1962

The Bobbin and Beaker Vol. 19 No. 4

Clemson University

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SUMMER 1962

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THE
Bobbin & Beaker
Official Student Publication
Clemson Textile School

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THE BOBBIN & BEAKER. Organized in November, 1939, by Iota Chapter of Phi Psi Fraternity, and published and distributed without charge four times during the school year by students of the Clemson College School of Textiles. All rights reserved.

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The purpose of THE BOBBIN AND BEAKER, Clemson Textile School's magazine, is service to Clemson's textile students and also to be used as a medium of exchange for mill men who wish to express their views on subjects which are associated with the industry.

In return they receive, through reading this magazine, the thoughts of others who participate in this exchange of articles. All persons who receive THE BOBBIN AND BEAKER, approximately 2500, acquire essential information concerning new developments in the industry that occur most frequently in these times of mechanization.

This has been the purpose of this student publication since its beginning and the old staff has successfully completed its endeavor. It is now our duty, the new senior staff, to prove ourself by supplying the readers of this magazine with interesting and necessary facts at the time they are developed. We will endeavor to accomplish this task.

The new staff, as shown below is headed by W. E. Barrineau, Jr., a textile management major from Cades, South Carolina, as Editor. Seated from left to right, the new Business Manager is C. E. Crocker, Jr., a textile chemistry major from Enoree, South Carolina. R. R. Sarratt, a textile science major from Gaffney, South Carolina, will serve as Circulation Manager, R. W. Ellis, a textile chemistry major from Huntersville, North Carolina, will be the new Advertising Manager and J. W. Blackwood, a textile management major from Gaffney, South Carolina, will be the new Managing Editor.

—W. E. B.
The Textile School Takes On A New Look

By Gary A. Hall, T.S. '64

The merger of the School of Textiles and the Department of Industrial Management will go into effect at the close of the current academic year. This announcement was made recently by Dr. J. K. Williams, Dean of the College. Dr. Williams stated that this move was made to add strength to our curriculum and our research industrial oriented progress.

The consolidation of the School of Textiles and the Industrial Management Department will be known as the School of Industrial Management and Textile Science. When the merger goes into effect, this newly formed school will be second only to the School of Engineering in total enrollment.

There have been no changes in personnel, but the Industrial Management Department does plan to move into Sirrine Hall this coming summer. They plan to occupy the east wing of the building. The textile research department which presently occupies that section will be shifted to the west wing of the building, where new facilities will be provided.

According to Dean Gaston Gage, Dean of the School of Textiles, the merger of the two departments has been slowly approaching reality for several years. In 1954, Dr. Trevillian, presently head of the Industrial Management Department, and a group of professors recommended the feasibility of an Industrial Management Department at Clemson with a designated curriculum. The question came up as to where the new department was to be located. Dr. Trevillian was selected to head the newly formed department, and probably because of the fact that he was an economics professor and the new department was very closely related to economics, it seemed only proper at the time to put the Industrial Management Department into the School of Arts and Sciences.

As time has progressed, many people have been convinced that there is more kinship between the Industrial Management Department and The Textile School than any other field. The textile industry is the largest single employer of the Industrial Man-

(Continued on next page)
agement graduates, and because of this fact, several Industrial Management Majors take a textile option which is offered to them in their curriculum.

The textile department has been teaching its students managerial courses for several years. The Industrial management students have also taken such courses in the textile school, such as quality control and costing. This is another reason that makes the fusion of the departments even more logical.

At the present time the School of Arts and Sciences has more professors than any other school. Every school at Clemson has students taking courses in the School of Arts and Sciences, such as mathematics and English.

A connection of the two schools takes a load from the Arts and Sciences Department, and at the same time does not overload the Textile School.

