm to the entire nation.

As long as the South is forced to vote “solid” no political justice can be secured, nor can statesman-like policies be initiated for the good of the country. For years the latent, but ever-present potentialities of the negro man have had an important influence on the thought and legislation of the southerners. There can be but little in dependent thinking because this would mean division, and division, in the minds of too many of our leaders would be ruin. Obviously we can never reach our maximum political and moral strength with almost one-half our people subserviant. (The white mans foot is on the neck of fifty percent of our people). To keep a man down in a ditch, one has to either get in the ditch too, or stay so near the brink that there is the ever present danger of being pulled in.

This problem isn’t one to be solved by crackpot theorist, or a bunch of useless committees. So long as any group or minority isn’t given an equal chance, no other group or minority is free, because there is the ever present danger that the persecution might be extended. This old-fashioned, Archaic, and un-American situation will have to be solved by the southern youth. At present there seems no better solution than “As ye would have others do unto you, do ye also unto them.”
Suddenly there has been a boom in preparing for national defense. Machinery has been running at maximum speed, and men have been working overtime in order that the United States may secure more equipment to give its thousands of young men better training in every way possible in uses of each type of weapon.

It has been stated that the large manufacturers have been profiting from increased production, the middleman has been making too large a sum of money from his buying price and selling price. Are the farmers going to stand by and let the middleman grow rich at their expense? What are the limitations of the farmers' control?

Good wholesome food is essential for any soldier to do his best in the defense training problems. Where will this food come from? The United States army officers realize just how important good food is for their men, and they say that their army will eat the very best. Ask the boy who used to grease your car, the son of your family doctor, or that young man who used to tackle the bar exam—Ask any of the lads you know next time he is home on leave. He will tell you that the U. S. Army eats good food. Certainly no part of preparedness is more important.

And, to realize how big a job food is, consider that the quartermaster provides 12 ounces of meat, 10 ounces of bread, 8 to 10 ounces of vegetables, 6 to 8 ounces of fruit, a half pint of fresh milk, 5 large cups of coffee, plus eggs, butter, and condiments to every man every day.

Will the farmers of this state permit the manufacturing companies to sell everything to the army, thus benefitting by a few dollars themselves?

Camp Croft located at Spartanburg and Fort Jackson in Columbia, feed around 91,000 men three times a day. Mess diets vary from day to day and almost every farm product is used at some time throughout the week.

If the farmers ever hope to supply the army, they must do it through some sort of organization that can meet a year 'round demand on a quality basis. Farmers drive up to camps and try to sell apples, carrots, cabbages, eggs, etc. The army does not want them that way. They must be graded according to federal standards. They do not want them just at the peak of the season when prices are fancy. Contracts are made on a monthly basis and they have got to call in these—rain, shine, or Hitler.

Purchasing is done by competitive bidding for everything over $500. The goods are bought on federal grades so that producers can be intensively educated in meeting these standards. Perhaps a farmers' cooperative organization would be the best way to get started in this food supply business.

A good farmers' cooperative could compete with any business dealer or wholesale dealer in the state. A cooperative could be formed if the farmers would be willing to work together. If a cooperative is formed for this purpose, the farmers should be able to soon get experts to manage, grade, and sell their products at a large profit, and also they could buy supplies for their various farm needs at a reduced cost, thus helping the farm income. A marketing enterprise of this nature could be nothing but successful.

“In producing these cooperatives, better markets for fruits, vegetables, eggs, meats, etc., should give stimulus toward improved methods of producing, grading, and marketing, of permanent advantage to agriculture.”
Unlimited Possibilities . . .

GUEST EDITORIAL

We have but to look around us to see our possibilities . . .

South Carolina is a great State and has almost unlimited possibilities for further agricultural development.

Practically everything that grows in the temperate zone can be produced profitably in this state and many of the subtropical plants do well. Her farmers are intelligent and instictively thrifty.

Cotton, tobacco, hay, fruits, vegetables, grains are the principal crops and these with poultry and livestock can be made to bring more money to South Carolina farmers if all will use better farm practices.

The farmer's main object agriculturally, is to raise from a given area of land the best quality and the largest quantity of the most valuable produce at the least cost, in the shortest period of time, and still improve his soil.

If he succeeds in doing this, his standard of living will almost automatically take care of itself.

There are a number of agricultural agencies and publications working with farmers and each is working, in its own way, towards a better agriculture for South Carolina and the resultant better life for her agricultural people.

Agricultural programs and policies of all groups should be so arranged and planned to stimulate and encourage individual initiative—THE AMERICAN WAY—! Care should be taken that "help for the farmer" is not the kind that makes him dependent on outside aid, because many farmers, like the rest of us, will accept income from government funds as a substitute for income earned the hard way.

Mighty few people, on or off the farm, gain success the easy way. Hard work and some sacrifices are the old and still true formulae.

Programs may make good reports on money dished out to support movements but these cannot be called successful until farmers themselves have improved their economic condition sufficiently to keep their activities self supporting. It is also possible some of this government aid may stop—and then what?

Agencies, no matter how well manned, nor how well their programs are planned, cannot accomplish much without the hearty help and cooperation of the farmer himself. Do you know of any man who lifts himself by his own bootstraps?

To make South Carolina agriculture reach its desired goal, to make all South Carolina farmers self supporting—there are still too many who are not—will take the combined and sincere efforts of the farmers first and all who have continued on page 28
Soil Depletion--A Major Problem

By R. N. GLEASON, '42

Our soils must not be treated as they have been if they are to keep up their maximum production.

In the so-called Dust Bowl in the Southern Plains, 6 million acres of land was subject to severe wind erosion in 1935 and 1936. Surveys made in 1939 show that less than 1 million acres of this same area is still subject to severe blowing. This is one of the most striking examples of a successful effort to stop soil depletion.

One of the most important measurements of soil depletion is expressed in terms of crop yields. Only the increased costs of production due to the purchasing of commercial fertilizers have maintained crop yields in the face of declining soil fertility.

Soil erosion is the most easily recognized of the soil depleting forces. It has been estimated that three-fourths of the original surface soil has been lost or over 50,000,000 acres of crop land. The 1935 census reported that 75 percent of the cropland area of U. S. was in need of conservation practices.

Factors governing the transportation of soil by rain water are: slope of land area, soil type, kind and amount of vegetation, and amount and intensity of rainfall. Erosion by water is a progressive process, intensified by cultivation and over grazing and sometimes by burning. The removal of plant-food constituents by cropping and grazing is relatively small when compared to the removal by erosion.

Soil depletion by erosion is consistently heavier on land planted to a clean-tilled crop year after year than on cropland areas under a good rotation; and soil losses from fallow land bare of vegetation are uniformly much greater than from land in grass or trees.

There are many thousands of acres in the South now lying idle and subject to erosion that could profitably be seeded to good cover crops. Cover crops prevent soil erosion in two ways—while the crop is growing, the soil is protected from the impact of rain and the run-off is retarded; when the cover crop is turned under as green manure, organic matter is added to the

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Dairying Equipment and Methods

By EDWIN B. COLLINS, '43

The best equipment available is an indispensable asset to the modern dairy products plant. The high labor cost which is prevalent throughout the United States would make operation unprofitable for dairying industries were it not for the great strides which have been made by manufacturers of dairying equipment. Were labor cheap, the absence of modern equipment would make it impossible for plants to process large volumes of milk. Because of the perishable qualities of milk, bacterial counts would be high.

The public health in general would be greatly endangered because of the dairyman's handicap. Modern knowledge of Bacteriology would be true only to be read about in books, and a primitive industry would be striving against unconquerable odds in a modern world.

