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The Bobbin and Beaker Vol. 10 No. 2

Clemson University

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THE BOBBIN AND BEAKER
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POLICY— The views and opinions expressed in all guest articles are those of the writers themselves, and must not be construed to necessarily represent the views and opinions of the Editors of this magazine or of the Faculty of the Clemson College School of Textiles.

THE BOBBIN AND BEAKER is a non-profit magazine organized to serve Clemson students and the textile industry. The publishing and circulation costs are financed solely through proceeds received for advertisements. We ask our readers to consider favorably our advertisers when buying.
The function of our textile school is first and foremost to train men and provide graduates fitted for the best possible service to textile industry. We take some pride in the fact that throughout the history of the school there has always been a greater demand for our men than we could meet. This has been true especially since the war due partly to the fact that all the schools, having reduced enrollment during the war had a backlog, so to speak, to catch up when the war was over.

A second reason for the demand was that both before and after the war the industry was increasing its percentage of college trained men. As would have been expected, the peak demand came the second and third years following the war, at which time we had calls for at least five times the number of our seniors. Then for two or three years the requests for men fell off somewhat, though still exceeding the supply. About a year ago we again had a surge of requests three or four fold larger than we could sat-
The personnel manager of one larger company stated that he was looking for approximately one hundred graduates from the several textile schools, and all this semester we have had two or three companies per week seeking our graduates.

This tremendous call for men is certainly gratifying, though surprising, in view of the concurrent slump in textile markets and production. However, we believe the mills are making a wise move by increasing rather than decreasing their trained personnel, even when business is (we hope temporarily) somewhat slack. It may mean that the mills expect soon to again be on capacity production and are getting their personnel in advance of a greater need, or it may mean that the industry on the whole feels that it will require a better trained staff to survive heavier competition from both domestic and foreign industry. There may be many other causes for the present demand for men and we at Clemson have special reason to know that the industry is realizing more and more the importance of the textile schools. I refer specifically to our recent expansion program, which was made possible mainly by contributions from nearly every phase of the industry.

Our textile school has a secondary "product" that is growing in importance year by year. I refer to the increasing amount of research done by our staff and graduate students. Over the recent years the projects have included some new dyeing formulas for synthetics, new sizes for spun nylon, several new testing machines and more than a dozen machine improvements. Several research projects on special cottons have been completed for the government. The mills are more and more frequently showing interest and making use of this research. A number of companies are employing the school to do special research on their materials.

For the last several years the school has had staff members working on task groups of American Society for Testing Materials, and taking part in several other textile associations. All of this work inspires a research attitude in our staff and students. I am happy to say that for our output, either of graduates or of research, we are gratified at the industry's demand and will strive to meet it with an ever improved product.

Funny people, these Americans. They take a glass, put sugar in it to make it sweet, lemon in it to make it sour, fill the glass with gin to make it hot, add ice to make it cold, then say "here's to you" and drink it themselves.

SPRING 1951-1952
Comments on the Results of the
17-Mill Test on Ginning Procedures

by Walter Regnery

Very important to the textile industry is the report recently published by the National Cotton Council giving the results from actual mill tests of spinning and weaving of cotton ginned under five different conditions in order to ascertain what ginning procedures are preferable. I urge the reader to get the full report. Here I shall give some observations which show the importance of this report to the industry.

WHY THE TEST WAS RUN

"Mechanization of the cotton industry has been accelerated, due in part to a shortage of labor. These rapid changes have increased the problems of gin machinery manufacturers and the cotton mills, as well as those of the farmer. Mechanical harvesting is one of the most important time and labor-saving developments in the cotton industry, and yet, from its use, a number of serious difficulties, both to the ginners and spinners, have arisen. Mechanically harvested and snapped cotton contains a much greater proportion of leaf and stem fragments than hand-picked cotton from the same fields, and is correspondingly harder to clean. Ginners are, therefore, confronted with the problem of removing the excess trash without damaging the fibers. Moisture is added to the cotton picked by spindle type pickers and shortage of labor frequently results in a poor quality of handpicking. To meet this need, new types of cleaners and new ginning techniques have been developed.

"Cotton gins were, until mechanical harvesting was introduced, simple plants. Dryers were added to facilitate cleaning, and additional cleaning equipment was added to improve ginning performance. More recently, lint cleaners were added to extract trash from the ginned lint.

"Many spinners have claimed that while the grade is improved by these new ginning practices, the cotton is damaged to the extent that spinning performances and quality of the finished products are adversely affected. Independent mill tests have indicated that the quality, or spinning value, of the cotton is affected in ways that are not easily detected by the usual cotton classing techniques. In certain of these mill tests, sampling and ginning procedures were not sufficiently controlled to isolate the causes of the damage.

"The USDA reported improved grades without damage to the cotton when its experimental lint cleaner was used in combination with a limited amount of seed cotton cleaning machines. For all of the USDA experiments, there was an average increase of 2 nepes per 100 square inches of card web, which was interpreted to be insignificant. The USDA studies, however, were done on a small scale and were more closely controlled than in commercial gins; therefore, comparable results on commercially operated gins were deemed necessary. The small increase of 2 nepes/100 square inches of card web may be important in the manufacture of certain fabrics, even though statistically it was not considered to be significant. The pressure of above average nepes in the card web and below average yarn appearance grades are indications of difficulties to be expected in dyeing and finishing the fabric.

"The USDA tests showed further that a fast rate of feed combined with the saw-cylinder lint cleaner produced a substantial increase in the number of nepes per 100 square inches of card web. It was concluded that rapid feeding of the cotton in combination with excessive drying and overhead cleaning not only lowered the spinning quality of the cotton, but failed to improve the grade.

"A study was undertaken, therefore, to investigate on a commercial scale the effects of the use of certain ginning machines and variations in ginning operations on the spinnability of the cotton and the quality of the finished product. Representatives of each branch of the cotton industry, with the cooperation of interested governmental agencies and gin machinery manufacturers, set up this experiment to supplement the previous tests by commercial mills and the USDA. The cooperators in this present test are listed elsewhere in this report. The National Cotton Council acted as a liaison for the entire group and with the aid of the American Cotton Manufacturers Institute, Inc., served as a clearing house for assembling the data. The report was written with the aid of the Technical Sub-Committee.1

Mr. Walter Regnery is vice president of Joanna Mills, Joanna, South Carolina.

