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PROCEEDINGS

YORKSHIRE SECTION.

Meeting at Bradford, 9th March, 1922, Mr. John F. White in the Chair.

ECONOMICS IN ORGANISATION OF TEXTILE FACTORY LAYOUTS.

By P. T. RUNTON.

At the commencement of his paper, Mr. RUNTON gave it as his considered opinion after thirty years' experience that "we have too many people doing jobs in mills without the co-related knowledge of the preceding or sequential matters involved." There was the machine-maker, the boilermaker, the engine builder, the heating fitter, lighting erector, building contractor, probably an architect or engineer, and the man with every kind of device each of which was saving so much per cent. until one might expect to be able to run a plant for nothing. Each was concerned in his own allotment, and each a swimmer. Who was directing and supervising them all? The employer—the very man who should have his sole attention directed upon that in which he deals, the markets, production and profits, not being technically trained and unable to devote a fraction of the time really necessary in quiet thought, research, or technical organisation. The best technical advice always paid, no matter what the cost.

No new scheme or re-organisation should be embarked upon before a complete review of all proposed or existing plant was made and balanced and a finished scheme of layout made in proper sequential working order, eliminating all non-essentials. That involved every machine and service being worked out before any attempt was made to clothe such proposals with new buildings, alterations, or additions. And who was to undertake it—the employer or proprietor, the machine-maker, the contractor, the architect, or engineer? The machine-maker was out to sell his machinery; the professional man wanted a building erecting, and so on. But what does the employer want? He should want the most economical and up-to-date scheme available. Does he always get it?

Mr. RUNTON expressed the opinion that much of the inefficiency existing was due to the fact that employers generally had not encouraged the existence of the type of highly-trained technical men necessary to industry. It was a costly training which, in the ordinary way, few men had either the means or the courage to undertake. So they saw many possible "winners" fail because the layout had not been worked out by one capable of exercising the technical imaginative faculty enabling all the various units and dependent parts to be brought together as a homogeneous whole. That was the treatment which industry, if it had a voice, would cry out for.

Indulging in a little friendly criticism of suppliers, Mr. RUNTON asked if they were in a position to form a correct judgment without complete knowledge of the co-relation of the adjunctive services and workings? Did such procedure tend to economical results? He feared it was often unwise, for, while their machines did their work, the supplier was not always able to advise as to the best methods or the most economical. Advisers should not be afraid of condemning a scheme or idea when advising an employer on his requirements.

Proceeding to deal with the economics of factory layouts, Mr. RUNTON urged the importance of the primary work being thorough. Before one could form any opinion

based on sound economics, it was necessary first to understand the particular trade processes, then to have particulars of the plant and see that it was balanced with the basic unit, and, lastly, to make a diagrammatic plan of the plant, tracing the raw materials on all its journeyings until it became the finished product ready for the rails. Then, and then only, could they set about clothing their scheme in an effective manner. How often one found with many people that first cost was the only consideration. They overlooked the fact that it was not the first cost which counted ultimately, but the cost to maintain in relation to production. Therefore, quality and being up-to-date had to be considered simultaneously with first cost. Next in importance was the necessity of providing every modern available appliance which would save labour, give economy with efficiency, and increased production.

The power plant might be described as the soul of the factory, and the boiler-houses as the stomach. Yet how often one found them placed with total disregard for the work they had to perform. The power plant and central transmission or head shafts should be placed as centrally to the load as possible having regard to access and working space for removals, &c., replacements, and sufficient room for modern transport to move about in.

After reference to the relationship of flues, economisers, and chimneys, Mr. RUNTON spoke on the advisability of secondary services for use when the engine power was not available, especially motors for boilerhouse plant, stokers, economisers, pumps, and coal elevators.

Having dealt with the re-organising of existing works, Mr. RUNTON proceeded to describe a new scheme. He spoke of the importance of site selection and the layout of internal roads, proper room for passing if haulage and similar losses were to be eliminated, roads intercepting or sectionising various departments, so preventing serious loss in case of fire; fire service, drainage, effluent-water services, and the like. Nothing should be left to be settled afterwards.