Even though there will be this union, there will be no change in the curriculum of either. The graduates will still receive degrees in their desired courses, such as Textile Management, Textile Science, Textile Chemistry, and Industrial Management. Each of these departments will still have its respective head, with Dean Gage over the entire School of Industrial Management and Textile Science. The consolidation has no effect of any special field the student wishes to enter. Administratively, it is simply a change of pulling Industrial Management out of Arts and Sciences and putting it with the Textile School. Whereas the Department was once connected with the School of Arts and Sciences, it is now united with the Textile School.

After all the evidence had been considered, it seemed only reasonable that the Industrial Management Department was more related to the textile school than any other school at Clemson. The officials felt that by joining the two schools, the I.M. graduates would have a well established background for all managerial positions with extra opportunities for a man who wishes to seek a future in the greatest industry of our section of the country—textiles.
HELP AND COOPERATE

In the last issue of the Bobbin and Beaker I mentioned a tandem card. I said Reeves Brothers had given us the cards; Hollingsworth had clothed the cylinders, doffers, and licker-ins; and Ashworth had clothed the flats. Since then White Bearings of Charlotte and Dodge have given us the drives. Southern States of Hampton, Ga., is giving us two ball bearing comb boxes. Jenkins Metal Shops, Inc., of Gastonia is overhauling the screens. Elliott Metal Works of Greenville is fixing up the pan arrangement between the cards.

* * * * *

Burlington Industries delivered to our back platform a 204 spindle worsted length spinning frame. This frame will serve us well in our research program. We have considerable work to do on the middle length man made fibers. This frame came equipped with motors, switches and bobbins. This will go well with a worsted length roving frame recently given us by Judson Mills.

* * * * *

Wellman Combing has recently given us about 100 pounds of wool tops to use in our teaching.

* * * * *

Raleigh Farr and the Edda International Corporation have recently given the school a Titan tieing-in machine.

* * * * *

We are working toward equipping four chemistry research laboratories on the ground floor of the west wing. The research department and the college have put in masonry partitions and basic plumbing. We have bought the lights and are now negotiating for air conditioning. It will then take about $7,500.00 per laboratory to equip them. One of our friends has given us $7,500.00. We have three more to go.

* * * * *

The point of this whole story is that I am overcome when I think of the people who are willing to help us when they know our needs.
Outstanding Seniors...

By
Douglas V. Rippy, T.M. '64

Spurgeon B. Bryan

Spurgeon B. Bryan is a married, 22 year old, Textile Science major from Campobello, S. C. He has received scholarships for 1 year each from Geiger Dyestuffs and Seydel Woolen, and a 4 year Inman-Riverdale scholarship.

Among his varied activities at Clemson, Spurgeon is active in the AATT, SAM, PHI PSI, BSU, and he is a platoon sergeant in the Army R.O.T.C.

George T. (Tom) Mahaffey

George T. (Tom) Mahaffey is a 21 year old Textile Management major from LaGrange, Georgia. He is attending Clemson on a basketball scholarship.

Tom played basketball four years and was captain of the team his senior year. In addition to basketball, he is active in the AATT and the Block “C” clubs. Tom is also a member of the Delta Kappa Alpha fraternity.

Employment by Calloway Mills for the past 4 summers has given Tom much valuable experience in the Textile industry. Upon graduating, he plans to accept employment with Wellington Mills, a division of West Point Manufacturing Co., in Anderson, S. C.

Speight L. Bird

Speight L. Bird is a 22 year old Textile Management major from Rock Hill, S. C.

Speight sings with the Phi Kaps and is a member of the Phi Delta Kappa fraternity. He played basketball his first 3 years at Clemson and is a member of the Block “C” Club. He was also MC at Tigerama.

Working for Kayser-Roth Corporation during summer vacations has given Speight valuable training in industry. Upon graduating, Speight plans to enter the U. S. Navy for 2 years. After this he is going to seek employment in industry.