THE BOBBIN AND BEAKER
PROCEDURE OF TEST

"This report presents the results obtained from a large scale investigation of the effects of various mechanical operations and practices in cotton gins upon the spinning characteristics of the fiber and upon the quality of the finished fabric. The tests were carried out under commercial production methods in six gins, two each of three makes, and in 17 mills in which a great variety of equipment was used. The ginning tests were carried out in two main areas of the Cotton Belt, and in each area three pickings were made, one being hand-picked and the other two harvested by spindle type pickers, for each of the three makes of gins. Enough blended seed cotton was secured at each gin to produce 25 bales of lint cotton. At each gin five test runs of five bales each were made in accordance with the following schedule:

1. Without modification of the usual practice, so-called "Normal" ginning.
2. As in (1) except at a faster rate.
3. As in (1) except the overhead cleaners were bypassed.
4. As in (1) except the lint cleaners were by-passed.
5. As in (1) except at a higher temperature."

I believe graph 1 shows the significant results of this test. To a print cloth mill, neps are one of the most important quality factors in their finished cloth. It is a factor that many times is responsible for cotton cloth losing its place in the market to synthetic fibers. Any improvement here, then, to any segment of the overall cotton producing or manufacturing organizations should definitely help either to hold the present market or increase the consumption of cotton. You will note on graph 1 two plots of nep results from these tests, one showing neps in dyed cloth, the other, neps in the mill card web, all of which results were made by one man at the USDA Laboratory.

Test four, where the lint cleaners were by-passed or where the cotton received the least amount of machining at the gin, gave a marked reduction in neps at the mill. In the case of the neps in card web, the count was reduced from 102 for normal to 76 in test four, a reduction of 25.5 percent or from 96 in test 5 with excessive drying to 76, a reduction of 20.8 percent. The neps in the finished cloth were reduced to 96 in test 4 from 105 in test 1 (or 8.6 percent) and from 115 in test five to 96 (or 16.5 percent). In other words, the tests show that a reduction in neps of 25.5 percent in the card web or 16.5 percent in the finished cloth can be made at the mill level by gin procedure.

The reduction of 25 percent in the card nep count is very important to all concerned in our industry, and this improvement would be most difficult to get in any other way. For the mill to get this reduction, they would have to card at a slower rate. The average carding rate for the 17 mills was 9.5 pounds per hour. To reduce the nep count 25 percent would estimate, from tests that have been run in carding rate vs neps, that this would have to be reduced to 7 pounds per hour. In the case of a 100,000 spindle print mill this would mean the addition of 80 cards, with an investment cost of $320,000. These extra cards would cost the mill about $25,000 in additional direct labor cost per year to operate. In other words, the ginners should use great caution in either over-dying or overmachining the cotton, as it well might add so much to mill costs or add so many neps to the finished product that cotton will be replaced by synthetic fabrics.

(continued on page sixteen)
LINTHOUSE PERSONALITIES

By Inman Howard ’33

PROFESSOR A. E. McKENNA

Those who dare enter the Textile Building for any purpose are bound to get a glimpse of Dr. McKenna going about his business. If you want to catch him for something, I suggest you get a bicycle or head him off coming down a narrow hallway. Dr. McKenna’s job as the Head of Weaving and Designing Department and teaching Warp Preparation has its many duties which make him a busy man.

Mr. McKenna was born at Barrington, Rhode Island. He is married and has a daughter attending Montreat College at Montreat, North Carolina. After finishing Leander Peak High School, Barrington, Rhode Island in 1919, Mr. McKenna entered Rhode Island School of Design and received his diploma in Textile Design in 1922. Desiring to get into industry led to employment with Mount Hope Spinning Company at Warren, Rhode Island. Leaving this organization he went with the Warren Manufacturing Company of Warren, Rhode Island and then to Houston Cotton and Twine Mill, Houston, Texas enriching his practical experience at each. Desiring to further his education, during his employment at the Warren Manufacturing Company in 1923, Mr. McKenna entered the Bradford-Durfee Textile School, which is now Textile Institute located at Fall River, Mass., completing a course in Spooling, Warping and Slash ing for thirteen weeks, two evenings a week.

Having been born in the North, Mr. McKenna knew what it was like; having been in the South west he knew what it was like. Deciding there must be a better place than these he came to Clemson, South Carolina in September 1925 as Instructor in the Weaving and Designing Department and has been a resident of Clemson since, with minor interruptions.

In 1930, Mr. McKenna took leave of absence for a year and completed requirements for a B.S. degree in Textile Engineering here at Clemson. From 1930-33, while teaching during regular semesters at Clemson, Mr. McKenna attended the University of Tennessee during summer sessions and received a Master of Science degree.

Professor McKenna has taught many subjects in Weaving and Designing. His present course in Warp Preparation is a very important course as we all know or have been told that the warp has to be properly prepared for best results in weaving.

In addition to teaching, Professor McKenna is co-author and author of several articles for Rayon Textile Monthly. Among those of which he is co-author are: Leno Weaving and Design, 1934, and Weaving Fancy Meshes on the Slotted Steel Doups, 1934. He is author of the following: Methods of Englarging Jacquard Designs, 1931; Dobby Design, 1932; Woven Tucks, 1933; Leno Weaving With Two Crossing Ends, 1933; and Multiple Cams, 1936. Articles which appeared in Textile World of which Professor McKenna is author are: Two sets of Doups, 1941; and Yarn Diameters, 1946.

He is active in several clubs and fraternities, including Iota Lambda Sigma, Phi Psi, Masons, American Association of Textile Technologists. He is also Governor of South Carolina Society Mayflower Descendants.

Angry father to son: “Why don’t you get out and find a job? When I was your age I was working for $3 a week in a store, and at the end of five years I owned the store.”

Son: “You can’t do that nowadays. They have cash registers.”

