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TEXTILE INSTITUTE

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PROCEEDINGS

NOTES AND ANNOUNCEMENTS

Meeting of Council, 21st October

The monthly meeting of Council was well attended and at the outset the Chairman welcomed one of the new members, Dr. E. Wildt, of Leicester. The other new member, Mr. A. Gowie, was unavoidably absent.

The Textiles and Designs Committee reported the issue of its Competitions prospectus for 1936/1937 and drew attention to the provision of two new Competitions under the terms of the Beanland bequest. The competitions are primarily the concern of students of worsted weaving since the late Mr. R. J. H. Beanland expressed his wish that the funds made available under the terms of his will should be expended to encourage the production of worsted fabrics. It was also reported that the Yarns Competition had been divided into two classes—Class I for Novel Folded Yarns and Class II for Novel Single Yarns. This action, which was in the nature of an experiment, had been taken in response to suggestions from the Textile Teachers' Association and it was hoped that the entries received would justify the innovation being placed on a permanent basis subsequently.

Council considered also the important question of the 1937 Annual Conference. It was felt that to adhere to the usual practice of holding this event during Whit-week could not be followed next year. This was because Coronation week immediately precedes Whit-week and it was regarded as impracticable to expect to hold a well-attended Conference so close to such an important and attractive event. Accordingly the event was fixed for June 9th to 11th inclusive; the venue to be Southport.

Textile Examinerships

In connection with certain of the Examinations conducted by the Union of Lancashire and Cheshire Institutes, the following announcement is now made for the information of members of this Institute. Examiners are required as follow :—

SENIOR COTTON SPINNING COURSE : Cotton Spinning (S. 3).
TRADE COURSES IN COTTON SPINNING AND COTTON MANUFACTURE (WEAVING) : Trade Calculations and Science (S. 1, 2, 3).
TRADE COURSE IN COTTON SPINNING : Trade Processes (S. 1, 2. 3).

A teacher who is giving instruction in a subject to students who would normally be taking the Union's examinations in the subject is not eligible for appointment as Examiner in that subject.

Forms of Application (separate form for each Examinership—please state which is required) and particulars regarding duties, rates of payment, etc., will be sent on receipt of a stamped addressed foolscap envelope. Completed

Application Forms should be returned, not later than October 29th, 1936, to The Secretary, Union of Lancashire and Cheshire Institutes, 33 Blackfriars Street, Manchester, 3.

The Journal Index

It has come to notice recently that there are still members who are unaware of the basis of issue of the annual Index to the three sections of this Journal. In the face of certain evidence the Publications Committee decided not to issue the Index to all members. This step effected a very real saving in printing and postage costs and has proved generally acceptable. There are, however, still members by whom this arrangement has not been noticed and requests are not infrequent for current and back issues of the Index. These as a rule cannot be supplied, as only very small stocks were held. Members, therefore, who wish to receive this publication annually are asked to notify the fact to the Institute and their names will be recorded for the current issue (1935) now in the press, and for subsequent issues.

Employment Register

The following announcement is taken from entries in our Register of Members whose services are on offer. Employers may obtain full particulars on application :—

No. 135—Desires position as General Manager or Technical Manager, M.Sc.Tech. (Textiles), F.T.I. Eight years' experience with large firm in the capacities of textile technologist and process control manager. Conversant with knitting (warp and weft), lace and embroidery machines, in addition to weaving.

No. 149—A.T.I. requires position as Inside Manager or Assistant in large concern of Worsted Spinners. City & Guilds 1st Class Certificate in Worsted Yarn Manufacture. Two years' teaching in Worsted Yarn Manufacture. Age, 32 years.

No. 150—Young man, 30 years of age, A.T.I., requires position as London Agent, or Factory Manager. Sixteen years' practical experience in administrative positions. City & Guilds Full Technological Certificate in Knitting.

Institute Membership

At the October meeting of the Council, the following were elected to Membership of the Institute :—

Ordinary.

G. Appleyard, 304, Broadway, Horsforth, near Leeds (Weaving Instructor).
R. Barnes, 42-3, Kreenholm, Estonia (Cotton Mill Manager).
F. L. Bowdin, 118, Hollingreave Road, Burnley (Assistant Manager, Cashier and Designer).
H. Carlisle, 13, Green Lane, Yeadon, near Leeds (Dyer, in charge of dyeing of cotton and rayon union fabrics).
P. A. Fewster, 29, Carr Road, Nelson (Loom Overlooker).
S. Goddard, 55, Parker Street, Colne (Designer and Assistant Manager).
G. Hainsworth, Jnr., B.Com. (Leeds), A. W. Hainsworth & Sons, Ltd., Temperance Mills, Stanningley, near Leeds.
C. P. Halkatti, 40, Milton Grove, Whalley Range, Manchester (Textile Student).
A. Knowles, 18, Waverley Road, Bolton (Works Chemist).
H. W. Marsland, 441, Leeds Road, Oldham (General Manager).
Miss M. Pass, B.Sc. (Lond.), Lullington Cottage, Hartford Road, Bexley, Kent (Textile Testing).
L. Roberts, Ravensbourne Club, Eltham Road, Lee Green, London, S.E.12 (Assistant Stock-keeper in Felt Dept.).

C. G. Row, Mahaboob Shaha Kulbarga Mills Co., Ltd., Gulbarga, India (Head of Carding and Spinning Depts.).
A. S. Roy, c/o Thos. Cook & Sons, Berkeley Street, London, W.1 (Textile Student).
G. H. Spilman, British Celanese Ltd., 22, Hanover Square, London, W.1 (Sales Director).
J. Unsworth, 127, Longfield Road, Bolton, Lancs. (Weaving Overlooker).

Junior.