A block plan was shown of a new scheme two-thirds worsted and one-third woollen, with all departments from start to finish, and entirely self-contained. Plans, he said, were merely the means to the end, however; it was the technical imaginative faculty which counted. The designing board, or more correctly speaking the thinking department, told in the factory. To meet the crying need of the industry, why should not employers co-operate and form their own expert technical departments in groups of reasonable and manageable size with central stores, laboratories, &c.? He knew of one particular trade where that was being done by small private limited liability companies, limited to the number of members in each case, supplying their own needs with much saving and greater efficiency, because one super-skilled man was thinking out the same thing as a dozen others would have been, and that left employers free to devote their energies to production, markets, and so on.

DISCUSSION.

Mr. G. W. CHADWICK (Leeds) said he noticed, in one of the plans shown, a line across a building which was presumably a drain. The idea, apparently, was to shorten the line, but was it desirable to run a drain in that way under a floor on which there would be machinery? Would it not be costly to repair the drain if there were a breakage? He noticed, also, the drains running down the centre of the roads. What would be the depth of those drains? At his own place they had run the drains under the causeway, where there was no heavy traffic. What did Mr. Runton think of that idea? In another plan, he noticed the office placed at the corner of the site. Was this preferable to the centre? He could understand that there might be a point about not desiring travellers to see too much of the works, but would it not be more central from the point of view of consultations with foremen, and so on, to have a central position for the office?

Mr. ICKRINGILL referred to the distance between the boiler-house and the power-house as indicated on a plan shown. Were they to assume that electric power was used, or had the steam to be carried from the boiler-house to the power-house?

Mr. W. BINNS asked Mr. Runton what he thought about turbo-electric direct drive in mills, and also the turbo direct drive without electric transmission.

Mr. H. KITCHIN said he noticed that the flue of the chimney from the boilers, after passing through the economisers, was at right angles. Was it an advantage to have

a right-angle flue? With regard to heating, there were in mills many miles of piping for the radiation of heat. Mr. Runton had mentioned a case in which economy had been effected by reducing the pressure from 110 to 40. What economy was actually achieved? Did the same amount of steam from the boilers heat more room or was it a question of saving fuel?

Mr. ICKRINGILL referred to the point made by Mr. Runton with regard to easier access for flue cleaning and the inspection of the boiler itself. Would Mr. Runton give them an idea as to how one of the latest schemes worked?

Mr. J. H. BINNS asked if it was not a fact that some of the latest devices for flue cleaning created a nuisance to surrounding property by discharging dust and grit.

Mr. BEANLAND (Clayton West) said he would like more information as to the relative capacity of the buildings. He was more interested in the block type of mill used for spinning. Did Mr. Runton recommend that drawing, roving, spinning, twisting, and winding should be kept separate, or each room be self-contained from drawing right through?

Mr. RUNTON, in reply, dealt first with the questions raised by Mr. Chadwick. He said the line across the building referred to did not indicate a drain. The whole of the water for the tanks, the dyehouse, the finishing processes, and the sprinkler, was taken from a reservoir in the corner of the site. The line indicated a concrete aqueduct from the reservoir or dam. The depth at which drains should be laid depended upon the falls and levels to be contended with. Any drain lower than five feet would be safe from damage by the load on the surface. With regard to the office being placed at the corner, the whole of the traffic worked down to it in that position. All visitors, whether buyers or travellers, had easy access to the office, which was adjacent to the pattern rooms and warehouses. It was only necessary to communicate with the heads of the departments to make enquiries, and with a system of telephonic intercommunication it would in many cases not be necessary to summon the head of the department to the office. A telephone message would suffice. There was a question with regard to the distance from the boilers to the power-house. It was merely process work. There was a 2,000 kw. electric plant. He could not reply to the question about turbo-electric drive. That was a matter of detail. He was dealing with main principles. With regard to the chimney flue being at right angles, they would notice from the detailed plan that the flue was fed into the chimney from the economisers and the centre of the flue was the direct centre of the economiser. The reason for the flue being some distance away from the chimney was that sufficient room was left for two more boilers to go in there, or they could put a turbo-generator sub-station there in case the power companies altered their conditions.

Mr. KITCHIN said the draught would have to go round a corner.

Mr. RUNTON said that would make no difference. Continuing to deal with the question with regard to heating, he said if they reduced the pressure from 100 to 40 there was an increase in capacity of 120 per cent.

Mr. BINNS asked for further information with regard to the flue cleaning.

