1955

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ROBERT AND COMPANY ASSOCIATES
Textile Engineering Division
ATLANTA

THIRTY-NINE YEARS' NATIONWIDE EXPERIENCE IN INDUSTRIAL AND TEXTILE DEVELOPMENT
THE BOBBIN & BEAKER

Official Student Publication
Clemson Textile School

VOL. 13  SUMMER 1955  NO. 4

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THE COVER: My objective was to illustrate implicitly some typical representation of
the textile field and at the same time, create an esthetical composition. To do this,
two typical traits of the textile department were employed: a bobbin and a segment
of a jacquard loom. Photography was used as a medium of expression.

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A Method of Reducing Card Waste

By
H. M. Brown, Dean, School of Textiles
J. L. Thompson Assistant Professor
J. S. Graham, Assistant Professor

This is a progress report on a very preliminary card study at the Clemson School of Textiles. The project grew out of the work reported last year on reversing the direction of running card flats. In that study it was noted that running the flats in reverse brought out many pieces of seed coat, trash and tight tufts of unopened cotton, all of which in normal operation go on through the card. More of such trash, etc., can be brought out by running the flats faster in the reversed direction but, of course, this also increases the white waste in the flat strip.

A plan was proposed in which the flats were to be run in two sections. One, a very short section at the rear that would be run at a relatively high rate and the other main section to be run very slowly. The short section would bring out large amounts of the trash and seed coats as well as much lint. But it was planned to put the strip from this section back with the ingoing stock to be reworked by the licker-in. It was hoped the regular flats, never receiving the large pieces of trash, seed coats and etc., might make less neps and certainly less waste.

To divide the flat section in two parts would involve considerable change in the card construction and it was thought, possibly a single, properly clothed cylinder mounted between the licker-in and the regular flat section might serve the same purpose as a separate flat section. The added cylinder would be somewhat in the nature of a worker, but it would be run in the opposite direction.

In considering the problem of stripping this cylinder and returning the stripings to the stock, it was decided, in the first form, to let the waste removal cylinder be stripped by the licker-in itself. (See Figure 1)

The mounting of the waste removal cylinder is very straight forward and the present licker-in cover is replaced with one to cover both the licker-in and added cylinder. Provision is made for settings with respect to both the carding cylinder and the licker-in. A plexiglass window in the housing permits observation of both the waste removal cylinder and the licker-in to see the amount of waste and cotton being returned to the feed plate.

Studies were made with two different cottons. All wastes and the card sliver were carefully weighted and analyzed by the Shirley Analyzer. For each type of waste, the motes as percent of the total motes, and the lint in the waste as percent of the total lint fed were determined. Nep counts were also made.

In Table I the motes and lint in each type of waste using the waste removal cylinder are shown as percentages of the corresponding values for the card operating normally. (That is normally except flats were run in reverse direction.) Thus all figures are relative. The results did not turn out as expected. There was no significant reduction in neps and instead of an increase in motes removed there was a decrease, however, there was a surprising reduction in white waste in the mote-box; as high as 60 to 70 per cent and a considerable reduction in total lint loss.
TABLE I

Effect of Trash Removal Cylinder on Card Waste

<table>
<thead>
<tr>
<th>Cylinder</th>
<th>Trash Removal</th>
<th>Flat Strips</th>
<th>C &amp; B Strips</th>
<th>Total Waste</th>
<th>Notes in Lick</th>
<th>Waste in Flat Strips</th>
<th>Waste in C &amp; B Strips</th>
<th>Waste in Total Strips</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lap A</td>
<td>6.5</td>
<td>0.012</td>
<td>126</td>
<td>97</td>
<td>27</td>
<td>112</td>
<td>83</td>
<td>153</td>
</tr>
<tr>
<td>Lap B</td>
<td>1.5</td>
<td>0.072</td>
<td>87</td>
<td>81</td>
<td>13</td>
<td>106</td>
<td>85</td>
<td>186</td>
</tr>
<tr>
<td>Lap C</td>
<td>6.5</td>
<td>0.072</td>
<td>87</td>
<td>81</td>
<td>13</td>
<td>106</td>
<td>85</td>
<td>186</td>
</tr>
<tr>
<td>Lap D</td>
<td>6.5</td>
<td>0.009</td>
<td>136</td>
<td>94</td>
<td>20</td>
<td>117</td>
<td>92</td>
<td>129</td>
</tr>
<tr>
<td>Lap E</td>
<td>6.5</td>
<td>0.009</td>
<td>71</td>
<td>79</td>
<td>18</td>
<td>103</td>
<td>97</td>
<td>158</td>
</tr>
<tr>
<td>Lap F</td>
<td>6.5</td>
<td>0.007</td>
<td>99</td>
<td>93</td>
<td>25</td>
<td>132</td>
<td>102</td>
<td>184</td>
</tr>
<tr>
<td>Lap G</td>
<td>6.5</td>
<td>0.007</td>
<td>101</td>
<td>99</td>
<td>24</td>
<td>125</td>
<td>106</td>
<td>191</td>
</tr>
</tbody>
</table>

Two questions arose: First, even though there was a definite reduction of pieces of trash in the flat strip, why was there not more motes in the licker-in waste? Second, since the waste removal cylinder does not act on the cotton until it has passed the licker-in, how can it reduce the loss of lint through the mote knives and licker-in screen?