A. Barker, Junr., "Craigielea," Gryffe, Bridge of Weir, Renfrewshire (Dyer, Foreman's Assistant).
T. H. Boswell, 18, Mornington Road, Bolton (Textile Apprentice).
Wm. Bradley, 7, North Terrace, Yeadon, Leeds (Designer and Assistant Manager).
C. Carter, 90, Gibraltar Road, West End, Halifax (Assistant to Director).
H. Clayton, 2, Dean Head, Summit, Littleborough (Cotton Weaving Shed Manager).
G. A. Dale, 244, King Cross, Halifax (Apprentice Carpet Manufacturer).
J. T. Galloway, Hill House, Minto, Hawick, Scotland (Hosiery Warehouseman).
J. Greenwood, Highfield Cottage, Waltroyd Road, Cleckheaton, Yorks. (Designer).
G. Helliwell, 107, Warley Road, Halifax (Assistant Designer-Manager).
D. Higson, "Denelands," Junction Road, Bolton (Technical Assistant).
J. S. Leishman, 8, Wilson Street, Derby (Textile Technician).
Wm. Leng, 20, Richmond Avenue, Beechwood, Sowerby Bridge, Yorks. (Assistant Designer).
H. Longley, 1, King Street, Heckmondwike (Supervisor, Cotton Belting Weaving Dept.).
H. Mangnall, 2, Queen's Gardens, off Holden Road, Leigh (Assistant Overlooker, Mule Spinning).
E. Pollanen, 97, Manchester Road, Accrington, Lancs. (Textile Student).
H. R. Powell, Indian Casablancas High Draft Co., Maneckji Wadia Building, Hornby Road, Bombay, India (Technical Expert).
A. Z. Poznanski, 11, Shrewsbury Road, Bolton (Textile Student).
W. B. Riley, 65, Derby Street, Colne, Lancs. (Designer).
W. C. Russell, 6, Rosevale Street, Hawick, Scotland (Textile Student).
M. J. Smith, B.A. Hons. (Oxon.), Springfield, Ashley Road, Hale, Cheshire (Cotton Spinning and Weaving Trainee).
H. B. Spencer, 10, Eversley Mount, West End, Halifax (Apprentice, Carpet Manufacturer).
F. Webster, 39, Kingsley Street, Bolton (Stripper and Grinder).
F. R. Whitwam, 21, "Brookeville," Hipperholme, near Halifax (Assistant Cloth Designer).
J. H. Wildt, Wildt & Co., Ltd., Tudor Road, Leicester (Textile Student).

Lancashire Section

Meeting held at Institute Headquarters, Manchester, Wednesday, 1st April, 1936; Mr. G. H. Thompson presiding.

"TRANSPORT IN RELATION TO THE TEXTILE INDUSTRIES"

The following is the text, slightly abbreviated, of the above-named lecture delivered to members of the Lancashire Section by Mr. W. E. Macve, Transport Manager of the Bleachers' Association. After introduction by the Chairman, the Lecturer said:

" I wish to preface this paper by saying that the views which are expressed are entirely my own, and in no way reflect those of my Company, The Bleachers' Association.

" I must admit that the invitation to present this paper gave me considerable pleasure. Apart from the honour, I feel that here is an opportunity to express views on a subject which is of the greatest importance to the Textile Industry and which, incidentally, is causing considerable discussion at the present time.

" A great deal has been said and written recently on the subject of co-ordination in Transport and Division of Function, and there is no question in the minds of those who concern themselves with these problems, that so far as transport in the textile industry is concerned, some sort of rationalisation or co-ordination would be desirable and would result in considerable economy.

" Apart from the fact that there is considerable wastage of transport within the industry, the Minister of Transport has expressed views which have distinct leanings towards some sort of co-ordination. He recently expressed the intention that the Ministry must and would continue to exercise control of transport in order to obtain the best out of the available facilities. A further indication of his interest is that already a special Committee of the Transport Advisory Council has been set up to enquire into the question of co-ordination and division of function. Arising from this Committee a sub-committee has been appointed to investigate the problem from the aspect of the holders of ' A ' and ' B ' licences,* having special regard to Rates and Service and this committee will meet representatives of the Industry to receive evidence. Further, a recent memorandum issued by the Association of British Chambers of Commerce on the same subject indicates that discussions are taking place on all sides.

" It is therefore opportune to examine the situation in Lancashire, having special regard to the position in the textile industry. The function of transport in Lancashire is made so much more difficult by reason of the scattered nature of the Industry. The geographical position of spinning mills bears no relation to that of the weaving sheds, and finishing works are equally scattered throughout the county. This lack of cohesion is not in any way due to the individual, but entirely caused by the fact that the industry has grown through a large number of years in a spasmodic manner without having any set plan for the future. Having regard to this sporadic growth, transport to-day has a more serious function to fulfil, and one might make the rather obvious statement that without a well-conducted transport system the textile industry would find itself in a serious position from the point of view not only of distribution, but of rapidity of delivery."

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* Under the Road and Rail Traffic Act of 1933 a licensing system was introduced whereby it was an offence to operate goods vehicles upon the road for the carriage of goods, either for hire or reward or for or in connection with any trade or business carried on by the owner of the vehicle, except under licence. Under Section 2 of the Act, three classes of licenses were introduced.

(1) The " A " licence, that is the licence for the public carrier, the man who plies for hire or reward.
(2) The " B " licence or limited carriers licence for the operator who carried goods in connection with his own trade or business, and also under certain conditions plies for hire or reward.
(3) The " C " licence or private carriers licence for the operator who is using it entirely in connection with his own business.

In a brief survey of the transport facilities available to the Lancashire industry, the lecturer referred to the Railway, Canal and Shipping systems and submitted that in these directions the transport facilities available were as comprehensive as those at the disposal of any other industry in the country.

Turning to road transport, Mr. Macve said :

" Lastly there is available a vast reserve of road transport which might be divided into two parts :—

(1) That owned by Haulage Contractors who ply for hire and reward.

(2) Ancillary transport. That which is owned by manufacturers who use it for their own purposes.

" There are no figures obtainable which would give any indication of the enormous road tonnage available for use in the industry. Some idea can be derived from the fact that in the North Western Traffic Area there were approximately 30,000 applications for ' A,' ' B ' and ' C ' licences in 1934. As it is estimated that each application averaged three vehicles, some idea of the potential resources available can be formed. A large proportion of this tonnage is undoubtedly engaged in the Textile industry.