In the modern dairy plant the story is entirely different. Thousands of gallons of milk can be processed during a day's time. Unbelievable, but true, man's most perfect food, full of life dealing energy, vitamins, and minerals, can be passed from its source to our table, without touching the human hand. Vacuum milker, holding tank, and bottle filler help to pass milk into your bottle free from contamination. Refrigeration, which makes the dairying industry possible, proves itself to be the consumer's greatest friend by keeping the wholesome product amazingly fresh until it reaches his front door.

Though nearly all dairy equipment is made of stainless steel, all efforts towards a wholesome product are fruitless unless sanitary methods are used. While milk is the best of all foods for man, it at the same time meets all the requirements of a perfect medium for bacterial growth. Though the best modern equipment is used, it is impossible to produce a good quality product while using dirty equipment. A modern "flash" pasteurizer has fifty or a hundred joints of pipe to be taken apart each time the pasteurizer is cleaned. These joints must be taken apart, scrubbed, and replaced every day after the equipment has been used. One of the problems in dairy plants is the employing of men who can be relied upon to do their duty under such circumstances.

The laboratory of a dairy plant is continually on the watch for any defects in the quality of the plant's output. Many tests of different kinds are run several times each day so as to catch any defect at its beginning. The laboratory in a certain dairy plant last summer began to find high bacterial counts in the plants, chocolate milk. Upon investigation, it was found that the pipes and cans used in making the chocolate milk were not being properly sterilized with chlorine disinfectant. As soon as the situation was corrected, low bacterial counts were again found in the laboratory.

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Cooperatives by Jack Schaffer '43

A cooperative is a voluntary business organization established for the purpose of collective marketing. It is owned and operated by the member patrons. It is amiable to the economic forces but not all the traditions, codes, and practices of privately owned enterprise.

Cooperatives differ from private business by the interests that motivate its organization. A business corporation's main objective is to get as large a return on the capital invested as possible, but a cooperative's primary objective is to give the member patrons efficient service for their direct benefit. A cooperative has limited interest on capital, usually 6 percent, while private business has unlimited interest on money invested. The method of voting is far more democratic in a co-op where each member has one vote while in private business each share of common stock counts as one vote. In a co-op no proxy voting is permitted. A co-op favors any who are willing to buy or sell, while a private business favors only a select few. A cooperative distributes the profit according to the amount of business a patron furnishes, while a corporation shares profit according to the amount of stock a member holds.

Cooperatives pool the buying power of their members in order to buy in quantity and thus enable them to get products at a more reasonable price, and they provide financing, insurance, housing, and utility services such as rural electrification. They may have machinery to loan their members at planting and harvesting time.

Cooperatives have been misunderstood and fought by vested interests. It has had some terrible failures due to poor organization. It has been accused of being a monopoly when in reality it is just the opposite of a combination in restraint of trade.

The first known co-op was a creamery in Goshen, Conn., in 1810, and in 1844, some Wisconsin farmers made cheese collectively. In 1851 some farmers in Rome, N. Y. manufactured cheese by the so-called “American System.” In discussing co-ops, most people think of Rochdale. This co-op which is still in existence was organized in the small town of Rochdale, Eng. It was made up of weavers who found that their only hope of survival was to buy collectively.

During the next forty years, cooperatives were in the experimental stage. Many were organized, literally overnight, and disbanded in a very short time. This period was the testing ground of co-ops. The year 1880 is considered the turning point of the cooperative movement. Since that time, we have had some large and successful co-ops. In California, the fruit growers do a $100,000,000 dollar business a year. The dairymen of New York do an equally as large business. Throughout the nation, there are thousands of co-ops that sell insurance, extend credit, market raw materials and buy for the consumer.

Denmark is usually cited as the foremost example of successful nation of cooperation. She is a small country and far from wealthy but by producing butter, eggs, bacon, and ham and marketing these products cooperatively, she has been able to survive. She has set a high standard of quality that sells at a premium price. She had to start marketing cooperatively when Prussia took a goodly portion of her farm land away. It was one of the first acts of Junker imperialism which to this day has not been abbreviated. This left Denmark without any means of livelihood, and she had to intensify production.

About one-half of the agricultural goods marketed in the U. S. are through co-ops. Cooperatives are a major social outlet in many communities. Without them our whole economic structure would undoubtedly be changed. The farmer's and consumer's dollar would not stretch as far as it does without them.

Cooperatives are of many types and purposes. There are cooperative sales or marketing organizations which sell farm products that are produced individually on the farms of the members. The processing, packing, storing, financing, and bargaining is carried on by these organizations. There are co-op purchasing organizations that pool the buying power of the members but sell both to non-members as well as members.

The cooperative picture should not be painted completely rosy in color because it isn't by any means. Many farmers do not like to have anyone market their produce but themselves. To some farmers, marketing is the most exciting chapter of farming. This desire on the part of farmers to keep their individuality has caused many co-ops to fail. Some co-ops are overpromoted. The farmers themselves should express the desire to form a co-op, to high-pressure salesmen.

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Better Bulls---More Profit

By G. W. EDWARDS, '42

One of the great needs of South Carolina's agricultural progress today is the improvement of its beef cattle. Therefore, in our state there is room for vast improvement in our present commercial herds. This can readily be realized at the auction markets by the noticeable discriminations that the buyers place on the off type or non-beef type cattle. This results in a sizeable loss to the beef producers of the state each year.

Purebred or good grade beef steers weigh more for their age and make more economical gains on the same feed; also, they are much higher in quality and sell for more per pound than do off type or scrub steers. This makes it very easy to see why desirable cattle demand a higher price at sales and return more profits to the producers.

The quickest and most economical way to correct this situation is by the use of good bulls in our herds.

Selecting a good bull is very important to the beef producer. The chief problem is locating an animal which has been proved to be superior. Any time that is used to locate a good bull is well spent. Many breeders buy cheap bulls because they are more economical to purchase but actually the most expensive thing in beef cattle production is a sorry off type bull. Good bulls reap many profits and in the long run are much more economical than cheap ones.

When buying a bull, let a mental picture of a superior animal remain constant in your mind. Do not buy the first bull that you see but study many animals before making a selection. However, it is almost impossible to find a perfect bull. The animal that you select should be strong in the points where your cows are weak, thus giving you a higher quality offspring that has more beef qualities than your cows.

Most cattleman tend to want large bulls; nevertheless, a bull of medium size is more valuable to the average breeder than an unusually large one. Along with size some other general characteristics that should be kept in mind when selecting a superior animal are well developed hind quarters, good width of rump, great spring of ribs, shortness of legs, shortness of body, great depth of body and straightness of legs. An animal that does not have all or most of these characteristics is likely to do damage to your herd.

Even in the first offspring the qualities of a good bull are very noticeable. By selecting the best heifer offspring and using these for breeding stock the herd will be gradually improved. In a few years a reasonably good grade herd can be acquired by this method. Over a number of years this would greatly improve the beef herds, increase the farmers' profits, and stimulate much interest in beef production in our state.
Cotton--Weather Research

By C. B. FELLERS, '43

There are five cotton-weather research projects in the South. They are located at Pee Dee Experiment Station, Florence, S. C.; Georgia Experiment Station, Griffin, Ga.; Delta Experiment Station, Stoneville, Miss.; Cotton Branch Experiment Station, Marianna, Ark.; U. S. Dry Land Field Station, Lawton, Okla. One of the main objectives of the cotton-weather experiments is to study the effects of variable weather conditions on growth, fruiting and production of cotton. To obtain this objective it is highly essential not only to make accurate and timely weather observations but also to make accurate and timely plant observations. With a minimum of sampling error, as well as actual error, in measuring the two phenomena, the actual relation between plant characteristics and weather is more readily observed.