THE BOBBIN AND BEAKER
Mr. Tarrant, better known as Crowfoot, was born at Piedmont, S. C. After finishing high school and desiring to further his education, he looked over the school situation for the best one and decided to enter Clemson College from which he graduated with a B.S. degree in Textile Engineering. While in college, Mr. Tarrant worked in the weave room during summer vacations in the following mills: Piedmont, Dunean, and Watts. After graduation, Mr. Tarrant was employed by the Graniteville Mill obtaining experience in carding and spinning. He returned to Clemson in 1928 as instructor in the Weaving and Designing Department.

In 1930, Professor Tarrant left Clemson for a position as head of Weaving and Designing Department at Alabama Polytechnic Institute at Auburn, Alabama. During his stay at Auburn, he taught loom fixing in the summers at the near-by Pepperell Mill.

In the fall of 1936, Professor Tarrant returned to Clemson as Assistant Professor in the Weaving and Designing Department. While teaching at Clemson he entered Pennsylvania State College in the summer months and graduated with a Master's Degree in Education. Utilizing all available time, Professor Tarrant again broadened his practical experience by employment at the Newry and Inman Mills during summer vacations.

In 1942 Mr. Tarrant was called into active service as First Lieutenant in the Air Force. While in service Lt. Tarrant taught academic subjects in Preflight School and served as a Vocational Guidance Officer at a separation center. After release from the service, Mr. Tarrant returned to Clemson in the Fall of 1946 where he has remained since. At present, he is teaching Dobby and Box Loom Mechanisms, Fabric Design, and Warp Preparation.

He is Commander of the American Legion Post at Clemson and a member of several clubs and fraternities. Among these are: Honorary member of Phi Psi, member of Sage Club, and Iota Lambda Sigma.

Professor Tarrant is married and has two children. A daughter, Carolyn, is a student at Winthrop; a son, Edward, Jr., is a student at Calhoun-Clemson High School.

A little boy wanted $100 so he decided to pray to God for it, since everyone said He always granted one’s wishes. He prayed every night for two weeks, and still no $100. Then he decided to write God a letter about it. When the postal authorities received the letter, they didn’t know where to send it so they forwarded it to the President. After due course the President read the letter, chuckled and told his secretary to send the boy a five dollar bill, as that would mean a lot of money to the child. When the boy received the money, he was delighted and wrote God another letter thanking Him for his prompt reply and said, “I noticed that you routed your letter through Washington and as usual, those crooks deducted 95 per cent.”
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A. E. STALEY MANUFACTURING COMPANY
DECATUR ILLINOIS
You Must Create Interest in Safety

By W. Bratton Williams

Clemson College Textile School, Clemson, S. C.

Every year in the United States approximately 18,000 people are killed while at work. At the same time approximately 2,000,000 people receive some form of injury while at work. During the first year of the Korean war, we had approximately 9,000 men killed in action, while our total casualties killed, wounded, and missing in action totalled about 78,000. Also, during that first year here in the United States, in all forms of accidents, there were approximately 10,000,000 injured and 95,000 killed. According to these figures, it is safer to be on the Korean front than it is to be living within the peaceful bounds of the United States.

Only last week I read in the papers, and this came from the National Safety Council, there were 3560 people killed in motor vehicle accidents in the United States during the month of August. This is the highest monthly toll on record for any one month with the exception of August, 1941, when almost 3900 were killed. Highway safety has become one of the most serious problems facing us today. Will our killed and injured continue to increase in number or will we become better educated in safety?

You must create interest in safety. You must educate your people in safety.

Why should we be so vitally interested in accident prevention? "Am I my brother's keeper?" The two basic reasons for accident prevention are the humane reason and the economic reason. We do not like to witness physical human suffering, therefore, the basic reason for accident prevention is the humane basis.

Accidents don't happen, they are caused. Then the way to eliminate accidents is to discover and eliminate the causes. We are taught in safety engineering that all accidents fall under three causes: (1) Unsafe conditions; (2) Unsafe acts of persons; and (3) Acts of God. The first two causes are man-made and can be controlled by man and 98 percent of all accidents fall under the first two causes or a combination of both. The third cause, Acts of God, are responsible for about 2 percent of our accidents such as lightning, floods, tornadoes, and over these we have no control. What, then, is your part in accident prevention? Recognize and eliminate unsafe conditions and unsafe acts of persons. The second cause, unsafe acts of persons, is far more difficult and far more important.

It is too late to eliminate unsafe acts of persons after the unsafe act has been performed and the accident has occurred. It is far more important to train your people to be safety conscious and accident minded so that they will anticipate and not perform the unsafe acts.

What is safety education? According to one expert, it is the process of imparting knowledge of safe and unsafe conditions and of safe and unsafe acts of persons.

Men in industry have responsibilities for production, cost, quality, waste, etc. During the past few years, men in industry have assumed another responsibility, that of safety. This is becoming more and more important and I am glad to see more emphasis being placed on safety than ever before in the history of the country.

Thousands are being born every day and these same thousands as they grow up, must receive public school education and training if they are to grow up to be useful citizens in this great land of ours. Public schools throughout our country teach health education. The purpose of this is to help eliminate sickness and death from diseases. Likewise, I believe that it is just as important that public schools and colleges throughout the land should teach safety education. Is not this just as important as health education?

You have heard of the three E's of safety: Engineering, Enforcement, and Education. You cannot create safety by mechanical guarding or by enforcing rules. You must educate for safety. You must create interest and enthusiasm for safety.

(continued on page eighteen)
"Mr. Whit" and "Mr. John" Retire After Total of 75 Years of Service

**"MR. WHIT"**

By W. H. Walker, '52

An old and familiar face to textile students—Mr. Whit Dillard—will be noticeably missing after July 1st. He has faithfully served the Textile School for 49 of his 51 years of service with Clemson College, and now is retiring.

"Mr. Whit," as he is fondly called, has seen a lot of colleges in his day, but in his own words, "Nothing compares to Clemson—I'm 100% for it!"

In 1903 Mr. Whit became connected with the Textile Department and since then has seen many changes—for instance, the Textile Building was originally located in the present Physics Building. He helped move the machinery from the Calhoun Railroad Station to that building with the help of state prisoners who were located here at that time.