" With all the facilities available, one would imagine that Lancashire enjoyed efficient and cheap transport. It is possible that many people consider that their transport is efficient and cheap, but the degree of cheapness these people might obtain is not, in my opinion, to be compared with the level which could be realised if the facilities available were operated on some fixed policy, having due regard to efficiency and waste.

" Viewed from its broadest aspect the level of cost of transport in Lancashire (subject to certain allowances for localised wage rates) is no lower than in other parts of the country, whereas having regard to the specialised nature of the industry it should be on a much lower level. This is a very sweeping statement to make and one which requires elucidation. The Textile industry is one of the few industries in the country which could, if its transport services were so organised, load its transport units both ways. In other words, it should be only a rare occurrence for a given unit to run light ; this applies equally to road and rail transport. As the cost of transport depends largely upon the load factor the inference is therefore obvious.

" Unfortunately, in the past, the use of transport has been considered an haphazard affair—purely a means to an end—a service which was a costly necessity, and thus little or no thought has been given to its organization. What organisation has been attempted has come through the medium of legislation, primarily through the Railway Act, 1931, Road Traffic Act, 1930-34, and Road and Rail Traffic Act, 1933. There has been no domestic organisation ; no one has ever visualised the enormous potentialities of the transport resources of the industry and attempted to harness them.

" All sections of the industry have been content to compete Railways with Road Transport with the hope of obtaining a small reduction in the rate charged. Some traders have purchased their own vehicles and perhaps in a large number of cases have been successful in obtaining a measure of economy. It is only when one turns to the combines that one sees any attempt at organisation, but here it is only sufficient to meet the requirements of the business and does not extend to give facility to the trade as a whole.

" Let me now indicate briefly the extent of the wastage of transport in the cotton textile industry to-day. Cotton is spun into yarn which passes to the manufacturer, possibly through a yarn agent. The cloth in turn is sold to a merchant again, also possibly through an agent. The merchant may export the cloth in a grey state in which case, if the merchant had no packing facilities of his own, it would be passed to a packer. On the other hand the cloth may be sent to a finisher, printer or dyer who in turn sends it back to the merchant. It can then either be sent to the packer for shipment or distributed to home trade houses. From the yarn stage to the ship it is possible to incur *six* transits or *eight* if the yarn or cloth passes through an agent.

" Apart from the carriage involved, one must take into consideration the handling which is incurred by these carriages and one will readily appreciate that without consideration of the detrimental effect so much handling may have upon the article, the actual cost of porterage involved in Manchester is very considerable..

It must be borne in mind, however, that certain handling is eliminated to-day by the use of flat bottoms or loading trays, but even these have to be loaded and discharged.

" Engaged in all these carriages are vehicles owned by manufacturers, by merchants and by finishers. There is also the enormous reserve operated by haulage contractors who ply for hire and reward and, further, there are the Railway Companies who from time to time, through the medium of the traffic courts, have stated that they have sufficient plant and facilities to deal with the movement of all goods, both in the textile as well as in other industries.

" Having regard to the transport facilities available and despite the excess carriage which obtains in the textile industry to-day, no form of transport is working to its maximum capacity and in consequence the level of cost to the industry is relatively higher than it should be. The road vehicle delivering yarn or cloth from the manufacturing centres in Lancashire is probably only loaded one way. The Railway Companies tell us that every day hundreds of empty railway wagons are transported to the sea-board to deal with incoming traffic including raw cotton. In the finishing trade, vehicles are probably operated to a figure near to their maximum capacity, but it is only due to the nature of the business and is not necessarily by design.

" Bearing these facts in mind and remembering the desire of the Minister of Transport to effect some sort of co-ordination in the transport industry, I propose now to examine the problem in the light of the requirements of the Textile Industry. In my opinion it is far better to examine one's own industry and to make suggestions which may be helpful rather than to wait until someone, not so well versed in our requirements, comes along and makes suggestions which may not be suitable to our needs.

" The points which emerge are these :—

(1) Can transport in the textile industry be made more efficient and economical ?

(2) And, is it possible to eliminate waste under the existing systems ?

" There are in my opinion two possible methods of eliminating wastage in transport to-day :—

(*a*) Co-ordination within the transport industry itself; involving some degree of division of function.

(*b*) Co-ordination of transport by industry.

" The first suggestion is the problem which the Transport Advisory Committee is attempting to elucidate at the present time and that being so it would be presumptuous for me to suggest how such co-ordination could be brought about, even if I were able to do so. All that I can attempt now is to examine the situation in the light of the requirements of our own industry.

" Both road and rail transport are suited to our requirements with this qualification that, owing to the shortness of the haul in Lancashire, and the number of handlings incurred by rail transit, road transport is probably more favourably situated. Furthermore, at the moment there is a temporary condition which has to be considered. Owing to the shrinkage in the textile industry, in many cases goods are no longer manufactured for stock and consequently greater calls are made on transport. Small lots have to be carried at short notice, and in my experience, only road transport can deal with the type of business satisfactorily.

" Railways have, from time to time, expressed views on co-ordination and generally have indicated that they are endeavouring to secure such a state in the industry. Unfortunately they are attempting to achieve this object by purchasing interests in road transport concerns. But, having done this, there appears to be no indication as to the line of demarcation between their road and rail interests. For the time being they are permitting their road interests to operate as before, which means they still compete for traffic with the Railways in the open market. In my opinion this is not co-ordination but the virtual creation of a monopoly.

" To determine the proper division of function one should first decide what are the requirements of industry, *qua* service, and then ask which form of transport is more suited to the work, having regard to cost. This suggestion is contrary to the intention of the Road and Rail Traffic Act of 1933 and the subsequent decisions of the Appeal Court which virtually took from the industry the right

to decide which form of transport was most suited to its purposes. But even if that be so, I am still of the opinion that no co-ordination can be obtained until this question is decided, especially when one considers the ramifications of the Railways. It is unlikely that they would permit any suggestions detrimental to their interests to be made effective. As Railways and Road interests are constituted to-day, the vested interest question plays far too great a part in deciding the question of division of function and therefore leads one to suggest that co-ordination in the transport industry itself will only be obtained through the medium of the nationalisation of Transport, or what perhaps sounds nicer, the establishment of something in the nature of a public utility corporation. Even if that were to be done it would be impossible at this stage to discuss the effect upon the Textile Trade.