Spurgeon has worked at Inman mill during past few summers. He also worked at Kenney's Shoe Store on weekends. After graduation he is planning on entering the Army for a while then either to graduate school or into some phase of the Textile industry.
Textile Quality Control

By W. S. McMann, Assistant Director
Quality Control Department, Dan River Mills, Incorporated

Textile Quality Control has so many facets it can hardly be considered the exclusive province of any individual or any single department regardless of how devoted or energetic the persons themselves may be. In order for any textile organization to take the giant steps forward in the control of quality as has become necessary due to the increased competition evident in recent years it has been necessary to attack the problem from many directions.

In the first place, adequate progress is not possible without a planned program of machinery modernization to go hand and hand with sound mill practices.

The use of statistical concepts in the control of quality in yarn manufacturing is so widespread that it seems hardly worthwhile to emphasize the importance. No one will dispute or take exception in any way with the necessity for sampling, testing, evaluating and reporting for correction such factors as weight and uniformity in picker laps, card sliver, drawing sliver, roving and yarn. In addition, the use of seriplanes for evaluating yarn character and the making of nep counts in card web and drawing sliver are also practices which are considered standard in most textile manufacturing organizations. In other words, the controlling of yarn quality is not a matter of finding a means of evaluation and means of improvement. The means are present. The problem is simply one of deciding how much effort should be expended for the results desired.

Once we pass the point of yarn manufacturing, however, the problem of handling quality control splits up from what is a routine method of handling into a very, very varied number of practices, depending upon the individual mill. The reason for this (Continued on next page)
divergence at this point can be traced in general to the many different methods used in evaluating the quality of woven textiles.

Some years ago the American Society for Quality Control, in conjunction with the National Association of Shirt, Pajama and Sportswear Manufacturers, proposed to the industry that a sound method of evaluating the quality of woven textiles was to use a point system of grading fabric imperfections.

This system in general called for the assignment of 1 demerit point for a defect from 1" to 3" in length, 2 points for a defect 3" to 6" in length, 3 points for a defect 6" to 9" in length and 4 points for a defect in excess of 9" in length, with the further provision that no more than 4 points were to be assigned to one square yard of fabric.

This system of grading fabrics has many fine points to recommend. The first and most obvious is the fact that two different people can use this system and generally come up with the same number of points per 100 yards. There are several things that have to be qualified just as in most other programs. The most obvious one is the fact that some limit must be set on how small in thickness a slub can be and still be scored as a defect. Once this lower limit is established for slubs, knots, gouts, etc., there are few other problems encountered.

The most advantageous part of using this system of grading cloth, in my opinion, is in the field of quality control. If we grade our fabrics and simply make a decision as to whether they are first quality or second quality, we are then able to sort them for shipment but we have very little other information to aid us in making an improvement.

During the years that Dan River Mills has been using the point system of grading, we have gained so much confidence in its merits that on most occasions when an inquiry is made concerning the quality level of a fabric, the answer is given in the average defect points per 100 yards rather than percent seconds. Every time the Quality Control Department draws a random sample for examination on any fabric, a report is sent back to the grey mill or finishing mill, depending upon which goods we are checking, specifying the quality level in terms of points per 100 yards. In addition, each time a sample is drawn and evaluated by the point system of grading, we always determine in that sample which three defects are outstanding and how many points per 100 yards are chargeable to each defect. By doing this we are able in a very short period of time to determine for any one fabric just which defects are occurring most frequently. By working in the weave room or spinning room or whatever department is indicated towards the elimination of the defects creating the most points, we find our efforts towards improvement bear fruit much more quickly than any other system we have been able to use.

In brief, then, we believe the industry has available sound systems of evaluating both visual and physical irregularities, and we know the only way improvements can be made in either area is through the reporting of deficiencies encountered to the individual directly responsible for their prevention. In summary, then, we have three factors necessary for controlling quality. They are, (1) detection of irregularities, (2) reporting to the responsible individuals and (3) correction. In our established systems we have means of carrying out these three jobs in a scientific manner.