Within a growing season at one location, weather variations may be roughly divided into three groups or cycles. The first source of variations comes from normal fluctuations within each twenty-four hour period. Changes in temperature and humidity usually follow a fairly definite pattern throughout the day. The next source or cycle of variation in weather is associated with "highs and lows" that vary both as to intervals between occurrence and duration. These indefinite cycles account for considerable variations within seasons. The third source of variation is made up of seasonal changes that are associated with spring, summer and fall. During the summer months "highs and lows" are not responsible for as much variation in weather as in winter. Conventional and tropical storms are characteristic of summer weather and account for considerable variation in rainfall. Aside from the effect of rain falling during thunder showers, the crop weather experiment is designed to measure accurately the effect of fluctuations of weather occurring within one day. The effect of general changes within seasons and between seasons is easily observed over a period of five years.

The following observations are made of the environment in which the plant grows: relative humidity, maximum and minimum temperature, evaporation, rainfall and soil moisture. The relative humidity is observed three times daily: 8 A. M., 1 P. M., and 5 P. M. A sling psychrometer, consisting of a pair of thermometers, is used for determining the relative humidity. Maximum and minimum temperatures are recorded daily. To obtain the amount of evaporation white atmometers are used. In measuring the amount of rainfall, a standard rain guage and a recording gauge are used. The recording rain gauge records the time, velocity and duration of each rain. Soil tensiometers are used for observing soil moisture.

In the experiment there are four varieties of cotton used, namely: Oklahoma Triumph, Stoneville 2B, Dixie Triumph, Shafter Acala. There are two plantings; a late and a normal planting. The experiment is so designed that each of the 32 plots contains one third of an acre. Four samples of five linear feet within each plot are used for making height measurements and various fruiting counts. Square counts and boll counts are made weekly. When the cotton begins to flower, the blooms in the samples are tagged with the date of their blooming. As the season progresses, the shedding of the young bolls are accounted for.

The basis of the experiment came from this: weather factor—plant characters—yield and quality. Over a five year period the bureau of Agricultural Economics is trying to eliminate the middle term. In other words, when there are certain weather conditions given the yield and quality of the crop can be predicted at once. One can easily see the value in an equation of this kind. It will be of great importance to the farmer as well as to the business man.
Dr. H. T. Polk, Associate Agronomist of The South Carolina Experiment Station at Clemson, received his B.S. in chemistry from the University of Kentucky in 1931. After graduation he worked for a while in The Chemistry Department of The Kentucky Agricultural Experiment Station before taking up graduate work. In 1938 he received his Ph.D. from Cornell having majored in Soils.

In September 1938, he came to Clemson College and has been connected with the Agronomy Department of the Experiment Station since that date. Dr. Polk is doing research work in Soils and Agronomic investigations and helps with the soil testing for fertilizer and lime requirements.

Dr. Polk says that there is an increasing interest being shown in the soil-testing service conducted by the Agronomy Department. This is evidenced by the almost daily arrival of samples throughout the entire year and the marked increase in the number of samples received from year to year. During the past year, about 12,000 soil samples were sent in for various analyses; as compared with 5,446 in 1938, there were only 1,838 samples received in 1937.

Dr. Polk and co-workers make the kind of tests that are requested by the individuals submitting the soil samples. An acidity determination, as expressed by the PH value, is made on all samples. This test is used as a measure of the lime needs of the soil. Tests for available phosphorous and potassium are made where fertilizer recommendations are desired. Soil samples are also analyzed for manganese and magnesium.

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The Oriental fruit moth was first officially found in South Carolina in 1928. Since that date infestations have increased to such an extent that at present it is the predominating pest of the commercial peach orchard. Peach twigs and fruit appear to be the preferred food, but practically all orchard trees are susceptible. Infestations have been found on quince, plum, apricot, cherry and nectarine twigs, also in fruits of apple and pear. There is uncertainty as to the origin of the Oriental fruit moth as it occurs in France, Italy, Japan and Australia. The earliest record of its occurrence was in Japan in 1908.

In its development the Oriental fruit moth passes through four distinct stages. These are egg, larval, pupae and adult. The eggs are grayish white ovules of about one thirty-fifth of an inch in diameter. These are usually found on the under surfaces of the young tender leaves of the terminal twigs. Incubation time varies directly with temperature, but is usually from three to ten days. The larva upon emerging are about one thirtieth of an inch long. It is in this stage that the damage is done as the larva enters the twig at the base of the leaf and bares down as much as four inches in some cases. The larva may pass the entire stage in one twig or may enter another twig or a fruit. The twig seems to be the preferred fruit and until it ceases growing and hardens little damage is done to the fruits. Twigs which are infested usually have one or more wilted leaves, later the end of the entire twig dies and as the branch grows it takes on a characteristic bushy appearance. This larval stage lasts for about ten days varying with temperature and abundance of desirable food. When grown the larva are pink and about three-fifth of an inch long. Then it emerges and pupates on the leaves, bark, or fruit by spinning about itself a silky cocoon wherein it becomes shorter and thicker. In the early or mid-summer the adult will emerge, but if pupation occurs in the late summer the moth will hibernate over winter in the pupal stage. There are usually six generations per year, of these about one-half hibernate.

No poison has been found that will efficiently and economically control the oriental fruit moth. Chemically treated lands have been used experimentally and proven to be of some value, however the most promising control appears to be parasites. In 1930 the South Carolina Experiment Station and Peach Growers Association began cooperating in an effort to control the oriental fruit moth. Several parasites have been successfully tried, among these are egg, larval and pupal parasites. Early parasitism in any stage is low, however this percentage increases rapidly during the season. Introduced parasites gave better results in 1940 than any previous season, the percentage of parasitism being as high as 76.6 percent, while the native parasite gave as high as 71.8 percent parasitism.
THE CLEMSON AMPHITHEATER

THE CLEMSON LIBRARY
BETWEEN THE

Better Farm Living Train a Big Success

The livestock and better farm living train operated in South Carolina during September by the Clemson College Extension Service in cooperation with the Atlantic Coast Line railroad, according to Extension Director D. W. Watkins, was a big success. The eight-car train filled with exhibits and demonstrations stressed the various phases of better farming, including the importance of more livestock, made 45 stops in 32 counties. It thus gave the people in practically every part of the state an opportunity to see a moving agricultural fair that was highly educational.

Stadium

That Clemson will at least have a new up-to-date stadium now appears to be a reality. The financial arrangements have been made and the surveyors have made their investigations. Actual work on the arena will be started this fall. The stadium will be built in the natural depression behind the field house in two parts, one part on each side of the playing field. It will be constructed so that in event of expansion, an additional section may be built. The stadium will then be in the form of a horseshoe. The present plans call for a seating capacity of twenty thousand people. Dressing rooms and showers will be built into the concrete structure.

The new stadium will enable Clemson to schedule more home games. The present stadium has been highly unsatisfactory in accommodating the football crowds.

Sweet Potato Production and Marketing Meeting

A sweet potato production and marketing meeting will be held at the Edisto Experiment Station 3 1-2 miles from Blackville, South Carolina on the Blackville-Williston highway on Thursday, October 16. The Experiment Station and Extension Service staffs will cooperate in presenting the results of sweet potato experiments and the work which has been done on the marketing of this crop.

Alpha Tau Alpha News

The new officers for the Alpha Tau Alpha are: J. T. Sherman, President, G. W. Butler, First Vice-President, H. L. Crouch, Second Vice-President, D. C. Herlong, Secretary and Treasurer, R. L. Bull, reporter. The Alpha Tau Alpha chapter is planning a big year. It is trying to get a room for meetings and social activities. Plans are to have a banquet this year and several other social events. As usual, Alpha Tau Alpha is going to give a prize to the sophomore with the highest grade point ratio at the end of the year.

Dean H. P. Cooper attends meeting

H. P. Cooper, dean of the school of agriculture, attended a meeting of the Southern agricultural leaders called by the secretary of Agriculture in Memphis, the latter part of September. The purpose of the meeting was to consider agricultural planting in the South in view of defense measures and as a permanent program of increased consumption and production of food.