" This brings me to my second suggestion as to whether co-ordination in transport can be brought about through the industry itself. I think I am correct in saying that the cotton textile industry knows or should know its requirements for transport, therefore I suggest that if the industry applied itself to the problem sound schemes for the ordering of transport could be evolved.

" I suggest for your consideration that in our industry a committee of experts could be set up to examine the problem and to find methods whereby transport could be made more effective and economical. It is very difficult for any one person to suggest alteration in fundamentals, as such criticism can be of a very destructive nature. But I intend to risk that criticism and suggest one means by which our transport services could be made more efficient and less costly.

" It is suggested in the first place that unnecessary transport could be eliminated by establishing a Bonded Warehouse at a convenient place in Lancashire having due regard to the Geographical position of the spinning, weaving and finishing sections of the industry. Instead of delivering cloth or yarn into Manchester, cloth would be delivered into that warehouse, accepted by experts against sample, and held pending re-delivery instructions to the finisher or packer.

" By this method not only would unnecessary carriage be avoided, but handling would be reduced to a minimum. Certain Warehouses in Manchester could be dispensed with and considerable congestion in Manchester would disappear. It is also suggested that the Warehouse would be controlled by impartial experts who would treat transactions as they are handled in other bonded warehouses throughout the county, to the extent that no disclosure of source of supply or customer would be made.

" These suggestions could be extended to permit a more complete organising of transport within the industry. One can foresee that by a definite control over incoming and outgoing goods all units of transport would be loaded to capacity and return loads provided. As I have said previously, the problem of the cost of transport to the users depends largely on the load factor. It follows that if it cost 10/– per ton to carry goods from Manchester to Preston, returning without a load, that the cost would be reduced by half if a return load were obtained.

" The essence of the successful operation of transport, especially by road, is bound up in the word Fluidity. By this is meant the ability to change a given unit from one job to another at short notice so as to prevent light running—in other words the ability to keep a unit always under load. By a system of control from the Bonded warehouse suggested above, this might well be managed.

" With the knowledge of the form of transport the industry required, the officials of the Warehouse would be able to eliminate overlapping. They could co-ordinate all available tonnage and distribute it to the available transport resources, so producing a situation whereby on the one side, the operators of transport obtained the benefit of the consolidated loading and the user the benefit of the economy which would be derived.

" I think the immediate reaction to such a scheme would be the assertion that it tends to set up a Transport Clearing House. This should be slightly clarified by saying that even so it would not only be a clearing house for transport but for the Trade as a whole. While I do not wish to pass any undue comments upon the constitution or usefulness of Clearing Houses, I would like to say this, the Clearing House visualised would differ from others by virtue of the fact that it would not be operating for profit.

" Another objection to the scheme is obviously that it would appear to take the control of transport out of the hands of the individual. I think the answer to that would be that if reasonable economy were produced those objections would disappear.

" In this paper I have attempted to show that there is need for co-ordination, since there is a distinct wastage in transport facilities in our trade. I have ventured to suggest one way of avoiding that wastage and so producing the required co-ordination. I may presume, but I trust that the points I have put before you have been of sufficient interest to promote useful discussions and perhaps bring us to a decision that it would be in the interests of our industry to exam*i*ne our transport facilities."

Midlands Section

Visit on Thursday, 15th October, 1936, to the "Textile Recorder" Machinery and Accessories Exhibition,* Granby Halls, Leicester.

This visit was by invitation of the Directors of the Exhibition who entertained all present to tea. At this function, Dr. E. Wildt presided and was supported by Mr. P. A. Bentley, Mr. F. Nasmith and Dr. W. Hubball, also directors of the Exhibition. At the same time a delegation of French Hosiery Manufacturers was entertained and were welcomed by the Chairman in a short speech in French. Addressing the members of the Textile Institute, Dr. Wildt expressed the hope that the Exhibition would have a very direct and intimate appeal to all in attendance, since their presence there as members of the Institute indicated their interest in everything that might effect an improvement in technique or ensure a saving in production costs. On behalf of his fellow directors he extended to all a warm welcome to the Exhibition. The Chairman then asked Mr. Frank Nasmith, Hon. Secretary of the Textile Institute, to deliver an address on " The Leicester Textile Exhibition : its Purpose and its Contents." After welcoming his audience, Mr. Nasmith said we had to consider Exhibitions—rightly planned, well organised, and properly run—as a unit of a comprehensive scheme of advertising. There were many phases and facts in a publicity campaign connected with the selling of machinery. There was the demonstration room of the Textile Machinist to which clients were invited and which could be a real publicity force. But it was sometimes difficult to get a client to visit a working demonstration room. He probably looked upon it much as a fly looked upon a spider's web and feared the wiles of the salesman. Then we had trade and technical journals with specially contributed articles backed by advertisements. Also there was the circular ; very often containing real practical information. The printed form of publicity offered a very valuable medium for notifying the trade of new developments, but it was in a sense dumb and by no means as vocative as the machinery of the demonstration room or the Exhibition, where one was faced with actualities and could make comparisions, settle contentious points, and learn in a practical way what developments had taken place during the past few years. Mr. Nasmith continued that it was not his intention to direct attention to each and every exhibit nor to instance any particular stand or machine. His comments as to trends and developments were to be taken as his own opinion and he hoped that as such they might be of interest.

The narrow boundary fence of the knitter within which he produced a small range of fabrics had been extended to an almost incredible degree. Growth in variety and style of products had been staggering. The industry had undoubtedly been very materially aided by new discoveries, emanating very largely from firms and industries outside the circle of actual knitting manufacturers. The advent of rayon as a commercial fibre had offered the knitting industry an opportunity of which full advantage had been taken. Credit for the expansion now obvious was due not only to those engaged in the industry but to those outside it who had catered for its needs in the direction of providing new yarns, and new

*A Technical Report on this Exhibition appears on pages P359-P362.

machinery and accessories. The exhibition was fully representative of the range of yarns available to-day to the knitter.