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**Phi Psi News**

by

Robert R. Sarratt, Secretary, T.S. '63

On April 10, 1962, Iota Chapter of Phi Psi conferred membership on seven new members just brought into the chapter. The new brothers are Harold D. Turner, a Textile Management major from Inman; Ben M. Smith, a Textile Management major from Fountain Inn; Johnny M. Butler, a Textile Chemistry major from Rock Hill; S. Howard Jones, a Textile Science major from Sumter; Steven D. Tucker, a Textile Management major from Spartanburg; L. Mickey Clyburn, a Textile Management major from Kershaw and Reggie L. Smith, a Textile Management major from Anderson.

Earlier in the year, three other brothers were brought into the chapter. They were George Harmon, a Textile Management major from Chesterfield; Bill Hendrix, a Textile Science major from Conestee; and Robert Sarratt, a Textile Science major from Gaffney.

Shortly after the first of the year, a steak supper was held at Dan's, with most of the brothers attending. Dean Gage spoke to the chapter following the dinner on “The Common Market.” We had a very good dinner and everyone seemed to enjoy the meeting and speaker.

This spring seven of the members took a field trip to Enka, N. C. to visit the American Enka Rayon Plant. They arrived early in the morning, toured the plant, ate dinner and came back to Clemson that afternoon.

Plans are being made by seven of the brothers to attend the National Phi Psi Convention in Charlottesville, Virginia, on May 3, 4, and 5. The convention will be held at the Monticello Hotel in Charlottesville. The program includes visits to the Institute of Textile Technology, University of Virginia, Monticello, and Ashlawn. The latter two being the homes of Thomas Jefferson and James Monroe, respectively. The group from IOTA Chapter will consist of: George Harmon, Crawford Love, Spurgeon Brian, Bud Smith, Tommy Templeton, Mickey Clyburn and Steve Tucker.

At the April 10 meeting, elections were held with the pictured officers elected for next year. In addition to those pictured, Mickey Clyburn was elected editor of Phi Psi.

We, the members of Phi Psi, wish all our graduates the best of luck in their professions. We feel that these men are among the best that Clemson has graduated!
REMEMBER

For the fifth summer the School of Textiles is offering a short course program for those in the Textile industry and related fields.

The first two courses, Yarn Manufacturing and Fabric Development, are especially recommended for the college graduates, other than textile school graduates, who will enter the industry this June. This program will serve them well, regardless of what phase of the industry they enter. It will be ideal for those entering a training program or for those going into the various staff fields. High school graduates will benefit.

COURSES

Yarn Manufacturing—Theory and Laboratory—Date Offered—June 11 or July 9, 1962

Fabric Development—Theory and Laboratory—Date Offered—July 9, 1962

Supervisor Development—Theory—Date Offered—June 11 or July 9, 1962

Methods Analysis & Time Study—Theory and Laboratory—Date Offered—June 18, 1962

Methods Time Measurement—Theory and Laboratory—Date Offered—July 9, 1962

For Additional Information Write:

Gaston Gage, Dean
School of Textiles
Clemson, S. C.

APPLICATION FOR SUMMER SHORT COURSES
Clemson College School of Textiles
Clemson, S. C.

Name of Student ___________________________ Address ___________________________
Sponsoring Company ______________________ Address ___________________________
Course Desired ____________________________ Date of Course _______________________

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Commute: Yes □ No □ Check enclosed □ Amount $__________ Will pay on arrival □
AATCC Report
by
Charles Funderburke, Secretary, TC '65

The American Association of Textile Chemist and Colorist Student Club meets every second Tuesday night in the Lounge to discuss plans in which the Club wishes to participate.

Of the three plant trips that the Club decided to take this year, we visited Utica Mohawk near Clemson for a brief tour of their manufacture and finishing processes in October. We visited Enka Corporation at Enka, N. C., April 3, 1962 and viewed their rayon manufacturing plant. On our return home we visited Cranston Print Works at Fletcher, N. C., and toured their printing and finishing operations.