Judging Team to Baltimore

The Clemson College judging team attended the livestock judging contest held in Baltimore, September 29. The Clemson cadets ran fourth in the group of contestants for the Eastern states. Preparations are being made for the judging team to attend the National Livestock Judging contest to be held in Chicago in November.

Cheese

Roquefort cheese, originally made at Roquefort France, having a flavor caused by a blue mold is now being made in the old tunnel above Walhalla. Dr. P. G. Miller, associate dairyman manufacturer, reports that the first batch of cheese was a big success. More cheese is to be put in the old tunnel at regular intervals. The tunnel has been cleaned out and electric lights will be installed soon.
Furrows

Dr. H. P. Cooper, Dr. G. H. Collings and other members of the agronomy department will attend a convention of the American Society of Agronomy to be held in Washington, Nov. 12-15.

R. L. Arrington (Class 1940), former president of the Dairy Club and member of Alpha Zeta, received his M.S. degree at V.P.I. last spring. Arrington is now on the dairy research staff at Clemson.

Alpha Zeta has begun a very active year. The first service rendered was in the form of an information booth for freshman on registration day. The next activity was an 'Ag. Mixer' held in the Agricultural Auditorium. All agricultural and ag. engineering freshmen were invited and many of the faculty were present. New members are to be taken in shortly.

Walker Gardiner, honor agricultural junior from Florence, won the $250 second place Sears Scholarship at a national examination held during the summer.

Marketing in South Carolina.

The sale price and assessed value of farm real estate in South Carolina over a period of more than 30 years is treated in a recent publication of the South Carolina Experiment Station released as Bulletin No. 334. The publication indicates the trend and the price of farm real estate over a period of years and shows the relationship of sale price to assessed value. Numerous inequalities are observed and analyzed. A copy of this publication may be had upon request.

Alumni

Lewis D. Malphrus (Class 1938) has recently been made Program Analyst of Region V of the Farm Security Administration, with headquarters in Montgomery, Alabama. Malphrus received his master's degree from the University of Tennessee in 1940.

Ben W. Anderson (Class 1940) is at Fort Jackson.

Lloyd C. Martin (Class 1940) is at Camp Croft. Before being called in the army Lloyd was a research assistant in the Department of Agricultural Economics and Rural Sociology.

Charles M. Aull (Class 1939) is with the Armored Division at Fort Benning. Aull received his master's degree from the University of Kentucky in 1940.

W. K. Bing, instructor in the department of agricultural economics and rural sociology at Clemson has been offered and accepted a fellowship at the University of Chicago where he will continue work toward an advanced degree.

Professor E. R. Hauser, instructor in the animal husbandry department, attended summer school at Iowa State College, Ames, Iowa.

J. E. Pace (Class 1941) is in Tala, Honduras, South America on a banana plantation.

W. J. Oates (Class 1940), graduate in agricultural engineering from Chester, S. C. has received his M.S. degree from Iowa State College. Oates is now a member of the faculty at Ames.

J. E. Cottingham Jr., from Dillon, S. C. and R. J. Berry from Smoaks, S. C. were awarded fellowships at Iowa State College, but they were unable to take advantage of the fellowships because of the U. S. Army.

Gilbeart H. Collins Jr., former graduate of Clemson, completed his graduate work at Emory University in the spring of this year. Recently he published an article in the S. C. Medical Journal entitled 'The Rural Medicine in S.C.'

Mr. David Ross Jenkins, Assistant Professor of Rural Sociology, attended the Agricultural Economics and Rural Sociology Conference at North Carolina State College during the summer, at which time he presented a paper entitled 'The Application of Scale in Levels of Living Studies.'
The Winter Corn Crop

By L. C. HAMMOND, '42

In many sections of South Carolina a not uncommon sight is the patches of mediocre and drought-stricken corn turning a stunted, pale, yellow color as the sun's rays, uninterrupted by clouds in the sky, beam down. The moisture in the soil from rain in months gone by is finally exhausted and the blades of fodder waving in the hot breezes curl up in a struggling effort for life. And life is about the only result, too, for in South Carolina the average yield of corn per acre is only 14 bushels. When, as often is the case, the per acre yield is lower, and with this average yield, hosts of southern farmers face the problem of having to buy their corn or limit the number of livestock kept on the farm. Improved farm practices can increase this average yield. However nothing can guard against the inevitable low yields of dry years.

Suppose we could find a crop to grow during the late fall, winter and spring months when the moisture supply is usually abundant, and that such a crop would produce grain of about the same feeding value as that of corn. Such a crop being discovered by more and more farmers each year is barley. "I grow my corn in the winter", is the casual comment of the barley grower. These farmers have found that they can grow barley with less labor, less danger of loss from drought and in the end have a per acre yield often exceeding that of corn. They have found that this grain closely approaches the feeding value of corn, and that it sets up an excellent barrier to any feeding problem when the corn crop is short.

The South Carolina Extension Service estimates that an average South Carolina farm family maintaining the proper number of livestock requires about 300 bushels of corn each year. With the small average size of South Carolina farms, enough acres could not be planted to supply this demand in a bad drought year. So, to guard against such a gamble, why not sow a few acres of barley in the fall to supply a part of this 300 bushels of grain? In 66 demonstrations over South Carolina, the average yield of barley was 34 bushels per acre. Using this figure, it would take approximately five acres to produce enough barley to take the place of 130 bushels of corn. This five acres of barley would be more certain than the 130 bushels of corn in the summer. It would also provide a cover crop to control erosion on the soil which might otherwise be naked to the torrents of water during the winter months.

Barley, as a grain feed, is used somewhat differently from corn. In feeding cattle and horses it should not compose over half of the grain mixture, corn and oats being supplied with it. Barley can readily be given a strong position in the balanced ration of hogs and sheep. Its use is far from being limited to that of a grain crop. Winter grazing for cattle, and horses are some of its numerous uses.

As a southern field crop, barley has been grown for many years, but not very extensively. However, its culture is familiar with most farmers, and is little different from that of other small grains. Every Southern farmer who finds it difficult to supply his grain requirement should apply lime to a few acres of his soil and follow this with his grain drill and about 300 pounds of a complete fertilizer late in September or early in October. Then forget about plowing and getting the grass, and in the early spring just apply from 100 to 200 pounds of a nitrogen fertilizer over the green field and harrow a few times with the spike-tooth drag harrow. Behold! The harvest is ready and, yes, the corn crop was made during the winter and spring, at least a part of it, anyway.
Erosion of Rural Society
By JACK SCHAFFER, '43

There has been a great tumult and shouting about the erosion of soil. Many publications have sent forth suggestions to improve the fertility of our depleted soils. While trying to save our soils, many have forgotten that there is another type of erosion taking place, the erosion of the society that live on that soil. Here are some eye opening facts that was gathered by the President's Committee on Farm Tenancy. We quote some of this report:

"In the spring of 1935 there were more than a third (34.2 percent) of the 2,865,00 tenant farmers of the Nation who occupied their present farms only 1 year. In many areas the proportion exceed 50 percent. It lays a heavy hand upon the large numbers of rural children caught in this current, who find the schooling periodically interrupted, if not made impossible, and who suffer from mental as well as economically insecurity."

The basis for any successful agricultural foundation is education. The children of these people are the most uneducated in the nation. Without an education these people are an easy prey for a dictator making wild promises. They are easily fooled in trading or any business transaction. Such a condition must be remedied immediately.

The living conditions of these people have been presented on enough occasions to go without discussion here. The inadequate housing of a great portion of our population is causing an erosion of our society just as surely as onecrop farming is eroding our soil. The sooner we obliterate this sore eye the better our cultural formation will be.

These people are very susceptible to many diseases. Then lack of good clothing, and housing cause ill health among them. This causes a loss in many working hours and wealth.

These people, due to ignorance and unreliability are a problem to credit agencies and landlords. They ruin the land lord's land because of their desire to get as large a return as possible, and they borrow money from credit agencies and in too many cases can't pay it back.