Mr. Whit is an ardent football fan—he boasts that he has missed only one home game, and that happened in 1921! Since he is retiring, he says that he is going to enjoy another of his favorite sports, fishing. Also, he is planning to devote much more time to his garden.

**"MR. JOHN"**

By A. H. Clarke, TM '52

An article on "Mr. John" was printed in a recent issue of this magazine in order that students may recognize this man often seen in the textile building. However, we won't be seeing "Mr. John" around as often as before because he is entering into that phase of life so eagerly awaited by most young men—retirement. I say young men because it seems that when the time for retirement arrives, the retiring man does not usually aspire to put aside something at which he has spent a lifetime. This is at least true in Mr. Willis' case. He said it was not his idea to retire, but the age limit requires it. But after 24 years of service with Clemson, he undoubtedly deserves a rest.

Mr. John says he retired from hunting and fishing many years ago. His luck probably accounted for that decision. His main interests are in gardening and ball games. Retirement will permit him to spend more time with these activities.

Mr. John lives in Clemson, so I guess we will still see him around town quite often.

TWELVE
With graduation coming around once more, Clemson will again be sending young men into the textile world, a world that holds unlimited possibilities for the trained, ambitious young man.

These men will not be alone in the vast textile world, they will be aided by numerous former graduates, a few of which are listed here as evidence of the progress made by Clemson men.

Among former graduates at Beaumont Mills in Spartanburg are: J. L. Adams '29, Superintendent; L. Earl Bagwell, Jr., '32, Assistant Superintendent; Brooks Patterson '49, Carding Overhauler; George Dickerson '41, Assistant Overseer (Carolina Textiles Division); James P. Parnell '51, Carding Overhauler; Charles V. Good '36, Standards, Cost and Production Manager; Murray N. Turner '51, Spinning Department, (now on military leave); Jackie Calvert '51, Time Study, (now on military leave); James H. Turner '51, Weaving Department, (now on military leave); Perry M. Judy '48, Time Study; Stanley Lancaster '41, Night General Overseer.

With Watts Mills in Laurens are: T. P. Townsend '29, Manager; Harry B. Iler, Jr., '48, Overseer of Preparation; William M. Washington '47, Assistant Overseer of Weaving; Harry G. Batson '51, Rate Checker in Standards Department; Raymond E. Patton '51, Trainee; Ralph C. Byers, attended Clemson, '45-'46, Supervisor of Wage and Rate Department; William C. Broughton '45-'46, Rate Checker in Standards Department.

Former graduates with Laurens Mills are: Thomas C. Hunt '33, Master Mechanic; Archie T. Wilbanks '49, Supervisor of Preparation; T. L. Timmerman '43, Lab Technician; Jack W. Armstrong '48, Second-Hand; John E. Koopman '48, Second-Hand, Weaving Department; F. Wates Adams '52, Standards Department Trainee; and Charles W. Patterson '50, Loomfixer.

Along with G. G. Simmons '26, General Manager of Drayton Mills, are these Clemson men: J. L. Caldwell '31, Assistant to Superintendent; M. B. Self '34, Training Director; J. G. Farrel '21, Cost Accountant; W. K. Lee '42, Master Mechanic; Carl R. Rogers '50, Supervisor; Glynn E. Scott '39, Twister Fixer; and William Bolt 49, Trainee.

Clemson graduates with Inman Mills, Inman, S. C., are: E. L. Ramey, General Manager of Inman and Riverdale Mills; Z. G. Willis, Night Superintendent; Lewis W. Thompson, Research Engineer; Furman League, Assistant Overseer of Spinning; Joe Wyse, Training Program.

With Riegel Textile Corporation, Ware Shoals, S. C. are: Charles S. Black, Overseer of Bleach House; William J. Erwin, Vice-President and General Manager; William Davis Inabnit, Chemist; Riegel Development Laboratory; James Baron McNinch, Finishing Production and Planning; Thomas Hopkins Peake, Jr., Chemist, Central Control Laboratory; Julian W. Shirley, Chemist, Riegel Development Laboratory; Grover C. Henry, Second Hand, Preparation Department; Malbourne G. Michael, Finishing Trainee; Paul Bolton Skinner, Mill Production; William Nesbitt Smith, Overseer, Fork Shoals Plant; George Manning Taylor, Assistant Mill Superintendent; and John Carlston Thompson.

Former graduates with Rock Hill Printing and Finishing Company, Rock Hill, South Carolina, are: W. H. Grier '23, Vice-President and General Manager; Robert F. Drennan '42, Service Division; T. A. Jeffords '48, Formula Clerk, Color Shop; A. H. Hand '48, Formula Clerk, Color Shop; J. M. Bennett '38, Executive Assistant; W. H. '29, Head of Control Laboratory; Dave Cranford '43, Chemist; Paul G. Plexico '23, Invoicer; W. T. Jenkins, Jr., '43, Junior Engineer; W. P. Clements '30, Superintendent of Rayon Division; W. B. Roach '34, Assistant Engineer of Power Plant; C. K. Christeozig 1899, Office; A. G. Fish- '32, Rayon Dyer; R. O. Watson '49, Chemist; and W. K. Hammett '51, Research Chemist.

With Cone Mills Corporation, Greensboro, N. C., are: Marion W. Heiss '18, Vice-President; Arthur Rollins '48, Overseer, Carding Revolution Division. With Schneider Mills, Taylorsville, N. C., are: Mr. Albert Schneider '44, Vice-President-Manager; Mr. B. A. Chestochowske '43, Assistant to the Manager. Employed at Kendall Mills, Charlotte, N. C., is Quay Hood Fellers '50, Assistant Overseer in one of the weave rooms.