Our Christmas dinner was held December 16, 1961, at which Mr. R. J. Breazeale, former teacher of textiles at Clemson and now sales representatives for Warwick Chemical Company in Rock Hill, was our guest speaker. He spoke on Wash-N-Wear finishes using the progressive increase in use of the various resins that have been used in the finishing of these fabrics as illustrations.

Our next dinner is planned for May 8, 1962, when we will be honored to have Mr. Jack Emerson, representative from Sandoz, Inc., Charlotte, N. C., as our guest speaker. He will talk to us on various principles of printing, including a demonstration of screen printing in which a T-shirt will be printed for each member present.

Our class officers for next year were elected April 17, 1962. They are as follows: Joe Belcher, President; Barry Cox, Vice-President; Charles Funderburke, Secretary and Ray Sherbert, Treasurer. Mr. Joe Lindsay is our club advisor.

In concluding the hi-lites of the AATCC Student Club, we would like to congratulate our Textile Chemistry graduates this year and wish them a successful future. They are Gene Phillips, Eric Anderson, Stanley Rose, Jerry Byrd, Bob Hartzog, Ned Pruitt and Tommy Templeton.
From seventeen members last year in the old N.T.-M.S., the Clemson student chapter of the American Association for Textile Technology has increased its membership to forty-eight members. These forty-eight members are charter members. They have the distinction of belonging to the student division of one of the larger professional organizations of textile technology.

On April 10, 1962, the A.A.T.T. elected officers for the 1962-63 sessions. Harold D. Turner was elected president of A.A.T.T. Harold is majoring in Textile Management, and his hometown is Inman, S. C. Donald R. Langley, a Textile Management major from Johnsonville, S. C., was elected Vice-President. Elected to fill the office of Secretary was Spurgeon B. Brian, a Textile Science major from Campobello, S. C. George L. Harmon, Textile Management major from Chesterfield, S. C., was elected to the Treasurer’s post. Selected for the office of publicity director was David B. O’Neal, a Textile Management major from Mullins, S. C. The faculty advisor is Mr. Joel L. Richardson.

Activities during the past year have included tours of various textile plants, guest speakers, and movies concerning textiles and management. The A.A.T.T. visited a narrow fabrics plant in Greenville, S. C. and Rocky River Mills, a woolen mill, at Calhoun Falls, S. C. Guest speakers have included Mr. Gaston Gage, Dean of the School of Textiles, Mr. John T. Wigington, Director of the A.C.M.I. here at Clemson and Mr. Charles A. Fagan from Deering-Milliken Corporation.

The Club has seen excellent movies on quality control and the responsibilities of a supervisor.

With its selection of new officers, the Clemson Chapter of A.A.T.T. is on its way to becoming a leading campus organization and one of the leading student chapters of the American Association for Textile Technology.
There's A Career for You -- In Textiles

Prof. T. A. Campbell
Head of Textile Management Department

The textile industry is expanding at a rapid pace in the South and more especially in the Carolinas. A young person planning a business career could select no better environment than the Carolinas. This is home and there are excellent opportunities for the young people who have had good training and possess qualifications required in this progressive and expanding industry.

It is not necessary to have a college education to go into the textile industry, because the mills train, to a certain extent, and the rest is left up to the worker and he can go forward if he shows initiative and interest. One mill manager reports that bright high school graduates can advance faster from learner to a job classification in textiles than any other industry. The jobs open to the high school graduates after a training period are retail clerks, office assistants, assistant foreman and foreman, warehouse workers, and production operators. The extent of formal education is very important, but the lack of it is no absolute bar to advancement. Frankly, the person who ends his education with high school handicaps himself because college education is more usual today than it was a generation ago.