It was thought the most logical answer to the questions was that the addition of the waste cylinder had in some way altered the air currents around the licker-in. Measurements showed that the air pressure in the mote box without the added cylinder was .004 inches of water and the use of the trash removal cylinder lowered the pressure to .0033 inches. In view of the openings in the walls of the mote box, it seemed surprising that there should be any pressure under the licker-in. The mote box was then sealed with tape and an air tight partition placed across the opening between the chamber under the cylinder and the chamber under the licker-in. Operating the card without the added cylinder produced a pressure of .0047 under the cylinder and a vacuum of —.032 to —.04 under the licker-in. When the partition was removed the pressure under the licker-in rose to .0033. This shows that in regular card operation air currents created by the cylinder move into the mote box and are drawn through the mote knives and licker-in screen. This air must be carried under the back knife plate along with the cotton carried by the cylinder. In other words the cotton-covered cylinder wipes air under the knife plate and thereby carries it away from the licker-in tending to exhaust the air from the mote box, thus explaining the vacuum produced when the mote box is sealed. Pressure measurements showed this action to be greater when the cylinder carried cotton than when running empty.

When the waste cylinder is added a much narrower back knife plate must be used, and it was thought that possibly this narrower plate might offer less resistance to the passage of air under it, and thus enable more air to be brought through the licker-in screen and mote knives than is the case in the normal operation with a wide knife plate.

To further study the problem it was arranged to vary the pressure in the mote box. With and without the waste removal cylinder an especially trashy cotton was carded with two licker-in speeds at two different pressures in the mote box.

TABLE II

Effect of Waste Removal Cylinder on Card Waste from Lap Containing 5% Waste, 620 RPM Cylinder Set .007 in. —8.5 lb./hr. Production.

<table>
<thead>
<tr>
<th>Cylinder</th>
<th>Wipe Liner</th>
<th>Notes in Lick</th>
<th>Waste in Flat Strips</th>
<th>Waste in C &amp; B Strips</th>
<th>Waste in Total Strips</th>
<th>Notes in Lick</th>
<th>Waste in Flat Strips</th>
<th>Waste in C &amp; B Strips</th>
<th>Waste in Total Strips</th>
</tr>
</thead>
<tbody>
<tr>
<td>L60 RPM Licker-In</td>
<td>.0000</td>
<td>102</td>
<td>88</td>
<td>6</td>
<td>121</td>
<td>83</td>
<td>181</td>
<td>88</td>
<td>95</td>
</tr>
<tr>
<td>.0003</td>
<td>109</td>
<td>93</td>
<td>62</td>
<td>110</td>
<td>74</td>
<td>126</td>
<td>79</td>
<td>97</td>
<td>66</td>
</tr>
<tr>
<td>.005</td>
<td>103</td>
<td>92</td>
<td>53</td>
<td>106</td>
<td>74</td>
<td>174</td>
<td>97</td>
<td>96</td>
<td>73</td>
</tr>
<tr>
<td>760 RPM Licker-In</td>
<td>.0003</td>
<td>164</td>
<td>100</td>
<td>64</td>
<td>76</td>
<td>98</td>
<td>114</td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td>.0003</td>
<td>170</td>
<td>99</td>
<td>53</td>
<td>85</td>
<td>86</td>
<td>119</td>
<td>106</td>
<td>98</td>
<td>73</td>
</tr>
<tr>
<td>.0030</td>
<td>133</td>
<td>100</td>
<td>30</td>
<td>77</td>
<td>96</td>
<td>139</td>
<td>106</td>
<td>97</td>
<td>64</td>
</tr>
</tbody>
</table>

For each licker-in speed, Table II shows the results for three runs with, and three runs without, the waste cylinder. The motes and lint in each type of waste, produced when using the waste cylinder, are shown as percentages of the corresponding valves given without the device. Several effects should be noted:

1. For the normal licker-in speed there was:
   (a) an increase in motes in flat strip, in cylinder strip, and in the sliver, but only a small reduction of motes in the licker-in waste
   (b) a large reduction in lint in the licker-in waste and a considerable reduction of lint in the flat strip, cylinder strip, and in total lint loss
   (c) lower lint loss in the mote box with higher mote box pressure
   (d) a slightly higher nep count

2. For the high speed licker-in there was:
   (a) more motes in cylinder strip, in sliver and no change in motes for the licker-in waste and less motes in flat strip, giving a very slight decrease in total motes removed by the card.