Clemson men with Republic Cotton Mills, Great Falls, S. C., are: A. E. Williams '47, Superintendent, No. 1 Mill; C. J. Taylor '47, Shift Foreman of Weaving, 1st Shift; M. H. Smith '48, Overseer Slash; E. W. Barnette, Jr., '50, Assistant Designer; W. E. Lindsay '47, Sample Designer; G. E. Faulkenberry '29, Superintendent Dyeing; I. W. Gerrett '38, Superintendent Planning; and Albert H. Morrison '50, Standards Department.
Advancement in Testing -- The Instron

D. H. Witt

With the addition of the Instron Tensile Testing Instrument recently, the testing equipment of our school has been greatly increased. As a matter of interest, included also in the testing laboratories here are: The Pacific Evenness Tester, The Uster Evenness Tester and The Brush Uniformity Analyzer. These machines have opened a wealth of information to the students and the faculty for making comparisons, research, and analyzing the products being made on the various machines. Clemson is greatly benefited by having these evenness testers and the new Instron machine, not only for its own use but as a help to the mills who are interested in research. To date, only Lowell Textile Institute and Clemson have added the new Instron to their equipment in testing fibers and fabrics in the textile schools.

The Instron Tensile Testing Instrument has been proved to be a high precision electronic testing device. It makes possible the testing of a broad variety of materials, over a wide field of test conditions of load and speed. While Clemson’s Instron will be used in connection with textiles, the machine has almost unlimited possibilities of unique testing techniques on many products. As an indication to this the manufacturer states as follows: “The Instron is built to measure accurately over a wide range of conditions, the load-elongation properties of such materials as:

Textile fibers, yarns and fabrics
Plastic films, coated materials and laminates
Rubber, paper, rope, leather, adhesives
And similar fibrous or non-fibrous specimens.”

In explaining the operation, the Instron utilizes an electronic weighing system for indicating the load applied to the sample. The bottom jaw, which pulls the sample, is operated by a drive which provides an absolutely controlled rate of elongation of the sample over many speeds and in either direction. The Instron has instant reversibility which is accomplished by fast acting computer-type magnetic switches. On the movable crosshead is mounted the pulling jaw which is operated vertically by twin screws designed specially to eliminate back lash. A servo-controlled amplitune drive provides the power to pull the crosshead. Due to the instantaneous reversibility of the Instron, cycling and fatigue tests can be performed on cloth samples very easily. Automatic switches which can be adjusted very accurately are used to control the gauge length, the cycle points, and other functions desired. The machine can also be operated manually from the control panel. Also provided are quick traverse switches for accelerated positioning of the crosshead.

The standard jaw speeds are from .02 to 20 inches per minute in twelve steps. Different jaw speeds are obtained by changing light gears in a small compartment on the front of the machine. The standard chart speeds are from .2 to 50 inches per minute in ten steps. The load recording system consists of sensitive load cells made on the electric strain gage principle. Electrical signals are produced by the load variations and are amplified to operate a graphic recorder. The chart and jaws are driven synchronously, thereby giving a load-elongation curve of the materials. (the elongation being at a constant rate). Load ranges are determined by the cell used and cells range in capacity from 2 grams to 1000 pounds. The Instron here is equipped with Cell D which has a group of ranges from 20-1000 pounds. Since the arrival of the Instron at Clemson, jaws have been made for the ASTM grab strength test and spools have been mounted for standard skein tests.

This semester for the first time the textile seniors are being introduced to the Instron and they will learn of the wide possibilities of its use in research. The Textile School is proud of its new Instron and it is the hope that both the industry and the school will benefit by the results obtained from this precision testing instrument.

After a tough fight, the bomber was approaching its base. Just as the pilot, over the intercom, was giving the crew landing instructions, the engineer, in an agitated tone, cut in:

“Sir, we’re very low on fuel, and I’ve just discovered that our landing gear has been shot away. What’ll we do?”

The pilot thought a moment, then shouted back:
“All right, you guys. We’re almost out of gas and we’ve lost our landing gear. So you’d better stick your feet out of the bomb bay and start running like blazes.”

THE BOBBIN AND BEAKER
As you enter mill life you will do well to learn all about
Reiner equipment, its mill-proved record of all around excellence.
The Reiner production program covers a wide range of machines
—all top performers in their field. As your responsibilities grow
with the years and decisions have to be made—remember Reiner
for trouble-free, highest speed quality production in the fields
listed below:

High Speed Tricot Machines  
Simplex Machines  
Kayloom Machines  
Raschel Machines  
Full Width and Sectional Warpers  
Creels of All Types  
66 Gauge 4-Section Full Fashioned 
Hosiery Machines (Twin Knitters)  
Automatic Bobbin Winding Machines  
(For Quilting and Stitching Machines)  
Automatic Shuttle Embroidery Machines,  
10 and 15 Yards

☆

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550-64 Gregory Avenue
Weehawken, New Jersey

— 10 Minutes by bus from Times Square —

MAKERS OF QUALITY TEXTILE MACHINERY SINCE 1903
RESULTS OF GINNING PROCEDURES
(continued from page seven)

The graph on ends down on spinning shows the
same result as that of neps. These figures, too, are
very significant to the spinner and therefore should
be well noted by the ginner. Thirty-eight ends down,
as shown for test 4, is about the maximum the spin-
er can have and still maintain his operative work
load. Any higher than this would require a smaller
work assignment or a lowering of the spinning pro-
duction to bring the ends down back to standard.
Either of these changes would result in higher manu-
factoring costs, making cotton less competitive with
other fibers. Forty-nine ends down, as was the aver-
age for test 5, would require the change to be made.

The test also showed that overdrying and maxi-

mum machining at the gin resulted in lower yarn
strength, as well as lower cloth strength. The amount
of this difference was small, but the results were all
consistent from mill to mill. The strongest yarn and
cloth were made from test 4 cotton.