Mr. RUNTON said that on the top of the boilers there were control valves, three or four together. They simply turned each one on and then shut it off, in turn, and the dust was blown through into the by-pass chambers. On the top, there were sprinkler pipes connecting with the hoppers, and the dust passed through into the water and settled down there. All they had to do was to open a steel trap and away it went. He was not prepared to answer Mr. Beanland's question because that involved details, and, as he had already said, he was dealing only with main principles.

The CHAIRMAN said that Mr. Runton had rendered great service to the industry by the manner in which he had dealt with the whole question. He had been particularly interested in what had been said about the heating of factories. He had had experience in another country where the use of hot air and fresh air had been used very effectively. In the hot season, great benefit had been derived from the introduction of fresh air into the factory.

Mr. CHADWICK, in moving a vote of thanks to Mr. Runton, said he had made them feel that it would be a good thing if they could have their factories bombed so that they could make a fresh start. A good deal of their trouble to-day was that they had not sufficient capital to enable them to deal with their defects in construction and

layout as they would like. In Yorkshire, they often envied those in Lancashire who could lay out factories knowing exactly how much to a foot per spindle was required in laying out land and machinery. His firm was engaged in woollen and worsted manufacturing, and the trouble was that the utility of part of their machinery might shrink, whilst there would be considerable development in another part. He thought they ought to pay more attention to comfort and general surroundings in planning offices and factories, and, in view of the amount of time they spent in them, it was surprising that they did not give more consideration to these things. Perhaps in ten years' time when things worked round they would be able to spend more money in developments on the lines indicated by Mr. Runton. They were certainly now getting more co-ordination between the manufacturer and the machine-maker, and that was all to the good.

Mr. J. H. BINNS, in seconding, said he had been particularly interested in the lecture because his firm were engaged in the layout of a new factory and he found that they had adopted many of the ideas, particularly in the reduction of the number of routes, which Mr. Runton had advocated. They were often bewildered by the varying advice which was given to them by architects, machine-makers, and engine builders, and it would be an advantage if they could go to someone who could give them really expert advice right through.

The CHAIRMAN said the Yorkshire Section of the Textile Institute was particularly indebted to Mr. Runton for the great care which he had taken in preparing his lecture, and particularly in getting out so many plans.

Mr. RUNTON, in reply, said there had not been much encouragement in the past for the industrial engineer. It required a good deal of courage for a young man to embark upon such a profession in view of the long time which would elapse during the necessary training, particularly in view of the reluctance of employers to entrust the investment of their capital in new factories to young men, but he could assure them that there were industrial engineers capable of doing the work satisfactorily.

LANCASHIRE SECTION.

Meeting at Manchester, 14th March, 1922, Mr. W. Greenwood, M.P., in the Chair.

THE HUMAN ELEMENT IN INDUSTRY.

By W. HARRISON, M.Sc.

In most cases a discussion on the Human Factor in Industry resolves itself into a discussion on the efficiency of the numerous operatives employed in industry. I do not propose to limit my paper to this section because it must be clear to outsiders that the operatives do not represent the only human factor entering into the conduct of a business. I have had many opportunities during the last 15 years of learning a good deal about the several sides of business without getting so involved in any particular side as to forget others. It is on this account only that I venture to commence a discussion. I shall speak as an observer of many sections and not as an active worker in any.

Everyone will agree that the influence of any one individual on a body of men with whom he may get into contact is greater the higher the position held by that individual; hence, his capacity for distributing good or bad is greater. A mistake on the part of an owner or a manager is likely to cause much more trouble than one on the part of an operative. We see, therefore, that owners and managers are, if anything, the most important human factor in industry, and until they have put themselves in order the other human factors cannot be properly balanced.

One point I wish to make is that men who are intended for managerial positions should receive a training properly adapted to requirements, and one of the most important subjects is that of human nature. We must realise that a man intended for a managerial position as a rule takes less personal interest in his own education than one who has to make his own way in the world. Any teacher in school, college, or university will confirm this. The result is that such men take up their duties with a severe handicap. Knowing the unfortunate results of this, many

owners believe in putting their sons into the business at an early age. This gives them business knowledge, but it is probably the same knowledge which may have been in that business for many years, and what a young man really wants is knowledge which will help him to run the business under newer conditions. Parents should themselves take more personal interest in the training of their sons, and pay periodical visits to the institution at which they are being trained.