SUMMER 1955 ELEVEN
(b) a considerable reduction of lint in all forms of waste except cylinder strip

3. The flat strip was free of large pieces of trash and unopened cotton.

It was thought if use of the waste cylinder resulted in different air currents through the licker-in screen and mote knives that using air pressures under the licker-in might produce somewhat the same results. This was tried and the effects of only adding air pressure under the licker-in, making no other changes in the card, are shown in Table III. It is noted that for the normal speed licker-in there was a large reduction in lint in the licker-in waste and some reduction in all wastes, giving a considerable total lint savings. The total saving in lint was as great as that for the waste removal cylinder without added pressure and there was practically no impairment of mote removal.

For the high speed licker-in the use of added mote box pressure gave as good mote removal and total lint saving as were given by the waste removal cylinder, and in the licker-in waste the reduction of lint loss was greater than that obtained with the waste cylinder. Also, the use of air pressure in the mote box did not seem to give quite as many neps as the operation using the waste cylinder. On the other hand addition of air pressure alone does not reduce the amount of larger trash reaching the flats.

Thus it is seen that a lint saving can be had by use of either the waste removal cylinder or by increased pressure in the mote box. Possibly the improvement by the waste cylinder is mainly due to resultant changes in air currents around the licker-in that occur with its use. It is believed that these changes in air flow may be caused by the altered back knife plate and this point is to be given more study. In Figure 2 the lint saving for the whole card is plotted against the mote box pressure.

---

TABLE III
Effect of Pressure in Mote Box on Card Waste from Lap Containing 5% Waste (Production: 8.5 lb./hr.)

<table>
<thead>
<tr>
<th>En. Pressure in Mote Box</th>
<th>Beige &amp; Fly</th>
<th>B. &amp; Fly</th>
<th>Flat Stripe</th>
<th>C. &amp; P. Stripe</th>
<th>Total Waste</th>
<th>Added Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of Normal</td>
<td>% of Normal</td>
<td>% of Normal</td>
<td>% of Normal</td>
<td>% of Normal</td>
<td>% of Normal</td>
</tr>
<tr>
<td>80000</td>
<td>84 96 106 97</td>
<td>79 106 79 106</td>
<td>97 97 97 97</td>
<td>97 97 97 97</td>
<td>71 71 71 71</td>
<td>104 104 104 104</td>
</tr>
<tr>
<td>80000</td>
<td>90 90 90 90</td>
<td>90 90 90 90</td>
<td>90 90 90 90</td>
<td>90 90 90 90</td>
<td>71 71 71 71</td>
<td>104 104 104 104</td>
</tr>
<tr>
<td>80000</td>
<td>89 91 91 91</td>
<td>90 90 90 90</td>
<td>91 91 91 91</td>
<td>91 91 91 91</td>
<td>71 71 71 71</td>
<td>104 104 104 104</td>
</tr>
</tbody>
</table>

Due to the relative worthlessness of licker-in waste the lint saving here is the most important and Figure 3 shows the per cent savings by use of air pressure and by waste cylinder.

---

MODERN FABRICS . . . MADE IN MODERN PLANTS


Reeves Brothers, Inc., an integrated textile organization, formed in 1920 and today comprises nine wholly owned mills and three finishing plants, employing 7,000 people.

REEVES BROTHERS, INC.
Southern Headquarters: Clevedale, S. C.
Main Sales Office: 54 Worth St., N. Y. C.
As is usually the case, savings cost something. The waste tests showed that the above methods slightly increased the motes in the sliver, and spinning tests were run to determine if the final yarn is impaired by the additional trash in the sliver, or by possible fiber damage caused by the waste reduction methods. The yarns were tested for evenness, strength and grade, the results being shown in Tables IV and V. Several effects of using the waste removal cylinder are evident:

### Table IV

<table>
<thead>
<tr>
<th>Speed of Added Cylinder</th>
<th>Carding Performance</th>
<th>Yarn Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Steps in Card Web</td>
<td>Cleaning Efficiency</td>
</tr>
<tr>
<td>R.P.M.</td>
<td>In. Water</td>
<td>Percent</td>
</tr>
<tr>
<td>650</td>
<td>150 sq. in.</td>
<td>63</td>
</tr>
<tr>
<td>160</td>
<td>0.0005</td>
<td>58</td>
</tr>
<tr>
<td>160</td>
<td>0.0005</td>
<td>58</td>
</tr>
<tr>
<td>160</td>
<td>0.0005</td>
<td>58</td>
</tr>
</tbody>
</table>

1. For the normal speed picker-in, at two different production rates, Cotton B showed no appreciable change in yarn strength, evenness, or grade, due to use of the waste cylinder. It is believed the additional motes in the sliver are of such character that most of them may be lost during later phases of processing.