The average grade from test 4 came out 92.1, or
SLM—, whereas the grade from test 5 was 95.4, or
SLM+. On today’s market, test 4 cotton would have
a value of 38.80 cents\(^2\) and test 5 a value of 43
cents\(^2\) per pound. The waste at the mill for tests
4 and 5 ran 11.53 cents and 10.20 cents, respectively.
From these figures we can calculate the cotton cost
on 100 pounds of finished cloth as follows:

<table>
<thead>
<tr>
<th>Test 4</th>
<th>Cotton</th>
<th>Waste salvage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>111.5 lbs. at 38.80</td>
<td>11.5 lbs. at 20c</td>
</tr>
<tr>
<td></td>
<td>$43.26</td>
<td>2.30</td>
</tr>
</tbody>
</table>

Net cotton cost 100 No. $40.96

<table>
<thead>
<tr>
<th>Test 5</th>
<th>110.2 lbs. at 43.00</th>
<th>10.2 lbs. at 20c</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$47.39</td>
<td>2.04</td>
</tr>
</tbody>
</table>

$45.35

From the above we see that it would cost the mill
4.39 cents pound less to produce cloth from test 4
than from test 5. This cloth would be stronger and
would have 16.5 percent fewer neps. The lowest
grade cotton gave the best and cheapest cloth.

The ginner has been adding machinery to his equip-
ment in order to produce cleaner cotton that will
come out with a better grade. The cotton farmer
takes his seed cotton to the gin that he feels will give
him the best sample of ginned lint. We have seen
from this extensive test by actual mill runs that
blindly following this procedure might hurt every-
one. The farmer and ginner might well lose the mar-
ket to synthetic fibers. The mill will get a poorer
raw material which will either turn out an inferior
product or one that has a higher unit cost.

This cooperative test, involving all segments of the
industry, has clearly demonstrated a dangerous trend
in ginning procedure. It proves that the new addi-
tional machinery being added to the gins must be
operated with great care and skill to prevent real
damage to the cotton fiber. The test has clearly de-
cined the problem.

I believe the true cooperative spirit that exists be-
tween the farmer, ginner, and spinner can put these
facts to good use and make cotton into a better pro-
duct, better able to compete with synthetic fibers. If
these facts are not used, cotton will be in a danger-
ous position.

(1) "Cotton Fiber Properties, Spinning Efficiency and
Quality as Affected by Ginning Practices." Burt Johnson
N.C.C.

(2) Based on Anderson-Clayton Company quotation, Del-
ta Cotton landed group B mill point, March 10, 1952, May
Spots at 40 cents.

STANDARD-COOSA-THATCHER JOINS
INSTITUTE OF TEXTILE TECHNOLOGY

The Standard-Coosa-Thatcher Company of Chattano-
oga, Tennessee, has joined the Institute of Textile
Technology, according to an announcement by Mr.
R.C. Thatcher, President of the company.

Standard-Coosa-Thatcher manufactures high-quality
yarns and sewing threads at mills located in Pied-
mont, Alabama, Gadsden, Alabama, Rossville, Geor-
gia, and Chattanooga, Tennessee. The mills contain
143,000 spindles.

The first S.C.T. mill began operations sixty years
ago in Piedmont, Alabama. Two years before that,
A. G. Thatcher and Jacob Barlow were operating
the Barlow and Thatcher Spinning Company at
Henry Clay, Delaware.

While operating the Delaware mill, they formed the
Coosa Manufacturing Company in 1891 and inter-
ested other men, including W. Lane Verlenden and
J. W. Hawke in the Southern mill.

In 1896 the Delaware mill was discontinued, and
consolidation with the Coosa Manufacturing Compa-
y had made. This consolidation gave the company
a total of 15,000 spindles.

From this beginning, Standard-Coosa-Thatcher has
grown into a three-state operation which is widely
recognized for the quality of its products and the
character and skill of the people associated with the
mills. Seventy-one percent of the employees have
been with S.C.T. for more than five years, according
to a booklet recently released by the company.

THE BOBBIN AND BEAKER
Put Your Sizing Problems on Textile Shoulders

Texize Chemists work hand in hand with the Texize technicians who service your mill. This combination of on-the-spot analyses and laboratory research means better sized warps for your mill.

Get Texize individual service and research and you'll have an accurate solution to your sizing problems. Contact us now without obligation.
NEW MEMBERS

Iota chapter of Phi Psi initiated nine new members into the brotherhood this semester. Four seniors, four juniors and one sophomore were initiated April 24. The new members are Gilbert W. Ballentine, Marshall B. Bridgman, Harold E. Bradberry, Ernest J. Gilliland, Charles R. Mabry, Julius Melnyk, Paul S. Monty, Charles E. Mundy, and Charles L. Rogers. Iota chapter now numbers thirty-three.

NATIONAL CONVENTION

Iota chapter is anticipating with pleasure the honor of being host to the National Convention of Phi Psi, to be held at the Clemson House May 1, 2, and 3. Delegates will begin arriving at the Clemson House the evening of April 30. The mornings will be taken in business sessions. During the afternoons, the delegates will be divided into groups and escorted on tours of the School of Textiles, several of the modern mills in the vicinity and other points of interest.

SOCIAL NOTES

The annual Phi Psi banquet was held Friday night April 18 in the main dining room of the Calhoun Towers in Greenville S. C. Guest speaker was Dr. Joseph L. Vaughan president of the Institute of Textile Technology at Charlottesville, Va. Dr. Vaughan chose as his topic ‘Interluckability of Research in the Textile Industry,’ an interesting and informative address on the problems confronting the industry today. Guest of the fraternity included their wives; Dr. Vaughan; Mr. John T. Wigington; Dr. Hugh Brown, Dean of the School of Textiles, and Mrs. Brown; Dr. Norman C. Armitage, head of the research division of Deering-Milliken mills; and several members of the faculty and their wives.

GRADUATING


YOU MUST CREATE INTEREST IN SAFETY

(continued from page eleven)

One of the first jobs of a successful teacher, regardless of his subject, is to create in the minds of his pupils an enthusiasm for and an interest in that particular subject. Likewise, if you are to educate your people in safety, you must create in their minds an enthusiasm for safety. You must make them want safety. When you have done this the safety program in your plant will have become fairly well established.