Recent developments have enlarged our knowledge of the factors governing human behaviour. These factors operate in all cases, human nature being essentially the same all the world over. Self-preservation not only refers to life, but to status and position in life. Nutrition applies not only to food consumption, but to food utilisation, and is, therefore, governed by health, and by fatigue, worry, and other factors which modify health. Herd instinct has a much greater influence in life than is generally supposed. Personally, I do not think that human behaviour can be fully explained on the basis of these instincts. There are at least two other factors—the first, chemical effects within the body due to the action of external as well as internal influences, and the other, what we may call the intellectual instinct which arises as a direct consequence of the development of intellect.

To-day, business is a very complicated matter, and industrial systems have developed in most unlooked-for directions. There must be something radically wrong with an industrial system which leaves half the operatives unemployed and the other half suffering from fatigue or discontent. To remedy this requires a man with training which adapts him for diagnosing the cause of industrial unrest and curing it with the same degree of certainty as a qualified doctor diagnoses and cures diseases of the human body. Unfortunately, industry has been like the sick man who would not admit himself sick until he was unable to carry on. The result is that no doctors have been called in, neither has there seemed sufficient demand to encourage men to qualify themselves for the work. The result is that industrial troubles have gone uncured and therefore become worse. Even to-day, with big troubles before us and these growing larger every year, practically no men are going in for the study of those subjects which would assist in the cure. We try to settle the troubles with household remedies and feel surprised when they break out again in more virulent form.

In industrial life, self-preservation mainly refers to the preservation of one's status or position in life, and, when this can only be attended to at the expense of someone else, then some kind of warfare is bound to result, and like all other kinds of warfare the battle goes to the strong whether it be physically or mentally.

The various employers' associations and trades union organisations illustrate the development of self-preservation in the direction of mass action primarily connected with the herd instinct. Warfare between masses is a much more serious problem than warfare between individuals and should be avoided wherever possible. Whoever wins in a trade dispute, the inevitable result is a loss of efficiency. A friendly spirit between employers and employed will do more towards increasing efficiency than any industrial dispute. If operatives are forced into what they consider an unfair bargain, sooner or later they will try to balance it. A lockout when trade is bad is met by a strike when trade is good, and both sides lose. It is human nature, and one cannot get away from it. The men are convinced that the employers wish to destroy their biggest weapon of self-defence, and that is a great stimulus to the instinct of self-preservation. An attitude of diplomacy and not challenge seems to be required.

Insecurity of employment is also a powerful stimulus to the instinct of self-preservation. When orders are scarce, large output means less time of employment. Hence, as a rule, workers reduce their output as much as they can or dare. Unfortunately, they do not increase their output in the same relation when trade is very good, because they either lack incentive or knowledge of the conditions. They are told when trade is bad, but not always when trade is good. The removal of this insecurity of employment would do much towards increasing output provided that rigid conditions were laid down. There is, of course, a chance that operatives

might take life easy if employment were absolutely secure; hence, one must lay down some rigid conditions for permanency. There is no doubt that individual industries could provide security of employment or insure their own workers against unemployment at less cost than by the present system of doles, for which industry has to pay through the nose in the form of taxation. Moreover, it could be done in such a manner as not to encourage laziness. It may be thought that as taxation applies to the whole of the community, industries only pay a proportion of the cost of doles, but, as the money paid by the community lessens the amounts available for the purchase of manufactured commodities, the result is a direct loss to industry as being the only source of wealth in an industrial community. Any more efficient system—and few can or will say that government systems are efficient—will eventually be a benefit to industry.

The number of cases of inefficiency caused as the direct result of faulty nutrition is far greater than is usually imagined. In the operative it causes inability to work hard, and in a foreman it may result in bad temper or general incapacity to supervise. Malnutrition may be caused by other things than wrong food, such as eating in a crouching posture, or perhaps sitting in a corner of the works. Another cause is the attempt to tackle hard physical or mental work immediately after a meal, when blood circulation is required by the digestive organs. This applies most particularly to sedentary workers and those operatives not physically fit.