In the past, continued Mr. Nasmith, he had urged closer co-operation between all sections of the engineering industry. He was glad to observe that in the textile machinery section there were signs that such co-operation was now becoming a recognised and accepted thing. It might be that such industries as the aeroplane industry had not much direct connection with textiles, but some of its discoveries and methods were undoubtedly useful and there were examples on show of the value of such adoption. New light and non-corrodible metals were now available for use particularly in such instances as dyeing machinery.

Formerly it had perhaps been a case of development in machinery following demand by the manufacturer, continued the speaker. To-day he thought the position was reversed and that the machinery had forged ahead. He felt it difficult, as something of a layman, to refer to the many changes and developments actually made in knitting machinery. He could draw attention to the variety of effects now obtainable : patterning mechanism had made possible a very wide range of changes and styles. Locknit fabrics were increasingly in demand, particularly the fine guage qualities. He wished also to draw attention to developments in winding machinery. The speed demand was not to be taken too seriously ; operative production and quality of package produced were more important. Possibly, Mr. Nasmith said, automatic doffing and donning mechanism applied to winding machines were to become almost immediately available. The principles were sound but the application had yet to be thoroughly tested.

Machinery in the smallware trade was also improving, whilst warpers and other preparatory machines were well abreast of demand. Bearings had received much attention and variable speed gears were available. He had only time to draw attention to the finishing and testing machinery on show, all of which exhibited real development and merited careful consideration by the visitors.

A hearty vote of thanks to Mr. Nasmith and Dr. Wildt was accorded and suitable response made.

REVIEWS

"Cotton opening and Picking" and "Cotton drawing and Roving." By Gilbert R. Merrill, Lowell Textile Institute, Lowell, Mass., U.S.A. (Price, $1.75 and $2.75 respectively.)

These are the first two of a set of books which have been prepared by Professor Gilbert R. Merrill, primarily for his students in textile technology at the Lowell Textile Institute, Lowell, Mass., U.S.A. The first book consists of 55 pages, and the second of 54 pages of quarto size. The idea is that these notes are the perfect student's set of typewritten manuscript notes, and illustrations, interleaved with blank sheets, on which additional notes may be added for any new development in the field covered, adjacent to the original notes.

Professor Merrill has gained a name and reputation for cotton mill organization which is well upheld in the books. It is so long since a serious effort was issued of the Scott-Taggart type in this country that students of cotton spinning of all ages will find in these two books much helpful new information. British readers will also derive benefit from the closely reasoned statement of the American case, which is not entirely similar to their own, as for example the use of evener cones on draw frames, and the use of full bobbin knock-off motions on fly-frames.

Really good features about the books are that they are right up to date, and include sections on cork covered rollers of the Armstrong type about which nothing has yet appeared in print in English text-books, and also on the modern roving frame high-draft methods. All the drawings and diagrams are excellently done, and valuable for reference.

A severe criticism, if such could be made of books of this type, is that they lack contents and index, and contain a number of corrections (which the reader should carefully note on the introductory pages) by reason of the type used and the method of producing the book for economy's sake, which should have been remedied at first. Noting these, the books will be helpful to cotton students of all ages. W.H.S.

Principles and Practice of Textile Printing. By E. Knecht and J. B. Fothergill. Published by Charles Griffin & Co., Ltd., London. (1,048 pages. Third Edition, 1936. Price, £3 10s.)

Valuable service has been afforded to those engaged in textile printing by previous editions of this work which has long been generally accepted as a standard authority. During the years which have elapsed since the second edition was published in 1924, many noteworthy advances and developments have taken place in the technique of textile printing. Many additions to the ranges of dyestuffs have been made and considerable progress in the production of enhanced colouring properties has been realised. Modifications to existing processes and entirely new methods of application have been devised in consequence of these developments which have largely originated in the incessant research carried on by dyestuff manufacturers. Similarly, the stimulus of new trends of textile fabric manufacture, particularly in the use of acetate rayon and other synthetic fibres, has given rise to extensive innovations in dyestuffs as well as in textile printing practice and technique.

Entirely revised to include a record of up-to-date developments, the publication of a third edition of this manual enables it to retain its position of authority. Current trade improvement has revealed the wide commercial possibilities of certain innovations in printed fabrics, and the appearance of a revised edition, which contains needed information, is most opportune.

Subject matter dealing with what may be termed the foundations of textile printing has been amended and brought into line with present knowledge and practice. With respect to the machinery of printing and accessory processes, descriptions of the latest designs of various machines are accompanied, in many cases, by appropriate illustrations. More complete information is provided relating to the use of the commoner groups of dyestuffs in various discharge, reserve, and combined styles. Vat and Azoic groups are dealt with fully in accordance with the progress which has been made in the use of these classes of dyestuffs. Wool and natural silk printing subject matter has been expanded to embrace the printing of mixtures of these fibres with cotton and rayon, a feature which will prove useful in view of the expansion in the use of staple fibre for mixture purposes.

A description of screen printing is included in this edition. Entirely new sections are devoted to printing rayon, and particular attention is given to the difficulties in printing acetate rayon and to the differences in technique encountered in printing viscose and acetate rayons in comparison with calico. Printing acetate rayon is dealt with fully and details are given of the production of such styles as printed lustre effects. Much information is given concerning the use of assistants and preparations in various processes, and an appendix of such substances with identifications illustrates the helpful conception underlying the inclusion of new matter.

Other useful appendices add to the value of the volume, and mention must be made of the excellent patterns displayed in the text to illustrate very clearly the results produced by application of specified colours by methods described.

A correct balance has been preserved in the new chapters between purely chemical and practical aspects of the subjects concerned. Undoubtedly in every textile printing works, a copy of the revised edition of this book should be available for reference by every one concerned with the responsibility of successful production. W.A.H.

"Cotton goes to Market." By Alston Hill Garside. Published by Frederick H. Stokes Company, New York, also obtainable from Dudley Windel, 15, Tithebarn St., Liverpool. (411 pages. Price 15/– post free.)

This volume gives in 25 chapters a vivid description of the troubles which American Cotton undergoes from planting to the time it is in the hands of the spinner. Cotton farming in the United States is a small scale industry, the

average cotton farm consisting of only 72 acres, with 34 acres of idle land, and 22 acres of the remaining 38 planted to cotton, with the result that an average grower delivers to the gin sufficient cotton to make ten to fifteen bales.