2. For Cotton C, at normal mote box pressure and picker-in speed, the use of the waste cylinder did not impair yarn.

3. At higher pressure under the picker-in run at normal speed the waste cylinder seemed to slightly reduce yarn strength, grade and evenness.

4. With the high speed picker-in at both air pressures the waste cylinder gave a small reduction in strength, grade and evenness.

It is not thought that impairment of the sliver or yarn is inherent with the method. It is feared that the waste cylinder may have been run at too high a speed and that the type of clothing may not have been best for the purpose so that there was impairment in some cases. In previous work where large trash, etc., was brought out by reversing the motion of the flats, the sliver was improved even when the flat strip was fed back in with the lap. It should be realized that this study has only begun and it is believed that at a very low cost a worthwhile lint saving may be had without impairment of the sliver. There are yet to be tried many things such as different speeds, settings, types of clothing, different arrangements of air flow and shape of housing, etc.
Is there still such a thing as an Age of Opportunity or has that vanished with the changing times in this era we know as the Atomic Age?

Asked that question recently, William H. Grier '23, executive vice-president of the Rock Hill Printing and Finishing Company, replied: "The opportunity for success has never been brighter. Of course, we live in an age of change. But there are certain fundamentals essential to success which will never change. The successful people I have known in my lifetime all had one trait in common. They were willing to work hard. Loyalty, honesty, energy, ambition, and the desire to work are basic requirements for anyone seeking success."

Grier continued: "Our modern way of life seems to have had quite an impact upon the thinking of many of our younger people. We seem to be thinking more and more of a way of life that provides something for nothing. It just doesn't work out that way. Today a fellow who is willing to work hard often finds competition at a new low."

Asked what he would do if he were just leaving college, Grier answered: "I would find a job with a well-organized company and I would study that company just as hard as it studied my own application. I would want to know if it was progressive, wide-thinking, and if it occupied a field with wide horizons. Then I would learn as much about my field as I possibly could and when opportunity knocked, as it practically always does, I would attempt to make the most of that opportunity."

About this time of year 32 years ago, Grier, a young Clemson College cadet, was looking forward to graduation. And, like most of the students of today, he was wondering about the future and what awaited him in the world of business and industry.

Today this same Grier is head of the largest textile printing and finishing plant in the world. The plant Grier heads employs more than 3,300 persons. It can finish more than two million yards of fine cotton and rayon cloth a day, covers more than two million square feet, and uses more electricity than the city of Rock Hill with its 30,000 population.

In addition to being executive vice president and general manager of the Rock Hill plant and a director of M. Lowenstein and Sons, Inc., he has also been active in civic and educational work. He is a former chairman of the Clemson Board of Visitors, is now a member of the Board of Trustees of Winthrop College, and a director of the Charlotte Branch of the Federal Reserve System. He is an elder in the Oakland Avenue Presbyterian Church, a trustee of the Rock Hill Elks Lodge, and has served on many boards and committees of various organizations. A new addition to the Rock Hill plant is now being built and will be named the Grier Division of the Rock Hill Printing and Finishing Co.
A New Staff Takes Over

The staff of THE BOBBIN & BEAKER has had some changes made since the last issue of the publication. The new staff members are: Emil Stahl, Editor, of Elmhurst, Long Island, N. Y.; M. C. Morgan, Managing Editor, of Great Falls, S. C.; Richard C. Moore, Business Manager, of Pendleton, S. C.; Charles A. Davis, Advertising Manager, of Fairforest, S. C.; Stanley J. Reeves, Assistant Circulation Manager, of Heath Springs, S. C.; and Robert B. Huey, Photographer of Cheraw, S. C.

Mr. Stahl is a rising senior in textile manufacturing and was employed in the Men's Wear Division of Burlington Mills, Inc., in New York. Mr. Moore has been employed in the Gerrish-Milliken Mill of Excelsior Finishing Plant and is a rising senior. J. P. Stevens & Co. Inc., has employed Mr. Morgan for three summers, and he is a rising junior. Mr. Davis has worked in the Fairforest Finishing Company and Warrior Duck Mills and is a rising senior. The Ker- shaw plant of Springs Mills has employed Mr. Reeves for two summers and he is a rising senior. Mr. Huey is a textile chemistry major and has been employed by the Chesterfield Hosiery Mill, Chesterfield, S. C., for two summers.
A Visit to the Adam French Textile School

By Thomas F. Ballentine, Instructor of Knitting

Many students, after having completed part of their textile course here at Clemson, often wonder if other textile schools are similar to it. Questions concerning equipment, course requirements and methods of teaching form the greater part of this natural curiosity.