Our agriculture is faced with the problem of obtaining a fair share of our national income to recompense the farmers for their products and at the same time maintain the fertility of soil.

The 1941 A.S.A.E. Seminar
By J. M. GIBERT, '43

The A. S. A. E. Industry Seminar is a program sponsored each year by The American Society of Agricultural Engineers with the cooperation of several farm equipment companies. It is a program constructed to give students, faculty members, and other college officials a better knowledge of the farm equipment industry. The delegates make inspection tours of plants and hear addresses on organization, research, finance and other phases of the industry.

The companies participating in 1941 were: Alis Chalmers Power Company, John Deere Plow Works, Minneapolis-Moline Power Implement Company, International Harvester Company, Oliver Tractor Company, and Caterpillar Tractor Company.

The deans of agriculture and engineering of many agricultural schools, professors of agriculture or engineering and students from thirty three states, Canada, Brazil, and Mexico attended this year. Representatives from here were: Dr. H. P. Cooper, Dean of Agriculture and Director of The Experiment Station; Professor G. H. Dunkelberg, Associate Agricultural Engineer, and F. M. Johnson and J. M. Gilbert students.

The Seminar showed that the farm equipment industry realizes that it is to its best interests to help the farmer improve his present state. This industry is also doing its share in the national defense program. By direct production of defense machines and machinery enabling fewer men to produce more food and fiber it is doing the lions share of a man sized job.

A glimpse of the inside of the farm machinery industry would cause any agriculturalist to become aware of the value of this industry to American agriculture. An opportunity for every student to see at least part of what was presented in this seminar would improve the curriculum of any agricultural school. —J. M. Gibert, 1943

Dr. W. T. Ferrier and Mr. H. A. White of the Department of Agricultural Economics are authors of a recent publication entitled, Cotton Marketing in South Carolina.

At the same time, there must be some action to regulate land tenure so there will be an adequate share of the agricultural income given to the people who actually till the soil.
About This and That...

BY THE EDITORS

THE COVER

THOMAS GREEN CLEMSON

Born in Philadelphia, July 1, 1807
Died at Fort Hill, April 6, 1888
Scientist—Diplomat—Soldier
Founder of Clemson College
and Benefactor to the Sons of
his Adopted State.

The cover of this issue shows the John Harvard of Clemson—Thomas Green Clemson. The words shown above are graven on the plaque affixed to the stone figure of this school's namesake. These few words could not possibly cover a career so colorful or a life lived so unselfishly nor could they possibly convey to the reader the workings of a brilliant mind.

Not only was he an educator, but a farmer, chemist, engineer, author and diplomat as well. His writings on scientific agriculture and agricultural chemistry were years ahead of his contemporaries and he was American Charge d'Affairs to Belgium for seven years.

The mock stone figure which appears on the cover of this issue of the AGRARIAN is a fitting tribute to a great man. The statue was erected by contributions made by a greatful student body through the efforts of Blue Key fraternity, and it is with a sincere feeling of respect and thankfulness that this issue of the AGRARIAN is dedicated to THOMAS GREEN CLEMSON.—S. K. A.

We ruin the lands that are already cleared and either cut down more wood, if we have it, or emigrate into the western country... A half, a third, or even a fourth of what land we mangle, well wrought and properly dressed, would produce more than the whole under our system of management; yet such is the force of habit, that we cannot depart from it.

George Washington, "In His Letters".

OUR JUDGING TEAM

It has always been a mystery to me why a college of Agriculture can't pitch in and support a team that brings as much desirable publicity to Clemson as the Judging Team does. If it wasn't for the untiring efforts of a member of the Animal Husbandry Department faculty, and the willingness of six or eight cadets to devote almost all of their spare time to preparation, we, an Agricultural College would still be in the dim, dark oblivion that all non-judging schools are relegated, when they are too lazy to get up a team.

Why can't we wake up to the fact that a team of this type brings attention to our school—the kind of attention of which we would be proud, is more than I can see. The AGRARIAN wishes the judging team to know that it stands behind them one hundred percent.

I Accept

It is with considerable gratitude and humility that I take up the pen from Frank Rogers, last years very capable editor—gratitude for being given the opportunity to serve the School of Agriculture and Education and humility because of the magnitude of the task before me. I shall endeavor to the best of my ability to serve nobly and well our many readers throughout the state. I shall try to do justice to the phase of the life that the "Agrarian" represents. It gives me a great deal of pleasure to know that I have a very capable staff to rely upon.

The faculty members of the School of Agriculture and Education have been more than kind in their wholehearted cooperation and desire to use the "Agrarian" to good advantage.

Likewise, the students should feel free to use the "Agrarian" in every way consistent with the best interest of the publication. Since the "Agrarian" is the official publication of the Agriculture and Education school, it has a duty to perform and cooperative students make possible the completion of that duty to the fullest extend.

-E. P. H.
HELPFUL HINTS TO OUR FARMERS

GROW MORE VEGETABLES

Vegetable growers of South Carolina are asked to grow more vegetables, and to increase their 1941 acreages to meet the farm defense goals which have been set as a part of the total defense program for the United States, says A. E. Schilleletter, extension horticulturist.

In discussing the vegetable goals, Mr. Schilleletter pointed out that everyone in the United States must be well fed if the nation is to make the most effective effort toward national defense. One of the health benefits of improved diets, he said, would be more stamina to stand up under the stresses of the times and particularly during the period of top-speed production of defense materials.

Vegetables—particularly leafy green and yellow vegetables, are the most important sources of energy and sound health, according to the horticulturist. An adequate diet for the people of the United States, he indicated, would require the production and consumption of more than twice the vitamin-rich vegetables produced annually between 1936 and 1940.

With more purchasing power available and the increased knowledge of the foods that constitute a healthful diet, it is expected that public consumption of vegetables will rise suddenly.

FOOD FOR FITNESS

Following the successful operation of its Better Farm Living train in September the Clemson College Extension Service had at the State Fair an exhibit consisting of much the same material and emphasizing better living on the farm, especially through the production conservation, and consumption of foods essential to make farm people healthier and more efficient for home and national defense.

The exhibit, which was in charge of extension specialist of Clemson and Winthrop Colleges, was a compact display of ideas, practices, and suggestions on better farming for better living. Food to feed the family, methods of producing, processing, and preparing it, with stress on adequate diets, was given major attention in the exhibit and demonstrations.

The government should help cooperatives that have the interest of many.

COOPERATIVES

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A co-op must have efficient management to be successful. Unless you have men that know their business, a co-op is usually doomed to failure. There must be a sufficient volume of business for it to have any success. The financing must be sound, and the members should be loyal. It must serve an economic need, and its records and accounts should be kept in a state that anyone can understand them. They must make every effort to have a product of the highest quality, and they should try to have a good business reputation. Every effort to handle as few commodities as economically feasible should be made by co-ops. Draw up in writing all agreements; this will save argument later. A co-op must pay its members the prevailing prices if they expect to hold their business long. The members should have a get together every once in a while so that a friendly atmosphere will prevail.

There has been much discussion whether or not the government should aid cooperatives. The only logical conclusion is that if they are willing to aid private business in the interest of a few,
Danforth Fellowship Trip

By W. M. Hobson, '42

Every year, the Danforth Summer Fellowship is awarded to a rising agricultural senior in 38 different agricultural colleges of North America. This fellowship includes a two weeks study in St. Louis at the Ralston Purina Plant and experimental farm and two weeks training at the American Youth Foundation Leadership Training Camp at Shelby, Michigan. The winner of the fellowship at each of the schools is selected on his scholastic record and his leadership in college activities. The fellowship is indeed something worth working for during one's first three years in college, and it is a challenge to all men in the school of agriculture to try and win.

This fellowship is made possible through the efforts of William H. Danforth, chairman of the board of directors of the Ralston Purina Company.