The herd instinct plays a much bigger part in industry than appears at first sight. According to Trotter, on account of this instinct, men are intolerant and fearful of solitude either physical or mental. This intolerance is the cause of the mental fixity and intellectual incuriousness which he constantly displays to an extent very remarkable for an animal with so large a brain. The resistance to a new idea is primarily a matter of prejudice, the development of intellectual objections, just or otherwise, being a secondary process, in spite of the common delusion to the contrary. It is not only the workpeople who object to the introduction of a new machine in a works. Many owners and managers are quite as difficult to convince on the value of a new machine, and they are always ready to produce the excuse that the workers would not take to the new idea. Once a machine maker has sold a few machines, he proceeds to inform a probable customer that so-and-so and so-and-so have bought it. The herd instinct comes into play and the machine is bought not because it is an efficient machine, but because so-and-so has one. Trotter also says that man on the average is more sensitive to the voice of the herd than to any other influence. It is the source of his moral codes. It can endow him with energy, courage, and endurance, and can as easily take these away. During the war, we saw men moved to energy, courage and endurance by this very instinct, and, after the war, we saw the same men moved to slackness, doubt, and discontent. One must remember that the herd follows a leader, but it must be one of the herd. A leader from another herd of an entirely different class is seldom followed. Hence, to influence the crowd one must associate oneself with it, become one of it, at least for the time being. I am fully convinced that the workers of this country can be influenced in the right direction just as easily as they are now influenced in the wrong solely by virtue of the herd instinct. One must not forget, however, that this instinct moves men of all classes. Employers have been led into wrong actions against the workpeople, often against their better judgment, but having voted in favour of the action when influenced by the voice of the herd they feel they have no choice but to keep their word—in fact, keeping one's word is also an action caused by the herd instinct. One cannot get away from the effect of this instinct unless one is prepared to face the consequences. To act in a manner entirely contrary to the herd results in one being ignored and to have to face that solitude which the herd instinct makes intolerable to man. Thus does the human being, moved by the herd instinct, react towards his fellow men should they be tainted with originality or react to knowledge instead of to instinct. Yet, the world would not make much progress without those persons cursed with originality. The herd instinct wants a curb put upon it, and that can only be done

by conscious effort after fully recognising its actions. Intellect is the only counter to instincts.

The need for broad education was never greater than it is to-day, and by broad education I do not mean that memory training and memory examination system of to-day which we are led by the herd instinct to believe is true education. I mean training of the logical faculties, which, unfortunately, is neglected for the sake of red tapism. When we say that the education which was good enough for us is good enough for our sons and grandsons, we are acting in response to herd instinct and not to reason. Reason tells us that the world is changing continuously, and that education must necessarily change with the times.

Having dealt so far with the effect of primary instincts on industry, I will proceed to refer to a few special factors, *i.e.*, movement study, fatigue study, and selection study.

In the textile industry, the question of elbow room is very important. Very often, the first attempts to alter a method of handling results in failure; this happens because the old methods have really been worked out by experiments carried out, perhaps unsystematically, by the operatives over a long period. If one wishes to make use of movement study as a means of increasing efficiency one must create interest in the newer methods. Very often this is only a question of tact. Leave a workman sufficient reason or opportunity for convincing himself that he has developed the new method himself and at once he becomes keenly interested. If he should have been instrumental in influencing the development, see that he gets full credit for it, for the more generous one is in this respect the more one will gain in the long run.

As regards methods of stimulating interest in new methods, perhaps the best is that of arranging a bonus for increased efficiency. There are several systems in use which would take some considerable time to discuss. The best plan appears to be that of Emerson, according to which a minimum wage is paid and a bonus which increases in percentage as the output increases. As every successive increase in output of any article requires greater and greater effort, this system provides wages proportional to the effort made. No system which increases output at the expense of permanency of employment can exist for long. The operatives think that if merchants are permitted to hold up stocks to keep the prices up, then they themselves have a right to hold up labour for high wages or permanency of employment. Labour is the commodity which the operative has for sale.

The question of fatigue is one which had a great deal of attention during the war when a few operatives had to do the work of many. It was found that in most cases increased production resulted from shortening the working hours, by instituting rest pauses, and by careful attention to ventilation and humidity. Nowadays, with the considerable reduction in trade, there is no need for the operatives to overwork themselves, and, except in the certain cases of heavy manual labour, it cannot be said that fatigue is so very common. Managers would in fact be glad to have a few cases of real physical fatigue to deal with. The most prevalent form of fatigue is nerve fatigue, and this is less common among operatives than among those in control. This form of fatigue results from causes not usually associated directly with the work done. Anything which detracts to a considerable extent from one's attention to work tends to produce nerve fatigue. It may be the noise of machinery, and anything of a periodic nature is very upsetting.