Recently, I was invited to tour the Adam French Textile School at Georgia Institute of Technology. Since my visit was on Saturday and after classes were over for the week, there was no opportunity to talk to members of the faculty.

The school is located in a spacious, partly air-conditioned building of very beautiful, modernistic design. Most of the offices are located at the front of the building. The laboratories are air-conditioned and makes work a bit easier on hot, spring days, as well as the cold winter days. The laboratories are arranged in order of processing and are divided into two categories. On one side of the building is the machinery required for processing cotton. The other side contains machinery used for processing synthetics (rayon). This arrangement enables the students to study and compare both systems very easily.

It must be kept in mind that Georgia Tech is primarily an engineering school, therefore we can understand that manufacturing of any type must take a back seat to the engineering curriculum. However, make no mistake about it, Georgia Tech has excellent equipment for its needs in the textile field. In some departments they exceed us, but for the most part their equipment is older than that found at Clemson. Even so, equipment of considerably earlier vintage is still being used in many of our mills.

I was particularly interested in the Knitting Department at Georgia Tech. The knitting courses taught there are: flat knitting and circular knitting. They have no knitting option and their courses are for the most part, elementary. There are two knitting labs which contain Scott & Williams B-5 machines, a 400-needle women’s circular hosiery machine set up to make mesh hose, a small tricot machine of the type we have, assorted ribbers, and bodywear machines. They also have three or four Tompkins knitting machines which were very interesting. These machines utilize the spring-beard needles which are stationary, all knitting action is accomplished by burr-wheels which work between the needles. The fabrics is knit upside down and inside out and is taken up on a roll above the machine.

Many people get a big laugh at the old hand looms that are used in the designing courses. Actually, they are very good for teaching the fundamentals of fabric design. The lab contains about twenty-five of these machines, each of which is equipped with a dobby head. Designs made in theory are installed on these looms and the student produces several inches of each type of cloth during his lab period. This type of design course with the practical touch creates more interest and at the same time, conveys the principle of weaving very effectively.
The testing lab is also interesting. It is much larger than our lab and has a separate air-conditioning system. The students have plenty of space in which to work and equipment to fill every testing need. The chemistry labs are set up similar to ours and are about the same size as the microscopy lab.

Some of the machines in the various labs are very interesting. For instance, they have a wool card which takes the raw stock in a breaker at one end and moves it through three-roll top cylinders, delivering a strand similar to roving. In conjunction with this the product of the card is wound on a spool which is then placed on a wool-spinning frame which has a draft of about .5. Incidentally, they have another spinning frame which is really a mechanical wonder. It has a variable speed motor, a drafting system that can be changed at will simply by turning a small crank, an extra long traverse and other devices both electrical and mechanical.

A good tour through the French School of Textiles requires about two hours. Even this cannot give a complete picture. Confined by the limits of an article, the picture is even more distorted but perhaps it will convey a general idea of our neighboring textile school. The only fair treatment would be to visit the school itself.

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Iota Chapter of Phi Psi Fraternity began this year with eighteen members after June and August graduation. This number was increased in December with the addition of twenty-five new members, one of the largest groups ever to pledge to the chapter, and we were all very happy to have this group join with us. A stag smoker was held on March 28 for prospective members and nine men were interested in joining. This will bring our membership total to fifty-two, the largest it has been in several years. From the increased number of students eligible to become members of the fraternity, it is easy to see that the scholastic average of the textile student body is rising considerably. We sincerely hope that it will continue to rise.

The chapter has recently conducted the professor rating poll, a project which was adopted two years ago. We feel that it was successful again this year in that it has given the professors a chance to note places where improvement might be made and it has provided an opportunity to compare these ratings with the ratings received in the first poll that was held. We appreciate very much the cooperation we received from the faculty and the students while it was being carried out.

During February, a group of Phi Psi members made a trip to the Fiberglas Plant in Anderson. This was carried out as a special project which would give each of the fellows a chance at seeing first hand a complete synthetic yarn manufacturing process. Other trips such as this are contemplated in the near future and we hope to visit a complete cloth manufacturing plant so that most of the manufacturing processes may be viewed.

The chapter held a banquet on February 25 in the Purple Room of the Clemson House to honor Mr. Ellison S. McKissick, President of the South Carolina Textile Manufacturers Association, who was awarded an honorary membership degree at that time by Dr. Hugh M. Brown. Approximately forty-four persons were present and Dr. R. F. Poole made several remarks following the dinner. Our spring banquet has been planned for May 13 and it will be held in the Gold Room at the Clemson House.