I, as the representative from Clemson, experienced one of the greatest four weeks of my life this past summer on the 1941 fellowship.

Imagine really seeing and, to some extent, understanding the "inside" of a big business, and in discussing it, getting opinions from thirty seven states and Canada. Well, that was our privilege during our study at the Purina Plant.

The first three days were spent on the Purina Experimental Farm about forty miles out of St. Louis. On the farm there are about 1500 head of livestock and 15,000 head of poultry. While at the farm, we donned work clothes and went out among these animals and learned how they are all used in various feeding experiments. Careful and detailed records are kept on all the animals, and accurate results are obtained. None of the results obtained are held secretive, but may be, and frequently are used by state experiment stations. Several unusual and interesting things we saw at the farm were a dog carried to the South Pole by Admiral Byrd, several chinchillas worth about $3,000 per breeding pair, fur bearing rabbits, mink, fox and martins. By the end of the three days, all the boys, called the "Danforth Fellows," were well acquainted with one another, and many great friendships were being made. While at the farm, the boys played soft ball games; one between the boys themselves, the east playing the west, and the other between the farm employees and the boys. The games were, in one respect, similar to an all-star game, because ten different states were represented on each of the boy's teams.

On returning to St. Louis, we took our first plunge into "big business." The "inside" was opened to us from every angle. Lectures were heard from the heads of the executive, research, marketing, advertising, financial, personal and legal departments. As in school, each lecture should have its practical period. So after each lecture, we visited the department just spoken about and saw its actual operations. For example, after the lecture from the personal director, we each were given a twenty minute interview with the director, to give us practice in applying for a job. We learned from the research department how a new product is perfected. From the advertising and marketing departmental heads we saw how this new product is introduced on the market, and the legal departmental head told of his many incidents of protecting in court the products or its name or package design.

The Purina Mill at St. Louis is one of their largest. We spent one morning on an inspection tour of this plant, seeing the process of feed manufacturing beginning with the sampling of grain still in cars, and going all the way through to where the bagged feed is again returned to a car for shipment.

We did not spend all of our time in the Purina Plant and Offices, however. One unforgettable day we were the guests of Swift and Company at the East St. Louis Stock Yards. During the morning, we had the opportunity to go with the livestock buyers as they went about the stock yards purchasing cattle, hogs and sheep. Each buyer would explain how he estimated his offer, and why he did or didn't buy a certain lot of cattle. During the afternoon, we made an extensive tour of the Swift Packing Plant. Another morning, we visited the St. Louis Grain Exchange. There we had the opportunity to ask endless questions about the marketing of grain on the market. We spent the remainder of this
day as guests of the Chamber of Commerce. As their guests, we visited such historic and interesting spots in St. Louis as the oldest court house west of the Mississippi River, the Shaw Botanical Gardens, the Jefferson Memorial, the St. Louis Zoo, and radio station KMOX.

Quite often Mr. Earle Sindecuse, the gentleman in charge of the Danforth Fellows, arranged entertainment for us which we knew nothing of and which always came as a pleasant surprise. Two such occasions were an airplane tour over St. Louis one night, and a trip to the internationally known St. Louis open air Municipal Opera to hear "The Merry Widow."

Reluctantly the boys bade farewell to St. Louis and yet looked eagerly forward to the coming two weeks at Camp Miniwanca.

On the trip from St. Louis to the camp, the first night was spent in Chicago. There the boys were free to do what they wanted to. Most of them visited the Aquarium, the Planetarium, Soldiers Field and the Field Museum.

The second night was spent at the Battle Creek Sanitorium. No, we were O.K; but we did discover a wonderful place to go should we ever have the need of a bit of quiet relaxation under a doctor's care. Before leaving Battle Creek, we toured the Ralston Purina Cereal Plant located there, and saw the manufacturing and packaging of their breakfast cereals.

At Camp Miniwanca there were some 350 campers and leaders, each outstanding in one or usually several respects. Practically every state in the Union was represented as well as Canada and England.

At the camp, not a moment in the day which began at 6:30 with a cold dip into Lake Michigan and ended with Taps at 10:00, was "labeled idle." Every activity was carefully planned and ran according to schedule. The theme of the camp was four-fold leadership development. Classes in leadership training and successful living began at 8:30 and ended at 3:00 with a break for dinner at 12:30.

Mr. Danforth's motto, "My own self at my very best all the time," was quickly adopted by all the members of the group.

Each afternoon was spent in playing softball, soccer, and volley ball followed by swimming or boating on Stony Lake and Lake Michigan.

Following supper, as sunset was approaching, the entire camp silently climbed to the top of Vesper Dune, a large sand dune overlooking Lake Michigan. There a short vesper program was presented. Sail boats and steam ships could be vaguely seen on the horizon as the sun settled into Lake Michigan and the red glows of a beautiful sunset faded from our sight. This was indeed a perfect place for spiritual meditation.

This brief surmise of camp life has illustrated three phases of the four-fold development, namely mental, physical, and religious. The social or fourth phase came each night after vespers. There were beach parties, council meetings, camp singings, and a barn dance where half the boys were dressed as girls.

After each of these action packed days, everyone was ready for bed when Taps was blown at 10:00.

All good things must end sometime. Too soon did our month of fellowship come to an end. All the boys agreed that, in many respects, our trip and the things learned and experienced on it were worth a year in school. We each had been "dared" by Mr. Danforth to live tall, think tall, stand tall, and smile tall. As we departed, we all had the determination to do our very best all the time to live up to this challenge.

Each summer a freshman in these same Agricultural Colleges is awarded a half fellowship to attend the camp. I myself, dare all men in the School of Agriculture to win these fellowships.
Who Should Be Dairymen?

By CHARLES JAMES III, '43

To be a successful dairyman one must be willing to work early and late. It isn't a job for a man who isn't a steady willing worker.

Many "cotton and corn" farmers in South Carolina are now realizing that they must change to a different form of agriculture in order to receive the maximum profits from their land. Some favor poultry keeping, others the raising of beef steers and hogs, while a great many agriculturists consider dairy farming the most suitable occupation for their own surrounding conditions. This article is intended for those interested in becoming dairymen.

Any person contemplating going into dairying should by all means study the factors which will influence his future favorably or unfavorably.

First of all, is there a satisfactory market for dairy products? Milk can be sold wholesale or retail, to ice cream plants, creameries, condensers, cooperatives, and cheese factories. If one wishes to sell wholesale, he will receive higher prices. However, an added amount of capital must be available for the necessary labor and equipment required for pasteurizing, cooling, bottling, and delivering the milk.

With the modern systems of refrigeration and transportation, it's possible to ship dairy products long distances without any noticeable depreciation in quality. In many instances, good transportation is unavailable, and the market is not conveniently located; therefore, it would be unwise to decide on dairying if this particular condition exists.

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DAIRYING EQUIPMENT AND METHODS

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Good dairy plant equipment operated by capable men who are using good common sense methods of sanitation can and does produce a product highly desired by the public. Neither the equipment nor the methods can accomplish the task alone. It is the purpose of the modern dairy products plant to combine these two indispensable phases in the output of a product which will give merit to the progress of the dairy industry.
The GOLDEN Year in Farmpower

A Welsh-born boy entered the Case factory as a machinist apprentice at the age of 16. Six years afterward, in 1892, he helped build a Case tractor—the first gas-engined tractor of record to go out and do actual farm work. Later he went abroad, studied what the Old World had created in large-size internal-combustion engines, returned and designed blast-furnace waste-gas engines used to this day in steel mills. Returning to Case in 1910 he rose steadily to the rank of Vice-President in charge of tractor engineering. Now, on the eve of the company's centennial and the golden anniversary of its first farm tractor, David Pryce Davies is Consulting Engineer for all Case factories.