Of the large number of persons engaged in industry, few are in the position for which they are most fitted. Many persons accept the advice of friends or relatives and choose the wrong occupation; others follow the occupation of their father or grandfather, very often under compulsion of one kind or another. Others are actuated by expected influence or attracted by interest and imagination to occupations for which they have no real aptitude. Thus, efficiency is minimised. Little blame can be attached to any of the employees. In the early days of the war there was a big demand for chemists and a great deal was said about the future of chemistry. This year, there are nearly 2,000 young men studying chemistry, whilst last year and the year before the number was greater. Thus,

at least 5,000 men have been trained as chemists since the war and there are not openings for one-tenth the number because the value of a chemist in industry is not understood. I think we ought to advise the colleges and universities concerning the kind of man we are likely to want in the next few years so that such a surplus of specialised service cannot arise. Personally, I think specialisation in the colleges and universities should be avoided. A man has to make the best of the opportunities which arise and not wait for an opening specially suited to his training. Adaptability, backed by general knowledge, is the best foundation for a business career. If a boy has special abilities these ought to be cultivated fully, but other possibilities should not be neglected. The completion of a business training should take place in the factory where the variety of occupation leaves open the opportunities for adaptation to particular jobs.

The human factor in industry is a very much bigger thing than is usually imagined. The condition of industry to-day, or at any time, is not due to any single human factor but to the actions and interactions of the various human factors on one another. The actions of every section are governed by circumstances modified as they are by the various instincts to which man must react. The action of any one section necessarily produces a reaction in the other sections which tends to balance the effect of the first. The idea that business is ruled solely and entirely by economic law is a fallacy which ought to be got rid of as soon as possible. Based on the arguments of economic law, we construct business in such a way that commodities are manufactured quicker than purchasing power is distributed. Douglas concludes from this that manufactured articles should be sold at less than the cost of manufacture so that purchasing power in the form of wages should be distributed as quickly as commodities. Operatives, on the other hand, conclude that output must be restricted so that commodities are made as slow as purchasing power is distributed. As both of these are logical conclusions based on economic law and as neither remedy appears sound to business men, it follows that economic law is either unsound or not the main factor in business. The human factor is and will always remain the main factor in business.

NOTES AND NOTICES

NEW MEMBERS OF THE INSTITUTE

At a meeting of the Council of the Institute held at Manchester, on Wednesday, 21st June, 1922, the following applicants were elected to membership:—Bertram Davenport (Manchester), J. Hartley (Colne), Andrew Hodge (Stockport and Manchester), O. Jones (Sidcup, Kent), George Bilsborrow (representing Moorbrook Mill Co., Ltd., Preston), M. B. Mande (Amarapura, India), J. L. Pullar (Bridge of Allan), A. C. Swindells (Manchester), B. H. Wainwright (Stalybridge), E. T. Yates (Manchester), Harry Richardson (Bradford), H. Pontefract (Huddersfield), W. Bosworth (representing The Oldham Technical Association and Old Students' Union), Cyril W. R. Cann (Plymouth), Abraham Lomax (representing Ainsworth Mercerising Co., Ltd., Bolton), James K. Kerfoot (Manchester), H. R. Briton-Jones (Giza, Egypt), John Brandwood (Bury), and J. Scrimgeour (Farnworth). P. E. Crompton-Smith (Manchester) was elected to Junior Membership.

THE INSTITUTE AND TEXTILE SOCIETIES

The movement directed towards co-operation on the part of the Textile Institute and Textile Societies has been advanced a further stage by the holding of sectional conferences during the past month—one at Bradford when representatives of various Yorkshire societies and of the Yorkshire Section Committee of the Institute met and discussed several items, and another at Manchester, when representatives of the Lancashire Section Committee of the Institute and of societies in Lancashire considered proposals. In the case of the Bradford meeting, it was decided that