We were very fortunate recently in having our new tile floor installed. This was a gift from the Textile School, and we received very helpful assistance from Professors H. B. Wilson and John L. Thompson in laying the tile. This has improved the appearance of the room quite a bit.

The national convention of Phi Psi was held on April 14, 15, and 16 in Brookline, Massachusetts. Three members from Clemson attended and they were accompanied by Dr. W. T. Rainey, Jr., the Faculty Advisor. It was a most enjoyable trip, and we hope that next year a larger number will attend. Next year’s convention has been tentatively set to be held at Auburn, Alabama, with Lambda Chapter as host.
Balance in Teaching

Roscoe J. Breazeale
Instructor, Textile Chemistry & Chemistry

Today we are living in troubled and uneasy times as so often in the past. This is particularly true on the international level. At home we hear men of national prominence speak for actions of government which are directly opposed to our American way of life. We are disillusioned almost daily by those who for personal ambition and power will sacrifice ideals and friends.

Collegiate sports do a great deal toward inculcating fair play and sportsmanship, yet now and then we hear of instances where athletes have "sold out". In some sports we sometimes see athletes ganging up on a member of the opposing team. While these cases are few, we must admit there is room for improvement.

We all realize the temptations and pressures on young men to find the easy way out, or to seek personal advantages at the expense of others. Industrial management and college administrations alike face these problems daily. Have we become mechanistic in our programs and careless in our attitude? How can we keep alive the realization that pride and sincerity of purpose in doing a first class job should transcend all else in our professional and personal relations? How may we assure the desired results in the education of men in the field of textiles?

A college education in textiles should give a background of facts and techniques whereby an individual can carry out worthwhile tasks or attain a higher level of contribution to the industry as the result of their application.

The teacher must strive not only to teach these facts and techniques, but must also make a determined effort to instill an inquiring state of mind and to illustrate thorough and independent work by example. Much that the college professors do today may not bear fruit until years later.

College professors cannot do the entire job. Much of the student's attitude is an expression of ideas and habits of elementary and high school. After college, the textile graduates who enter industry will be influenced by the young men who are superintendents, overseers, or second hands. Perhaps they have a greater influence than one may realize at first. They set the example of pride in a job well done at a time when the hopes and expectations of the new man are highest. To the leaders in industry falls the responsibility of realizing that those working under them expect some measure of sincerity of purpose and pride in a job thoroughly done.

It is relatively easy to teach technical skills, we do this almost every day. It is much more difficult to instill top quality sincerity in professional and personal relations. Perhaps this can best be done by example. I believe that the future attitudes of textile men are dependent in large measure on today's teachers and industrial leaders alike.

We can and must set high standards for work well done. It is not enough to get a few facts and ideas from textbooks, we must make a conscientious effort to offset indifference, insincerity, and distortion of thought and fact. Almost daily we talk to students about jobs in industry. There conversations influence the attitude the student acquires toward his future activity in industry. In these daily associations of student and professor much can be done to build up the desirable and eliminate qualities of the student. Let's keep in mind that we are training leaders of tomorrow.
After a round of tours at area mills, the 225 members attending the fifth annual conference of the American Society for Quality Control, settled down to a day of talks. The conference lasted from January 27 through 29 and was held at the Clemson House.

The first program starting the Saturday session was "Quality Control in Testing and Research." Chairman at this meeting was H. K. Hughes, Summit Research Laboratory, Celanese Corporation of America. Following this was "Control of Tire Cord Testing" by Frank Akutowicz, American Viscose Corporation, Marcus Hook Pennsylvania, and "Evolution of Evenness Testers" by W. T. Walters, School of Textiles, N. C. State College, Raleigh, North Carolina.

Just prior to lunch, task group meetings were held on cotton raw stock staple fiber picker laps, staple sliver and roving, staple fiber yarn, educational films and fabric imperfections.

Starting the evening session there were three separate talks under the heading of "Quality Control in Processing." Chairman for this session was Samuel B. King, Limestone Manufacturing Company, Gaffney, S. C. Featured on the program were "Process Controls" by Norbert L. Enrick, Institute of Textile Technology, Charlottesville, Virginia; "Carding and Spinning Process as Related to Quality", by Joseph Delaney, Superintendent of Joanna Cotton Mills, Joanna, S. C.; and "Quality is Our Problem", by W. H. Esslinger, Quality Control Coordinator, Central Mill Office, Anderson, S. C.

Educational sessions were held on Saturday from 9:00 A.M. to 10:30 A.M. David S. Chambers of the University of Tennessee was chairman and leaders were Thomas B. Baimbridge, Tennessee Eastman Corporation, Kingsport, Tennessee, and John V. Brookshire, Jr., Owens-Corning Fiberglas Corporation, Anderson, S. C.