How are you going to get your people interested in safety? Certain of us have sensitive spots that are easily touched. These may be called Motivating Characteristics and some may be appealed to in one way while others may be appealed to in other ways. Some methods of appeal are as follows: First, you may appeal to a majority of people with emphasis on the idea of self preservation, or fear of personal injury. This is the strongest motivating characteristic and will touch the majority of people. Second, you may appeal to some with the idea of personal or material gain, such as bonuses, personal gifts, days off, etc. Third, others may be appealed to through their sense of loyalty to their foreman or to the company for which they work; such as, effect of accident frequency on the foreman’s record or cost, production, etc. Others may be appealed to through their sense of responsibility. Man is vain. Therefore, when you place responsibility on him it also appeals to his vanity. The placing of an indifferent individual on the safety committee will often win him over and convert him to the importance of plant safety.

There are many ways by which you can sell safety to your employees. It is your job and your responsibility to analyze your own cases. Don’t give up the struggle, even though the perfect goal will never be reached. Accident frequency can be improved in your plant. It has been improved in many plants. It is being improved in many plants today.

As a safety director in your plant, I believe you should be interested in the safety of your employees outside the plant as well as in the plant. You should give them instruction and talk highway and home safety to the individual and to groups. This, I believe, from the humane standpoint, is as important as safety within your individual plant.

After his diagnosis of the boy, the doctor said: “I’m not sure what ails this child, but I can give him some pills that will throw him into fits, and I’m hell on fits!”

THE BOBBIN AND BEAKER
FLYERS SHOULD FIT SPINDLE TOPS PERFECTLY

NO UP AND DOWN VARIATION
NO WOBBLING DUE TO LOOSE FITTING

Flyers and spindles properly rebuilt fit each other like a custom-tailored glove. Each flyer sits level with all other flyers and does not vibrate.

This gives three distinct advantages:

First, maximum builder stroke resulting in larger bobbins—

Second, better evenness and breaking strength because the roving is not jerked violently at every flyer revolution—

Third, wear on flyer barrels and spindle tops minimized because of steady, well-supported operation.

Ideal's 25 years of "know how" and modern tools assure you the best that can be had in flyer and spindle repair. With Ideal's pneumatic swaging machine the flyer barrel is drawn in .003" undersize inside diameter and then reamed by exclusively built tapered reamers to the diameter and taper specified by factory blueprints from Whitin, Saco-Lowell, H & B, and other manufacturers. Spindle tops are ground to these dimensions to a tolerance of .0005" on latest Norton plunge cut grinders, equipped with latest scientific controls.

WE INVITE YOU TO COMPARE OUR WORK WITH ANY OTHER SOURCE

Hundreds of customers from Maine to California
Can't be wrong!

THREE FLYER REPAIR JOBS
TO CHOOSE FROM:

1. RCK (Black) FINISH—rust resistant.
   This is our deluxe finish—over half million in use.

2. RAYON (Bright) FINISH—highly polished.
   This is our economical finish, more in demand than ever.

3. REGULAR REPAIR JOB, without polishing.
   All repairs but no polished surfaces, most economical.
   All Three Jobs Fully Guaranteed

We furnish extra roving spindles and flyers while yours are being rebuilt.

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310 St. Hubert Street, Granby, Quebec, Canada.
CLEMSON HONORS THE TEXTILE INDUSTRY

By Harry Riemer
Editor of the Daily News Record, New York, N. Y.

We give thanks for industrial might,
Dedicated to uphold the right,
Symbol of defense of our nation,
Bulwark against any domination . . .

It gives steady employment with good pay;
Improves living standards day by day;
Contributes greatly to our success;
And means content and happiness.

Textiles play an important role
In helping the nation to reach its goal;
In peace or war they are a mainstay,
With the vigor and high morale they display.

Let's all salute Clemson's honorees,
Those men who received doctor's degrees—
For everything noble in life they stand;
The[y] represent the best in our land . . .

Let's pay tribute to J. E. Sirrine—
His memory forever will mean
Textile growth and progress of the best,
And power to conquer any test.

The temperance committee heard of a man ninety-five years of age who had never tasted alcoholic beverage, and rushed to his bedside for a testimonial. While they were guiding his trembling hand along the dotted line, an awful commotion arose in the next room.

“What in the world is that?” asked one of the good ladies.

“Oh, that,” gasped the old man as he sank back on his pillow. “That’s my Dad. He’s been drunk for a week.”

Two girls were discussing their prospects of marriage.

“I understand your boy friend will graduate from law school next month. I suppose you’ll get married then?”

“Oh no, not right away,” answered the other, “I want him to practice about a year first.”

A young teacher substituted for a friend who was taking a week off for a honeymoon. Some time later at a party someone started to introduce the groom to her.

“Oh, I know Miss Jones very well,” he said brightly. “She substituted for my wife on our honeymoon.”
J. P. STEVENS & CO., INC.

APPLETON COMPANY
Anderson

ARAGON BALDWIN MILLS
Rock Hill — Whitmire

DUNEAN MILLS
Greenville

INDUSTRIAL COTTON MILLS
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JONESVILLE MILLS
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PIEDMONT
MANUFACTURING COMPANY
Piedmont

UTICA AND MOHAWK
COTTON MILLS
Clemson — Seneca

VICTOR MONAGHAN COMPANY
Greenville — Greer

WATTS MILLS
Laurens

DUNEAN GROUP
Administrative Offices
Greenville, South Carolina

The Fleet Line
of
Textile Finishing Machinery

RIGGS AND LOMBARD, INC.
FOOT OF SUFFOLK STREET, LOWELL, MASS.

TWENTY-TWO
An Englishman returned home from a trip to America, and was telling his friends about one of the queer American games he saw played at a carnival.

"It is called 'Ohhell' I think," he explained.

"Ohhell?" asked his friends. "How do they play it?"

"Well, you pay a dime and you get a card. Then a man calls out a lot of numbers and after a while someone yells "Bingo." Then everyone else yells "Ohhell".

In golf, it's distance.
In a cigarette, it's taste.
In a Crosley, it's impossible.

A little boy about to show his pet rabbit to a guest was entering the drawing room with the animal when the animal proceeded to give birth to an enormous litter of baby rabbits. The boy watched for a moment, dropped the mother rabbit to the floor, and cried, "Holy smoke, the damn thing is falling apart."

Ambitious young man: "Sir, I am convinced in my heart that your daughter and I were simply made for each other."