each organisation should exchange draft syllabuses of lectures as soon as completed. It was also agreed that textile societies should allocate one or more lectures each session to the Textile Institute, these lectures to be run jointly, the Institute to provide the lecturer after receipt of suggested subject from the society concerned and the society to provide the meeting-room accommodation. A sub-committee was appointed to prepare a panel or list of lecturers, and it was decided to deal finally with this matter at a general joint conference. In the case of the meeting at Manchester, it was decided that syllabuses, when complete, should be sent in to the General Secretary of the Textile Institute, so that a full list in order of dates might be prepared, printed in the Journal of the Institute, and reprints sent to the secretaries of the various societies. It was also agreed—even apart from lectures—that in the event of any society experiencing real difficulty in securing the services of a lecturer on a special subject the Institute should be asked to assist. A further decision was that each society provide each session for one lecture under joint auspices with the Institute, and, in cases where an Institute lecture was provided, the local society was urged to issue invitations to other organisations in the locality whose members might be interested. With regard to the proposed panel of lecturers, the societies are invited to furnish names of lecturers and subjects, full list to be retained at the Institute. An important suggestion arose towards the close of the meeting at Manchester—that an annual combined conference should be held for the discussion of various matters of interest to the industry. The meeting even provided an example of the kind of subject which might receive attention at such a conference by passing a resolution recommending to the Council of the Textile Institute the consideration of helping forward the movement for special instruction to mill overlookers, as inaugurated by Mr. W. Wilkinson, of the Blackburn Technical College, by an approach to the various cotton spinners' and manufacturers' organisations with a view to securing their sympathy and co-operation in the development of the movement.

TESTING HOUSE AND LABORATORY

A further stage has been reached in the gradual development of the Manchester Chamber of Commerce Testing House and Laboratory. Towards the end of 1921, the premises occupied since 1900 in the Royal Exchange buildings were vacated and more commodious premises were arranged for in the newly-erected and enlarged Exchange. The new premises have now been opened, and during the latter part of last month special visits of inspection were organised. Carefully planned with a view to facilitating the work undertaken, many conveniences have been introduced which, hitherto, were not available. Particular attention has been paid to the lighting, and, for the most part, large windows with North aspect have been provided. Electric power is employed for driving testing machines and other apparatus. The entire equipment, in fact, has been completely overhauled and important additions have been made. An illustrated brochure, descriptive of the activities and equipment of the institution, has been issued. In regard to the work of the Testing House, it is pointed out that whereas the intention of the founders was mainly to provide means whereby local firms might obtain official tests of cotton yarn, yet, to-day "cotton yarn testing constitutes but a small section of the institution's activities, which, in addition to practically every description of physical and chemical testing commonly applied to the different textile fibres, yarns, and fabrics, include the inspection of textile materials, the testing of wood pulp, and the analysis of various substances used in industry."

PRESIDENT OF THE SILK ASSOCIATION

Mr. Frank J. Farrell, M.Sc., director and manager of the firm of Messrs. Grout & Co. Ltd., silk manufacturers, Gt. Yarmouth, has been elected President of the Silk Association, in succession to the late Mr. H. G. Tetley. Mr. Farrell has, for many years, occupied a leading position in relation to the activities of the

association named. He is deputy-chairman of the British Silk Research Association. When the Industrial Council for the silk industry was formed in 1918, Mr. Farrell was appointed as first chairman, and he remained in the office for two years. He has also contributed useful service as a member of the Advisory Committee on Silk Production.