Dr. Robert G. Carson, formerly of the Clemson Textile School staff was the overall chairman of the conference.

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N. T. M. S., the Clemson School's only professional fraternity, is guided by a member of the Textile School Faculty, Mr. E. A. LaRoche, serving as the Faculty Advisor. The membership of the fraternity is open to all textile students of the upper three classes; sophomore, juniors and seniors.

As a social function this year, we, in conjunction with Phi Psi, had an “open-house” during Homecoming Week-end, in order that all interested persons might look over the Textile School.

The National Textile Manufacturing Society has in its first five years striven to give textile students a little more than can be obtained from books. In attempting to do this, men from the profession are asked to come and speak to the students on the jobs and problems they are most familiar with. Among others, Mr. C. G. Johnson of Deering-Milliken, talked to us and had as his topic, “What Is Expected From Graduates.” By getting this first-hand information we feel that we are much better prepared to go into the textile business.
Our most recent addition to the Textile School Faculty is Professor John C. Shell, class of 1938. Professor Shell worked with Burlington Mills from 1938-42 in Greensboro, N. C., Fayetteville, N. C., and New York City. He served in the U. S. Army from 1942-47 and was awarded the Legion of Merit medal. He was discharged with the rank of Major. After his career in the army, he worked with Deering-Milliken at Judson Mills, Greenville, S. C., as assistant director of the laboratory. From 1950-54, he was assistant superintendent at Gerrish-Milliken Mill, Pendleton, S. C. Professor Shell joined the faculty at the School of Textiles in February in February, 1955.

In the textile industry today, as in all other industries as well, there is a great demand for technically trained college graduates. This demand does not exist because of a need for the knowledge of a particular trade that the graduate has accumulated during his college course. This type of information is more readily and completely available from the men already in industry who have learned well in the great school of practical experience. Instead, the demand for the technically trained graduate exists because of the never ending need in industry for men who, because of their college training, are capable of thinking technically as well as otherwise and thereby offer potentials of leadership that all industry requires.

The primary purpose of education in our scheme of things is the training of the human mind and only secondarily the recording of specific facts into our memories. According to Webster, education is “the systematic development and cultivation of the normal powers of intellect, feeling, and conduct, so as to render them efficient in some particular form of living, or for life in general.” It is sad indeed that many students go through their college careers content to pursue only that small part of education that results from the study of textbooks, the assimilation of lectures, and the recitation in the classroom of the information so gained. Ralph Waldo Emerson, the famous American poet and essayist, once wrote: “You send your child to the schoolmaster, but ‘tis the schoolboys who educate him. You send him to the Latin class, but much of his tuition comes, on the way to school, from the shop-windows.”

The textile industry today, unlike its counterpart of a generation ago, attaches far more importance to the ability of a person to get along with other people than to technical knowledge alone. The cultivation of this ability is that very important part of the educational process that can best be developed by the student through his taking advantage of those aspects of campus life not found in the prescribed curriculum. These could well include participation toward leadership in all forms of student activity from the “bull session” to clubs and societies, ROTC, YMCA and other religious groups as well as participation in sports and encouragement of the social graces.

As far as courses of study are concerned, the student should take as electives as many subjects as possible which will assist him to better understand the complexity of the human personality and of the society in which we live. To express the above in
words far superior to my own, I use the words of the English historian, Edward Gibbon, who said: the first from his teachers; the second, more personal and important, from himself.

The graduate entering industry should certainly aim for an ultimate career as a part of management and should therefore keep in mind that a good supervisor is one who gets the people in his department to do what he wants done, when he wants it done, in the way that it should be done, because they want to do it.” The last phrase, “because they want to do it”, sums up what is meant by the ability of a person to get along with other people.

An occasional technical graduate enters upon his industrial career with a somewhat superior feeling akin to that of the returning veteran who felt that, because of his sacrifice for his country, the world owed him a living. This attitude bring to mind the words of W. G. Sumner, who said: “The men who start out with the notion that the world owes them a living generally find that the world pays it debt in the penitentiary or the poor house.” This type of person would perhaps also have a tendency to flaunt his learning before others and should take the advice of Lord Chesterfield, the English statesman and author, who wrote these words to his son. “Wear your learning, like a watch, in a private pocket; do not pull it out and strike it, merely to show that you have one. If you are asked what o’clock it is, tell it; but do not proclaim it hourly and unasked like the watchman.”