Father: "That's where you're wrong, young man. At the time we had no such thought in mind."

Major: "Why did you give that WAC a medical discharge, Doc?"

Doc: "She's been hit by a guided muscle."

"We knew it would finally happen if he kept carrying on. Mrs. Santa Claus shot Santa when she caught him laying a doll under a Christmas tree.

From riches to rags is a much quicker trip than from rags to riches. We know a fellow who, just two years ago, had a yacht and a dozen women. Today he has only a row boat and a couple of oars.

As the elevator operator in the hospital closed the door, she called out "What floor, please?"

A soft voice from the rear answered: "Ladies Ready-to-Bear, please."

Lulu: "Would you like to see the place where I was operated on for appendicitis?"

Luke: "No, I hate hospitals."
As The Editor Sees It

R. R. Fowler '53

The initial aim of every college student is to be a success in his field of endeavor. In order for a person to be successful and happy in his success, he must be engaged in the type of work he likes best and is most capable of doing. Perhaps the most important single step the student has to make in reaching his goal is to attain the job he likes most, and is best suited for, upon his graduation. In the case of a Textile student, his chance for securing the job of his choice may lie in the impression he makes upon the person interviewing him. Even though a student may be very capable and very well prepared in his field, the chances of his securing the job of his choice may be greatly lessened if he should leave an unfavorable impression upon the representative of his prospective employers.

The editor, with the very able assistance of Mr. E. E. Waite, Professor of Psychology at Clemson, has compiled a number of outstanding points which should be considered by the student before appearing for a job interview.

Initially, a student should strive to make a good general impression on the interviewer. In order to enhance his personal appearance, the student should wear a conservative suit, a white shirt, and an appropriate necktie to the interview. His clothes should be clean and neatly pressed. His shoes should be well shined. He should have a fresh haircut and a clean shave. In short, the student's overall appearance should be pleasing to the individual.

After a formal handshake with the interviewer, the student should allow the representative to open the discussion. The student should answer all questions readily and politely. A confident attitude, without any display of cockiness, should be maintained by the student throughout the discussion. It is a custom of many job interviewers to induce the student to talk about himself. The interviewer often asks the student to render a brief summary of his life. If asked to do this, the student should speak openly and truthfully, and always in his best manner. He should neither be boastful nor overly shy or modest. It is the duty of the interviewer to appraise each student he contacts for a certain type job, and to decide whether the student would be a good or bad risk for his company.

If the student is genuinely interested in a particular company, he should reveal his interest in that company by bringing forth his knowledge of that company or by asking intelligent questions as to the interests and scope of the organization.

Students who have been connected with or engaged in any extra-curricular activities should reveal these interests, but should be careful not to try to over-emphasize his abilities at these activities.

Lastly, the student who has successfully completed his numerous interviews and has been approached by more than one organization with an offer for employment, should make a wise and careful choice of these offers. In doing so, the student can help himself and the company who employs him.

Now That You Mention It...

.... the reason most people know very little about what's going on in the world is that this information isn't included in the comic strips.

.... there aren't nearly enough crutches in the world for all the lame excuses.

.... the advantage of having a large vocabulary is that you can reject the big words and choose those you can spell.

.... you can say anything you want to in Russia—once!

.... tomorrow is one of the greatest labor-saving devices known.

.... with modern woman putting up such a false front, a man never knows what he's up against.

.... by the time you can afford to lose a golf ball, most of us can't hit it that far.

.... a feminine woman will never be out of style.

.... nothing grieves a student more than to study the wrong lesson and learn something that he wasn't required to learn.

.... it's impossible for a woman to be married to the same man for 40 years. After the first twenty, he's not the same man.

.... a tree is an object that will stand in one place for years, then suddenly jump in front of a lady driver.

.... even a live wire needs good connections.

THE BOBBIN AND BEAKER
AFTER 30 YEARS OF PIONEERING
We're Still Finding Better Ways to...

Thanks to the Textile Industry... it was through helping to solve your individual problems that we have been able to pioneer outstanding dyeing improvements for the past 30 years.

From the study, service, and planning that goes with every installation of Gaston County Dyeing equipment will come the new ideas which insure even better dyeing methods in the future.

GASTON COUNTY
DYEING MACHINE CO.
Pioneers in Automatically Controlled Dyeing Machines
Stanley, North Carolina

Albert R. Breen  Gaston County Dyeing Machine Co.
50 East Jackson Blvd. Terminal Building, 68 Hudson St.
The Rudel Machine Co., Ltd.
614 St. James St., W. Montreal
137 Washington St., W. Toronto
VATROLITE®—Use this powerful concentrated reducing agent for brighter vat dyed colors on cotton, linen and rayon... for faster, cleaner stripping results on silk, cotton and rayon.

DISCOLITE®—A concentrated reducing agent, highly stable at high temperatures, outstanding for discharge and vat color printing. Employed successfully wherever the reducing agent must dry into the fabric and retain its reducing power.

PAROLITE®—A dust-free white crystalline reducing agent. Soluble, colorless, excellent for stripping wool, wool rags, shoddy acetate or nylon fabric.

NEOZYME®—Concentrated low temperature desizing enzyme. Removes starch and gelatine. Excellent for eliminating thickeners from printed goods at low temperatures.

CASTROLITE®—A highly sulphonated castor oil used as a staple penetrant for dyeing or bleaching in leading textile mills.

VELVO SOFTENERS #25 & #50—Economical creamy white paste softeners derived from highly sulphonated tallows. Give softness and body without stiffness or affecting whites.

DRYTEX®—A high-test wax emulsion type water repellent finish having extreme stability both in the barrel and in diluted form as used. Non-foaming.

NEOWET®—Permits effective wetting at all temperatures—particularly useful with enzymatic desizing agents. No reaction to soft or hard water. Not affected by either acid or alkali chemicals. Non-ionic.

DISPERSALL®—Effective retardant for dyeing vat colors, dispersing and leveling qualities, for dyeing naphthol and vat colors, useful in wool and acetate dyeing. Valuable auxiliary in stripping vat colors, naphthols.

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Manufacturers of Chemicals for the Textile Industry