An interesting description of the standard of living of the farmer is given, with apt references to the use of electricity, radio and telephones.

Problems of cotton marketing, cotton qualities, cotton classification, are discussed in detail. Spot markets, futures markets, principles of hedging, " on call " transactions, shippers' risks, growers' co-operative associations and price movement forecasting, are described in so lucid a manner that observing with the author the assumed transactions of " Smith, Brown & Co.", the ordinary reader will have no difficulty in visualising what the simple term " American Cotton " really means. W.K.

The Egyptian Cotton Year Book. Edited by Geo. Pilavachi. Obtainable from Dudley Windel, 15 Tithebarn Street, Liverpool. (156 pages. Price, 8s.)

The Egyptian Cotton Year Book, 1934-1935, is concerned primarily with the statistics of production and price. This information is presented in the form of Tables and in graphs.

The volume contains also a series of short articles of interest to the growers, the merchants and the spinners. The one on the vexed question of gold may perhaps even have a wider interest. The significance of the article " Cotton v. Rayon Staple Fibre," by a Bolton spinner, is too obvious to need emphasis. It contains matter of considerable importance both from the technical and from the economic points of view.

This work should be of considerable assistance and interest to all concerned with Egyptian cotton.

The Cotton Control Board. By Hubert D. Henderson, under the auspices of the Carnegie Endowment for International Peace. Published by the Clarendon Press, Oxford, 1922.

This is one of about 130 monographs, relating to eleven post-war States, in which, by means of an historical survey it was attempted to measure the economic cost of the War and the displacement it caused in the processes of civilisation.

In the early summer of 1917, owing to submarine activities and to shipping requirements for the fighting forces, the Lancashire Cotton Industry was faced with the problem of semi-famine supplies of her essential raw material. " Employers and operatives alike were fearful of a recurrence of the conditions of the Cotton Famine occasioned by the American Civil War." Essentially a peace industry, the cotton industry "was once again called upon to suffer, like a non-combatant, from the blows of friend and foe alike."

The fact that " the strain was never so severe nor the test so searching as it had been in the sixties " is largely attributable to the activities of the Cotton Control Board, the chief task of which, in the eyes of the Government, at least, " was to maintain the tranquillity and morale of Lancashire." The author, in his eminently readable account, gives the constitution of the Board, the schemes for orderly curtailment of production and the exactment of levies for production in excess of mill quotas, arrangements for unemployment benefit and for " playing off " on a rota system, together with the details of various wage negotiations, which the rising cost of living necessitated and increasing profits justified.

The circumstances in which the relevant orders establishing the Cotton Control Board were revoked and the Cotton Reconstruction Board was established, i.e., in February, 1919, are fully explained. Of particular interest, for the reason that its powerful influence continues down to the present day and may in perpetuity, are the uses to which the £1,500,000 of accumulated levies were put through " The Cotton Trade War Memorial Fund." These include educational schemes for the benefit of the cotton operatives and their children, scientific and educational research in connection with the industry and the development of cotton growing within the Empire.

It is apparent that the industry emerged with very great credit to itself out of a period of peculiar stress and trade dislocation. That this was made possible largely by the substantial rise in the price of cotton goods, as evidenced by statistics in Appendix C, which shows a decline in volume of cloth exports from 7,076 million yards in 1913, to 3,696 million yards in 1918, but an increase in value from £98 millions to £139 millions, can scarcely be doubted. In view of the

possibility that the industry may, unfortunately, be again confronted by similar emergency conditions, the lessons of the Cotton Control Board may still be studied with advantage. C.

The Textile Industries of China—their Present Position and Future Possibilities. By Aldred Farrer Barker and Kenneth Crookes Barker. Nomogram for Mixtures. Designed by Dr. S. Brodetsky. An Appendix to the above. A Report presented to and published by Chiao-Tung University, 1934 (215 pp., 26 statistical tables, 35 photographic illustrations and Index.)

The senior author on retiring from the Chair of Textile Industries, Leeds University, was appointed to a similar position on the staff of Chiao-Tung University, Shanghai, in the year 1933. Accompanied by his son, he first undertook preliminary investigations by personal visits to Textile factories in Shanghai, Nantung, Soochow, Hangchow and Wuhing, and to the industrial districts of North and Middle China and Japan. The objects were to obtain an exact knowledge of textile industries in China and to define the desirable courses of study and the equipment required to enable the Chiao-Tung University to assist China in developing her textile industries.

Although the report is devoted particularly to problems of technique, of management and of labour in the manufacture of silk, cotton and woollen goods and therefore of main interest to the Chinese authorities concerned, it contains much first-hand information of local conditions and is of general interest in estimating the future of China as a competitive factor in the world textile markets. C.

Textile Fibers and their Use. By K. P. Hess. Published by J. B. Lippincott and Co., U.S.A.

This book is primarily published for use in the U.S.A. English readers should, therefore, make due allowance for the American style of spelling, terms, etc. It should also be borne in mind, the standards given are those as issued by the Bureau of Standards in the United States of America.

Some of the statements made throughout the book would be disputed by many in this country. For examples of these, reference is made to page 157, where detention of odours is regarded as one of the disadvantages of Wool, and to page 292, where it is said that " Pure Silk " may contain weighting.

In America it would appear that no fabric is made for Wool Underwear or Poplin for Shirts, etc., since neither of these popular fabrics is shown in the table of Fabrics for Common Garments, in page 287.

Sticklers for correct description would regard with disfavour such terms as " Silk Linen."

In some cases, such as the table of " Tensile Strength of Fibers," in page 210, it would seem that more explanation could be added with advantage.

The photomicrographs as a means of illustration are excellent, but some of their value is lost, since more care might have been taken to show characteristic details. Particular instance is seen concerning Silk, see page 179, and in some cases the prints are very poor. Figure 103, page 133, is an outstanding example.