A college diploma will help its owner to receive opportunities not often afforded to others, however it is strictly up to the man to carry on from there. Success in any field of endeavor awaits the man who enters into his work with humility of spirit, earnestness of purpose, and an awareness of the Biblical admonition in Proverbs: “Wisdom is the principal thing; therefore get wisdom; and with all thy getting get understanding.”
Sirrine Foundation Aids Bobbin and Beaker

DR HUGH M. BROWN
Dean, School of Textiles

Two years ago the board of trustees of the Sirrine Foundation decided to help defray the cost of publishing The Bobbin and Beaker in the hope it could be enlarged and that four issues would be published every year. It was realized that since the magazine is distributed free, returns from advertising might not always cover the expenses. Also it was decided the key editorial staff should be paid modest honorariums. To accomplish these ends, the Sirrine Foundation underwrites costs not covered by advertising. This makes the magazine a thorough going organization.

Both the Bobbin and Beaker staff and the Textile School express their appreciation for this valuable contribution from the Sirrine Foundation.

This aid to the Textile School is just the latest of several ways in which the Sirrine Foundation benefits the School of Textiles. These include: (1) enhancement of the state retirement for textile staff members; (2) enhancement of the college travel funds to aid professors in visiting textile plants; (3) to employ professors to work on research during the summer months; (4) annual contributions to our textile library for employing a librarian and providing funds for the purchase of many books which would not otherwise be available.

It is believed that all of these aids have been a very large factor in strengthening our staff and the school effectiveness.
New Industrial Management Course Is Offered at Clemson

By Charles Davis, Advertising Manager

(Taken from supplementary bulletin published March 1955)

This course has been created by the college to meet an increasing demand in the South for personnel trained to follow careers associated with business and industry. The Industrial Management curriculum, a four year course, will be offered at Clemson College beginning in September, 1955.

The purpose of this course is to put special emphasis on preparation for management in industry and business. This course recognizes the need for an understanding of the basic principles of science and engineering underlying industrial operations, an appreciation of the nature of human beings, and the comprehension of the economic, political, and social development. This curriculum provides courses needed to prepare students for future positions in industry and business.

Twelve of the twenty-four approved electives must be selected from certain designated course groups. These groups are arranged to emphasize a particular phase of training. If the student wishes to emphasize the textile phase, he would take the courses in the textile group. Other groups of approved electives are designed for those students wishing to emphasize the various technical aspects of their education.

The remaining twelve hours of approved electives may consist of advanced R.O.T.C. courses or twelve hours of courses approved by the class advisor and the Dean of the School of Arts and Sciences.

This curriculum is offered in the School of Arts and Sciences. Further information can be obtained from the Dean, School of Arts and Sciences, Clemson Agricultural College, Clemson, S C.

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SUMMER 1955

TWENTY-FIVE
We are sincerely looking forward to featuring more guest articles in future issues.

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Dean Brown on European Tour

Representatives of the National Council for Textile Education sailed on April 9, on the S. S. United States for a several weeks tour of Europe.

Dr. Hugh M. Brown, dean of the School of Textiles at Clemson is among the nine people making the trip. Also on the tour is Malcolm E. Campbell, a 1930 graduate of Clemson, and now dean of textiles at N. C. State College in Raleigh.

The group will visit technological educational and industrial centers in France, Switzerland, West Germany, Belgium and Great Britain. Consultations will be had with officials of textile educational institutions, research organizations, textile mills, textile machinery manufacturers and others.

On the continent, highlights of the trip will be the conference on the Institute Textile re France in Paris and a meeting in Roubaix with French textile school and manufacturing officials.

While in Great Britain the national council will hold a joint meeting with British textile school officials at Harrogate. The group will visit the Leicester College of Technology, Leeds University, the British Rayon Research Center, the Bradford College of Technology Textile School and the British Industry Research Association.

They will also visit the International Wool Secretariat and Torridon (wool research center) and the tour will be closed by attending the four-day meeting of the British Textile Institute in London.

The national council is comprised of deans of the leading textile schools of the United States and others interested in the advancement of textile education. Its overall objectives are to study and apply where possible improvements in textile and technological educational curricular, procedures and administration in order to supply the textile and allied industrial with personnel better qualified to meet the needs of this important segment of the national economy.

The European trip is designed to further advance these objectives by an on-the-spot observation of work being done by similar groups of other countries. The trip was made possible through the cooperation of a number of companies in the textile and allied industries.

In addition to Deans Brown and Campbell and Mr. Hayward, President of the NCTE and also president of Philadelphia Textile Institute, others on the tour are Cleveland L. Adams, director, School of Textile Technology, Auburn, Auburn, Ala.; Mrs. Mildred Andrews, executive secretary, American Textile Machinery Assn., Vienna, Va.; Leslie B. Coombs, president, Bradford Durfee Technical Institute, Fall River, Mass.; Julian Jacobs, editor, Textile Research Journal, Textile Research Institute, New York; Dr. Martin J. Lydon, President, Lowell Technological Institute, Lowell, Mass.; and Edward T. Pickard, executive secretary, Textile Foundation, Kent, Conn.

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