The American Way is to Keep Frontiers Open

Your chances for rising high in America are greater than D. P. Davies ever had. You enjoy the benefits of native birth and of more formal education than ever was his. You live in an age when science and engineering, agriculture and industry all leap forward. Before your eyes new frontiers unfold far faster than they did for the youth of fifty years ago.

Yet to find your full place in this rich future you need two things that Mr. Davies had. One is the individual will to work with whatever talent and training you have. The other is the full freedom of the American way... the warm welcome that free enterprise gives to a better man, a better method, a better machine... the system that stimulates men to create ever richer blessings for their fellows, and rewards them according to their creations. By this principle of unlimited opportunity, a single century sufficed to transform a wilderness into the greatest nation on earth, to attain the highest living standards in all the history of mankind.

Today, youth's fight is for freedom of the frontiers. Today, as a century ago, Case is on the side of youth. In farmpower the Case challenge to your choice is based not on having built the first tractor, but on building the latest tractors; not on seniority, but on superiority. J. I. Case Co., Racine, Wis.
The Condition of Our Forests

By T. V. Wilson, '42

In the midst of a spending spree, let's not waste our most valuable resources—our forests . . . .

When the pioneers and early settlers started moving west on the so called “Gold Rush” they found the land across which they traveled densely settled with forests. But since that time lumbermen and farmers have gone in and literally destroyed many forest by trampling and breaking many small trees just to get the larger ones cut. That was the type of person who could not see any further than the end of his nose. He lied plenty so why take care to not destroy the smaller trees? His attitude was “let the future generations look out for themselves, I have all that I want.” Due to the attitude, and too, due to ignorance in some cases, much of the Souths best forest were destroyed. This type of destruction not only reduces the source of lumber and many other wood products, but it also leaves the land in the worst condition it could possibly be left in. This is especially true in the hilly sections of the South where tons of good productive soil is washed away yearly. Another cause of reduction in forest area is due to fires. In the past forest fires were much more numerous than at the present time. There was plenty of timber land so the people naturally weren’t as careful as they would have been if less wooded areas were present.

Well then you may ask, is any measure being taken to correct this great mistake? Yes, work was really started on a plan about the end of the first world war, and as time passed more and more work was devoted to forestry programs. Since 1919 the total amount of forest land in the South has declined only about 2 percent. Better than that, certain counties in South Carolina have increased in wooded area as much as 25 percent. However, taking the whole state, the change is very little. The total forest land in South Carolina in 1919 was 12,392,700 acres; In 1934 the acreage was 12,877,715. This shows a slight increase as compared to a decrease in all other southern states except Georgia which also showed very little increase. To the above figures should be added 437,088 acres of so called crop land which needs restocking. Most of it is too poor or infertile to grow anything but trees.

Even with the present acreage of forest as low as it is, the most important problem is not to reforest so much land but to exercise maximum care in proper management and maintenance of our present forest.

Perhaps the most evident loss annually is due to fires, however, this figure in South Carolina is much lower than that of neighboring states. It is three percent while some states reach as high as twenty-five and thirty-three percent. The United States forestry service has done much to control fires by placing fire towers and ranger bases in different sections of the state. Also the civilian conservation corps has rendered excellent service in controlling fires.

Although fires are more vivid, the greatest destruction to forests is the problem of poor management or the lack of management. Most of the owner of forest do not know how to get the best cut of their wooded areas over a period of time. It is true that they do not know which trees to cut for best results, nor do they know how thin the trees should be left. That is where the forests service enters—trying to educate the farmers so better management will result and timber production will be substantially increased in the future.
WHO SHOULD BECOME DAIRYMEN

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A profitable dairy farm must be situated in a section where the climatic conditions are suitable for raising a healthy, productive herd. It should be large and fertile enough for the growing of sufficient pastures and feed crops. The size and fertility of the farm will largely determine the number of cattle that can be maintained.

Dairying is one farm enterprise which requires more capital than other forms of agriculture. Buildings, equipment, and the herd represent the three major expense items. Unwise expenditure will result in failure for the operator.

Most dairymen find it necessary to have a dairy barn, milk house, silo and a place for the storage of hay, grain, and bedding. A place should also be provided for sheltering the bull and young stock. In many instances the buildings occupying the farm can be remodeled for the dairy.

The man contemplating dairying has to use a great part of his funds in buying a foundation herd. Only those cows which are healthy and are good producers should be purchased. The bull is a most important part of the herd and should be selected with the utmost of care. It's much wiser to start with a small herd which is known to have many favorable qualities than to start with a large herd which is 'scrubby.'

Equipment for the dairy should be selected on the basis of durability, providing comfort and health for the animals, convenience of performing work, and producing clean milk. It's not necessary to secure all the elaborate equipment to start a dairy. For example, a farmer can milk a small herd by hand, although a milking machine will prove very beneficial when he has the proper funds to secure one.

After the prospective dairymen has thoroughly investigated his capital and land resources, he should be sure he likes the dairy cow enough to work for her every day in the year. Of course, some dairymen find they can obtain competent substitutes for vacation time and holidays.

In conclusion, it can be said that dairying is a farm industry that protects the land from excessive erosion, keeps the land fertile, furnishes year around labor, and returns regular cash receipts. Intelligent planning and management of the dairy will result in success for the operator.

SOIL DEPLETION

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soil increasing its permeability and allowing the water to soak in more rapidly, with a resultant decrease in run-off and erosion. The turning under of the cover crop as green manure results in increased yields of succeeding crops; however, it is often necessary to add nitrogen to the soil to facilitate decay if the cover crop is a non-legume.

Many crop rotations have been planned for southern agriculture, but their general adoption has been slow. Southern farmers know that the addition of large quantities of vegetable matter to the soil is a major factor in rebuilding and maintaining its fertility, and until they develop cropping systems to this end, soil depletion will not be checked.

GUEST EDITORIAL

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the farmers interest at heart. They must work together and towards the same end.

The State Department of Agriculture has a very definite part in this picture and it is our desire to work cooperatively with everybody and every group, looking towards a better agriculture for South Carolina. Let us all get together for the public good and for our own benefit and to all we say we want to work with you and want you to work with us because we are of “one nation—indivisible, with liberty and justice to all.”

Dr. G. H. Aull, Dr. W. T. Hicks and Mr. O. M. Clark represented Clemson College at a regional agricultural planning conference in Asheville, North Carolina on June 16-19, 1941. The conference was attended by representatives from eight southern states and was for the purpose of summarizing recommendations of state agricultural committees and of formulating additional recommendations designed to influence national policy with respect to agriculture.
Mr. H. C. Hahn's pure bred Hereford cattle graze in fine pastures, kept in fine shape by use of Tennessee Basic Slag.

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Says H. C. Hahn, Highland Farm, Aiken, S. C.

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against nature, for nature would prefer our soils to be covered with timber.

Williams: You know, Dr. Collings, I had never thought of that but since you mention it I recollect many good pasture areas in my community that have been ruined by pines and other young tree growth and such.

Collings: Not only are our soils timber soils, but many of them are so poor they are unable to produce good grass. It's not generally known, but probably because our soils are timber soils we do not have a single native pasture that is worth a continental. All of our good pasture grasses have been imported, and imported plants nearly always require the best land for their successful production. For this reason, Mr. Williams, the best pastures are always secured on the best land. Many farmers fail to produce successful pastures because they select the poorest land on their places for pasture land.

Williams: You are certainly right there, Dr. Collings. My neighbors take their best land for cotton and the poorest land for pasture. They have just what you called it a while ago, an exercise lot but not a pasture.

Collings: Not only will the best pastures be produced on the best land, Mr. Williams, but even the best South Carolina pasture land needs to be fertilized. Most South Carolina soils are generally very deficient in phosphorus and calcium, and sometime nitrogen and potash also are required. Two to four hundred pounds of superphosphate per acre applied every three or four years should, in most cases, take care of the phosphorus needs of pasture grass. This seems to be an essential in good pasture management for all parts of the state. In fact, this treatment alone would probably rejuvenate many South Carolina pastures.