Apart from these blemishes, the book explains processes of Textile Manufacturing in a simple and easily understood way. The exercises and guide questions at the end of each section constitute a feature which makes the book very acceptable to the advanced student. It is, however, hardly complete without the companion " Laboratory Manual "—see footnote, page 8.

There is also an abundance of references to special subjects at the end of each section ; these should prove useful to those seeking more detailed information.

Students in the Distributing and Merchandising sections of the trade will find Section III of this book of particular interest. The book, which is profusely illustrated, is a completely re-written and re-set edition of the Author's previous work under the same title. H.E.

Report of the Macpherson Fund Mission to Australia, 1936. Published by the Manchester Chamber of Commerce. (32 pages with photographs.)

In pursuance of their objective " of fostering two-way trade with Australia," the Manchester Chamber of Commerce sent a mission to Australia in the early part of the year 1936. The signatories give full details of their very extensive

itinerary and conclude, from their own experience, that much by way of mutual benefit accrues from direct interchange of visits between representatives of the two business communities. Past misunderstandings have been removed from the minds of prominent Australian business men in a position to influence the community as a whole, and a knowledge of Lancashire has been disseminated and gladly received in Australia to an extent which would never have been possible by direct contact. Their observations upon Australian industrial policy, upon the work of the Australian Tariff Board and upon advertising and marketing methods in Australia are particularly suggestive. C.

World Consumption of Wool, 1928-1935. Prepared by the Intelligence Branch of the Imperial Economic Committee. Published by His Majesty's Stationery Office. (306 pp. of diagrams. Price 4s. net.)

Reliable estimates of the actual amounts of wool consumed in individual countries are lacking and, further, the statistics of trade and production are not uniform. The aim of this volume is to collate such data as are available.

For each of 46 countries, an introductory statement upon the recent trend in woollen manufactures is followed by an estimate of raw wool supplies and by details of its production and trade in semi-manufactured and finished goods—more particularly clothing tissues. Figures are given for the years 1928 to 1934 and to 1935, in some cases ; but those for 1934 and 1935 are strictly provisional. An annual issue of the wool consumption supplement to the Committee's " Wool Intelligence Notes " will bring the statistics contained in this volume up to date. C.

Fabrics. By Grace G. Denny.

In our *Review* on page P345 of the September issue, only the American address of the publishers was given. It may be purchased from Messrs. J. B. Lippincott Company, 16, John Street, Adelphi, London, W.C.2. T.

Textile Machinery Exhibition: Leicester

The exhibition of Textile Machinery, Yarns and Accessories, held at Leicester, from October 7th to 17th, was of particular interest to the knitting industry, giving an opportunity to manufacturers, managers, and all engaged in the industry to see the progress that has been made since the last exhibition of 1932.

Progress is again demonstrated in all departments and a striking feature is the closer co-operation that exists between the various sections, manufacturers of yarns, winding and warping machinery, working with the machine builder so that their products will meet the exacting requirements of the knitting industry.

Yarns

Twistless rayon yarns were featured together with fabrics produced on bearded needle circular and warp knitting machines, the fabrics having a lofty handle due to the absence of twist. Fine counts in rayon yarns, 30 denier for the fine gauge warp fabrics and 45 denier for fashioned and seamless hose, were in evidence. Staple fibre rayon yarns, with and without the admixture of other fibres, were shown in counts up to 2/240's ; this type of yarn, particularly rayon and cotton, appears to be gaining favour with manufacturers of underwear. Pure rubber yarns were not shown in any quantity and, except for special fabrics and hose tops, this yarn does not appear to be of much interest to the hosiery trade. A new yarn made of viscose and rubber, mixed in the spinning process, was of interest, the viscose giving lustre and a silky finish to the knitted and woven fabrics made with this yarn. The display of pure silk yarns illustrates the continued interest taken in crêpe or high twist effects ; silk and rayon mixtures were also noticed in various forms for the underwear trade.

Winding Machinery

Many improvements were noticed on winding machines, particularly on those used for winding on cones. Increased speeds on cotton coning machines have been made possible by the use of the rotary traverse, the absence of thread

guides and the cams hitherto used to move these contributing to smoothness of running, quietness, and less chafing of the yarn.

The modern trend was illustrated by one model which was stream-lined, had enclosed mechanism to keep out the dust and lint and had centralised oiling, thus making maintenance and cleaning as simple as possible.

Spindleless winders, where the bobbins were held by two ball-bearing centres, which allows one hand doffing, were fitted with twin cam traverse to give a different motion for every layer of yarn on the bobbin to prevent trapping during unwinding.

V belts are replacing gears on many machines, adjustments being provided so that any slackness of the belt can be taken up or various pulley sizes accommodated for various winding speeds.

The knitter has had some difficulty in controlling the yarn when knitting rayon from cone, the yarn falling below the base of the cone when the knitting machine stopped ; this difficulty has been met in one case by the provision of a wooden cone with a concave base in place of the ordinary cardboard cone.

Footwear Machinery

It is gratifying to report that British machine builders of full-fashioned stocking machines are making progress with the single unit machines on which the hose is made in one piece. Although machines were not on view, the split needle bar used in the machine and samples of hosiery were shown.

Considerable space was taken up by the many types of seamless footwear machines, more than twenty types of ribbed footwear machines, made in Leicester, being shown. More attention is being given to the making of a slack welt on this kind of hose, attachments being added to prevent tuck stitches in the welt when a long stitch necessary for the requisite slackness is made. Other features are plating attachments, two feeders to increase production, five feeder striping, draw thread, and an attachment for feeding a rubber thread in the rib-top. Selective transfer of the double ended needle has been further developed and a new range of half-hose with plated pearl stitch designs that are very attractive can now be produced.

True jacquard designs in colour can also be made on the ribs of children's socks, five colours at a first and three colours at a second feeder giving good scope to the designer.

Seamless plain hose machines were shown on two stands only, the only new features noticed were the gusset toe which was formed by the insertion of extra courses, the square heel which is apparently an attempt to imitate in appearance the heel made on the fashioned hose, and the use of smaller hooks on the knitting needles to allow a shorter stitch to be made in the ankle.