We are fortunate to have four good textile schools in this section of the South; North Carolina State, Raleigh, North Carolina; Alabama Polytechnic Institute, Auburn, Alabama; Georgia School of Technology, Atlanta, Georgia; and Clemson College, Clemson, South Carolina. These schools are well equipped to train the young man or woman in textiles and other courses related to mill work.

Just to give an idea of the scope of job possibilities for the technically trained college graduate, a few are enumerated: machinery designers, engineers, chemists, accountants, salesmen, stylists and designers, and related activities. Mr. Robert T. Stevens of J. P. Stevens & Co., Inc., says “It looks like a fascinating future to me. Changes in the textile business, since I entered it 40 years ago, have been fabulous. Because of increasing research, these changes, how-

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SIXTEEN

THE BOBBIN AND BEAKER
ever, will seem small by comparison with the changes that will occur over the next 25 years. Those of us who do the best job in research will in my judgement, achieve in the future results that today would seem incredible."

The textile industry employs more women than any other industry with the greater majority of them being unskilled. It can readily be seen that the girls have a definite place in this industry. Rates of pay are commonly equal for men and women doing the same type of work. Women are preferred for many jobs because of superior patience and dexterity. Girls can expect to be earning an income within a few months, higher than possible in any other field requiring similar training. In addition to mill jobs, there are openings for laboratory and designing assistants, clerks, stenographers, telephone operators, receptionists, personnel interviewers, nurses, cafeteria managers and etc. Girls with training beyond high school may find many other opportunities. Women frequently excel in research work and the woman chemist or textile graduate will find a warm welcome from many mills with salaries and opportunities equaling those of men.

Despite labor saving devices and almost complete mechanization, the textile industry, which is the third largest industry in the United States, has consistently ranked as one of the largest providers of jobs. Over 33% of the American textile industry is in South Carolina alone. South Carolina's 325 textile mills consume more than one-fourth of all the cotton grown in the United States. These and other vital statistics of the ever-growing textile industry prove that there's a career awaiting our young men and women in textiles.

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**PLEASE!**

Changed Address Lately?

Help us to keep our files up to date. Our sincere thanks to all of you who answered our appeal in the last issue. If you haven't answered, please fill in the form below and mail to:

**THE BOBBIN AND BEAKER**
School of Textiles, Clemson, S. C.

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TEXTILES IN THE SPACE AGE

In a quiet, effective way, the textile industry is pressing forward to keep step with man’s exploration of space and has already made distinctive contributions to the overall space program.

Of particular interest thus far is the specially-designed suit worn by Col. John H. Glenn, Jr., in his recent triple-orbital flight, and the parachute arrangement for slowing by degrees the space capsule’s return after re-entering the earth’s atmosphere.

Of importance to future planning is the research now being done on the resistance of textile fabrics to radiation.

Certain textile products are also used in the nose cones of missiles, and other uses of textiles in the space program will be developed.

Colonel Glenn wore a 20-pound aluminized nylon and rubber garment when he orbited the globe three times on Feb. 20, 1962. The suit provided him with air conditioning and a stand-by environment that could simulate the atmosphere of the earth in case of a capsule failure. When the temperature inside the capsule during the historic flight went up to 108 degrees, Colonel Glenn turned on air conditioning controls in his space suit.

Glenn’s space suit was the result of research that had gone on for many years by private companies and the armed services. It was built by the B. F. Goodrich Company of Akron, Ohio, on specifications of the National Aeronautical and Space Administration. It was a modified version of the U. S. Navy pressurized flight suit developed by Goodrich and the Navy. The suit contained a complete communications system, was custom-fitted to the body and each of the 1,600 separate pieces had been tested under conditions four times as severe as those they might be subjected to in use.

Although this suit performed admirably, it is only the forerunner of more elaborate and effective suits that will be developed as the space program progresses and journeys are made to more distant goals in space.

The parachute that was used by Colonel Glenn, as well as by Astronauts Shepard and Grissom in earli-
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