Williams: But, Dr. Collings, I have heard our county agent stress the need for liming. He says that more than half the land in South Carolina is too acid to grow profitable crops.

Collings: He's right, Mr. Williams; I was just coming to that. The application of superphosphate must go hand in hand with the application of lime. The soils of South Carolina are notoriously acid. The yields of nearly all crops grown in the state are not as good as they should be because of soil acidity, and pasture crops are no exception. Any program of pasture improvement in South Carolina must give first consideration to liming. An initial application of a ton of lime to the acre, followed by other similar applications every three or four years, should be made with the object of bringing the reaction of the soil up to pH 6.5 and maintaining it at about that point. There is no question but that the application of lime and phosphate is the key to successful pasture fertilization in South Carolina. As a result of this method of treatment, there are a number of pastures in South Carolina that now have a greater livestock carrying capacity than many pastures in the Blue Grass region of Kentucky.

Williams: Dr. Collings, you haven't said anything about pasture grasses. Will blue grass do well in this state or have we better stock to Bermuda grass?

Collings: Stick to the Bermuda grass, Mr. Williams. It's the foundation plant for good South Carolina pastures. Blue grass, red-top, orchard grass, and other grasses which are adapted primarily to areas north of here, will not hold up in this state. Carpet grass may also do exceedingly well, especially on the soils of the Coastal Plain. However, carpet grass will not make the yield of nutritious pasturage that can be expected from Bermuda grass. It is well to have some Dallas grass mixed with Bermuda but even if this grass is not planted it will establish itself in most Bermuda sods if the acidity of the soil is kept low. The liming of a pasture nearly always results in an increase in Dallas grass.

Williams: Well, what about legumes in the pasture?

Collings: Mr. Williams, pastures should contain legumes if they are to produce the most nutritious feed. For this reason every effort should be made to secure a good stand of legumes. Pastures should never be burned for there is no more efficient method of getting rid of legumes than by burning. And then, in addition, fire will reduce the yield of the grasses that do survive, so fire should be avoided like the plague.

Williams: Dr. Collings, what legumes are the most satisfactory for South Carolina pastures?

Collings: It is difficult to keep legumes in South Carolina pastures unless the acidity is naturally low, as it is in the Iredell family of soils, or unless the acidity has been reduced by liming. When the acidity is kept low, about pH 6.0, and when phosphates have been added, no difficulty should be experienced in maintaining a stand of Dutch clover and lespedeza, and in
most cases, hop clover should be abundant in the spring. This is especially true where applications of barnyard manure have been made from time to time.

Williams: Then, Dr. Collings, from what you say can I conclude that most South Carolina soils can be made to produce good pastures if given proper fertilization and proper pasture management and that some South Carolina soils are ideally suited for this purpose?

Collings: Yes, Mr. Williams, good pastures can be produced and what is more, are being produced in South Carolina. As a result, more livestock can and will be grown in South Carolina. As a result, more livestock can and will be grown in South Carolina and a better balanced system of farming obtained for the farmers of the state.

Mr. Williams: You mentioned that the Iredell family of soils were not very acid. Where are these soils found and are they good pasture soils?

Collings: They are among the best pasture soils we have, Mr. Williams, and when well drained are also excellent for other crops especially the legumes. The Iredell family of soils is found scattered all over the Piedmont but particularly through the central Piedmont. These soils might be called livestock soils because they are capable of producing such excellent hays and pasturage. Eventually a profitable livestock system of farming will, no doubt, develop on the soils of the Iredell family. Much of this land can now be bought at prices below its actual value because its value is not generally realized.

IS FARM YOUTH DETERIORATING?

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land and the principles upon which it is built. No great show of flag-waving is made, but when they say, “I pledge allegiance to the flag of the United States of America and to the Republic for which it stands, one nation, indivisible, with liberty and justice for all”, you may rest assured that each word comes from the heart, sincerely and without reservation.

And as for how these boys stack up against their elders, let me cite the case of one boy who applied for and received his American Farmer degree at this convention. He has competed against adult, professional swine breeders and has come out ahead of them more often than they ahead of him. As well as the author remembers, the record for which he was trying has been reached sixteen times, four of these times by this mere slip of a boy. That speaks well for farm youth.

There are countless other cases, too numerous to mention here, in which the American youth of today has proven his true mettle. It is hard to believe some of the records these boys have made but they are indisputable.

The farm boy of this country seems to have ignored or overcome the bad in the nation and is striving to make better the good he has found. For this reason, when some wiseacre says to me, “The youngsters of today are softies. They ain’t the man we were at that age”, I raise an eyebrow, give them a condenscending smile, and reply, “Look at the record, brother, look at the record.”
Let Us Be Thankful

By E. P. Huguenin, '42

We honor the holidays with many worthwhile ideas. We underline the occasion in red on the Calendar, plan it down to the last cranberry, and then settle back on our haunches in anticipation of the feed to be had. Minute issues may divide us, during the year—we seldom see eye to eye on politics, which color Mary’s dress was, or what to have for Friday’s supper. But with Thanksgiving, we rise above our small and petty differences, to find that we all have a common share in that old favorite, Thanksgiving Gratitude.

It is interesting to read what Edward Winslow, three times governor of Plymouth Colony, wrote to a friend in 1621. “We set the last Spring some twenty acres of Indian corn and sowed some sixty acres of barley and peas; and according to the manner of the Indians, we manured our grounds with herrings or rather shads, which we have in great abundance and take with great ease at our doors . . . . Our barley did thrive well; and, God be praised, we had a good increase of Indian corn . . . . Our harvest being gotten in. Our Governor sent four men on fowling, that so we might, after a special manner, rejoice together after we had gathered in the fruits of our labor.” Those colonist planned, worked and reaped a harvest which meant the difference between life and death. Their’s was a victory over starvation.

Beset on either side of our oceans by strife and hate, let us look to our blessings and be grateful. We have spent a year of living, we have a personal harvest to reap. Let us look to the future and plan the next harvest with the earnestness with which those pilgrims planned our “First Thanksgiving.”

**KUDZU PLANTS**

In less than a decade kudzu, introduced from Japan some fifty years ago and commonly called a porch vine, has been transformed into an important field crop in the Southeast. Since the beginning of erosion control projects, more than 40,000 acres of eroded land have been planted to this one ornamental plant.

Kudzu is adapted especially to Southeastern soil and climatic conditions and is not affected seriously by droughts. It will not grow well, however, on poorly drained areas of acid soils or on low marshy lands. The plant is a deciduous, viney legume which grows rapidly during spring and summer. Kudzu restores fertility to the soil by adding organic matter and nitrogen, and it maintains a stand over very long periods without yearly replantings.
Modern war is a battle for materials. To check the life-giving flow of materials, British warships ring the European continent while German bombers and submarines encircle Britain.

Beyond comparison, the most vital of materials is food. Unlike steel or copper, aluminum or rubber, food has no substitutes. We have it or we do not have it. With it, all things are possible. Without it, tanks and planes can give no security. If the defense of America is to be certain, food for 130,000,000 Americans, and those who stand with us, must come regularly to market.

Today, as always, the production of that food is the task of American farmers. Today, more than ever, American farmers are relying on the farm equipment industry to provide them with the mechanized tools of agriculture. For, while the need for farm products rises, the supply of farm labor constantly dwindles as men are diverted to the Armed Services and the factories.

This Company and the industry of which it is a part have the factories, the trained employees, the engineering skill, and the distributing organizations to get these vital tools to the farmers of America where they need them and when they need them—subject only to the allocation of materials.

Swords are beaten into plowshares when peace follows war. Today, throughout the world, plowshares are beaten into swords... In America, the greatest food-producing country in the world, it is well to consider that plowshares are swords!

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