Warp Knitting Machines

Increased knitting speeds on locknit looms are again achieved, between 400 and 450 courses per minute being possible with the improvements made in the thread letting-off mechanism and the control of the fabric drawing-off tackle. Considerable interest is now being taken in three bar patterns, where three sets of threads are used to give more scope in pattern production. The use of the cut presser, together with a plain one, demonstrated the possibilities of tuck stitch designing on the loom. Sectional warping is occupying the attention of those in the warp knitting trade ; many machines for this purpose were shown. It will be of interest to see how the trade makes use of this system where the threads are wound direct from cone or spinners bobbin to warp beams varying in width from about eight to thirty inches. The machines are fitted with counters, and some stop automatically when the desired amount of yarn has been warped ; an electrical stop motion is in some cases fitted to each end for broken threads.

Circular Fabric Machines

Improvement in these machines lies mainly in the provision made for producing many types of fabric on one machine.

By a simple alteration in the height of cams it is possible to make plain, fishnet, tuck, or float-stitch designs, thus catering for many types of garment. Machines as fine as 28 needles per inch are used. An ingenious designing method has been devised for which two pattern wheels, each cut to half the gauge of the machine, with one selecting on the odd and the other on the even needles, are used, both wheels working on the one feeder.

Circular rib knitting machines for outerwear have improved welting mechanisms, and on one machine a rib border in two and two or other ribs can be made without shogging the dial, a selective transfer system enabling the stitches of the cylinder needles to be transferred to the needles in the dial. This mechanism can also operate to produce a patterned body of the garment, giving openwork or lace stitch effect with patterns hitherto made on the pearl machine. Machines employing drums and patterning jacks have larger patterning areas due to larger drums, and more butts on the jacks. Provision is made in many cases to allow the machines to be rapidly changed from the heavy tuck patterns, popular during the last two years, to true jacquard fabric in colour.

The terrot type of machine was very prominent, new fabrics for outerwear being made with fleecy and plush attachments; the use of knop yarns with coloured knops, laid in with the fleecy attachment, showing interesting possibilities.

Flat Knitting Machines

These machines again offer increased patterning scope; the multitude of patterns producible on one machine is bewildering.

Selective transfer of needle loops from either needle bed to its partner, added to racking, tucking and laying-in of fancy yarns, still keep these machines to the front for high class garments.

Increased speed on the double system machines, 25 to 30 draws of the cam carriage per minute on machines with 50 to 56 inches of needles, are bringing the production figures nearer to those of the circular machines. Improvements are also noticed on the hand flat machines, an easy change from one and one to two and two rib, which obviates the hand setting of the needles, together with improved cardigan cam systems, give these machines a still wider appeal to manufacturers.

Dyeing and Finishing

This section was of such limited extent this year that it offered little scope for review or criticism. A number of dyeing machines for fabrics or hanks were on view and these, while revealing no outstanding mechanical innovations, all illustrated that the dominance of stainless steel in this field is now complete. Improvement has been mainly confined to methods of construction, the most notable being the butt welding of the stainless steel. This achievement represents a useful advance since rounded corners are now possible and the thorough cleaning of the machines is rendered easy. Another tendency is towards the use of heavier gauges of steel plate which enables the construction of machines up to medium size without the wooden framing and casing which has hitherto been necessary for strength.

Improvements to finishing machines for circular knitted fabrics have been designed to secure greater speed and ease of operation together with better control of the fabric to prevent distortion of the wale. A working scale model of a hose finishing plant was an interesting exhibit, illustrating modern tendencies in this branch of finishing and allowing inspection of the various stages of processing. The popularity of the steam press as a finishing machine for garments was made evident by the number of these appliances on show and a new steaming finish for silk and rayon garments was a feature of interest.

Miscellaneous Section

No exhibition can be considered to be complete without a display of accessories to manufacture and this section was maintained at its accustomed high level. Individual mention of these exhibits is impossible but practically every necessary auxiliary for hosiery manufacture was on view including needles, lubricants, humidifiers, etc. The smallwares side of the industry was well represented by machines for braiding, and tape and label manufacture and the office equipment exhibits deserve mention. The modern applications of stainless steel in all sections of textile manufacture were shown for the first time.

In conclusion, the promoters of this exhibition are to be congratulated on their successful organisation of a complete review of modern progress in the hosiery and knitting industry.

Welsh Textiles Exhibition: London

October 6th - 9th, 1936

In its woollen industry, Wales possesses one of the oldest crafts in the country. The history of the trade can be traced back many hundreds of years, for long before the introduction of machinery, each home possessed its own spinning wheel and hand loom.

To-day, there are some 120 small woollen mills in Wales, ranging from individual hand-loom weavers to factories employing a considerable number of hands. These factories are to be found in nearly every county in Wales, but mainly in West Wales.

Ten years ago, the University of Wales became interested in this Industry, and after an extensive survey of its conditions, they decided to appoint a Technical Officer to assist these rural manufacturers. The service so rendered by the University of Wales has been the means of helping many manufacturers to improve and modernise their cloths, and the Industry is slowly reviving and attaining a new position in the industrial life of the Principality.

One of the first developments in the new scheme was the setting up of the Welsh Textiles Association Ltd. This Association comprises most of the woollen manufacturers in Wales, and it serves to give guidance and publicity to the Industry and generally to assist its members in their fight for existence.

The Welsh Textiles Association Ltd. recently held an exhibition of Welsh Woollen Materials at the London Welsh Hall, Mecklenburgh Square, London, W.C.1. This was the first attempt to bring together and to arouse interest in the many varied woollen materials made in the small rural mills of Wales.

All the materials on display had been specially selected by the organisers, and the exhibition served to show the progress which has been made in recent years by the Welsh mills in the improvement of colour and design in their cloths.

The hall was draped with lengths of cloths which included light-weight dress cloths, coatings, dress flannels, suitings and furnishing cloths. There were, in addition, displays of knitting wool, scarves, ties, travelling rugs, blankets, quilts and stair carpet.

There were two exhibits of particular interest. One consisted of suiting cloth and travelling rugs made from the natural brown wool of the Welsh sheep, and the second of the traditional Welsh quilt (woven on the interchanging double cloth principle) adapted for use as a carpet with modern furniture.