BRAZIL AS A COTTON GROWING COUNTRY

The arrangements for the International Cotton Conference, which is to take place at Rio de Janeiro, Brazil, from the 15th to 26th October next, are evidently proceeding satisfactorily, and Mr. Arno S. Pearse, who is acting as honorary oversea member of the Executive Committee of the Conference, has been able to issue a programme which outlines subjects to be dealt with. Added interest is given to the fixture as a result of the existing cotton supply situation. Mr. Pearse, who accompanied the special Mission of Investigation in Brazil in 1921, has expressed the opinion that Brazil offers the most immediate possibilities for extension of cultivation, provided the necessary amount of individual enterprise can be secured to co-operate with the Brazilian Government. The forthcoming conference has arisen in consequence of a suggestion made by Mr. Pearse on the occasion of the visit of the Mission already referred to. The central idea of the fixture is to bring the whole question of cotton cultivation in Brazil to the attention of those interested, and the conference has been timed to synchronise with the Independence Centenary festivities in the Autumn of this year. The suggestion was warmly received and has been fully acted upon. The event is being organised by the National Agricultural Society of Brazil, and will be held under the auspices of the Brazilian Government. The question of Brazilian cotton supplies was discussed at the recent International Conference at Stockholm, and there was common agreement that Brazil offers great possibilities, not only from the point of view of short staple, but also of long staple cotton. A representative of the Brazilian Government attended at Stockholm, and, on behalf of the President of the United States of Brazil, pleaded for a good attendance at the forthcoming Rio conference of cotton spinners and manufacturers from various countries. He pointed out that the Brazilian Government alone could not successfully carry forward the suggested project, and it would be necessary, if really effective results were to accrue, to secure co-operation and advice from many directions. The subjects with which it is proposed to deal include the following:—(1) Cotton in Brazil: General Enquiry on cotton cultivation in the different Brazilian States and abroad; (2) Improvement of cotton growing in Brazil; (3) Diseases and Pests of cotton; (4) Cotton of the North-Eastern States of Brazil; (5) Ginning and handling of cotton and bye-products; (6) Intensive cotton cultivation: The Federal Cotton Department; (7) Classification of cotton and establishment of commercial types: Commerce of Cotton; (8) The cotton spinning and weaving mills and internal consumption: Export of cotton goods; (9) Economical defence of cotton; and (10) Export of cotton and bye-products: Taxes and freights. Mr. Arno S. Pearse would be pleased to provide any further particulars relating to the conference on request.

WOOL TEXTILES AND UNEMPLOYMENT

America gives a lead which other countries might well copy in the compilation of a monthly return of active and idle machinery in the textile trades. Probably, the figures are not strictly accurate, but the margin of error cannot be great, and they furnish a much more reliable index to the condition of the industry than is provided by our own unemployment statistics supplemented by market reports. Especially in the manufacturing section of the wool-textile industry, these sources of information are quite fallacious. There is a large floating population of women who have been trained as weavers, but who can without serious hardship make themselves useful at home, and the extent to which they figure in the unemployment returns is doubtful. Moreover, in busy times, the running of the looms depends on a steady inflow of recruits to replace the large number who marry and

leave the mill, and it is uncertain to what extent this inflow is now being provided for by the training of girls. It is quite possible that a large percentage of looms might be idle although there were no visible unemployment. A return of employed and unemployed machinery, giving, on the American model, the percentage of idle hours during the week or month, would exhibit the condition of the industry with reasonable accuracy. In this respect, the market-reports published by local newspapers and trade journals are not of real value, and, in fact, such reports are mainly devoted to the combing and spinning sections of the industry. The estimates which are published from time to time of the number of looms running are the merest guess-work, though of course the few men who are thoroughly conversant with all sections of the trade may now and then make a good guess. There is, naturally, a strong prejudice among manufacturers against giving information of the kind suggested, especially when trade is bad, but there should be no difficulty in maintaining absolute secrecy as to the returns made by individual firms.—F. J. N.

THE FRENCH TARIFFS.

Mr. Streat, the Secretary of the Manchester Chamber of Commerce, did a little useful propaganda work when recently in Paris on business connected with international arbitration. In brief, he had an interview with the Minister at the Commercial Department of the French Foreign Office, and in a friendly and unofficial way discussed with him the high rate of duty charged on cotton goods entering France. In the course of the conversation, it was pointed out to the Minister that there was objection in Lancashire to the unduly high level of the duties and to the continuance of the system of "co-efficients of increase," in view of the fact that more normal prices now obtained. M. Seydoux, the Minister in question, promised to look into any figures submitted, and, as a consequence, data compiled by the Manchester Chamber of Commerce was promised him, by way of an unofficial communication to be sent without delay. A similar interview was obtained with M. Serruys, the Chief of the Tariffs Department of the French Ministry of Commerce. Out of it, it is to be hoped, good will come.

—R. C.

IN LIGHTER VEIN.

The long depression notwithstanding, the textile industry can still find bright spirits and an outlet for them. As an illustration, the finishing trades have found ways and means to combine business with pleasure—on the golf links. In stricter fact, what is happening is a series of tournaments on the greens, in which dyers will meet bleachers, the bleachers will meet the finishers, and so on through the round of the finishing sides of the industry. The idea seems to have gathered momentum, and out of it has come a competition for the dyers for a trophy presented by Mr. Vernon Clay, whilst the bleachers will have a friendly tussle for a cup given by Mr. Henry Allen. The idea might be carried still further. There might be competitions between the finishing sections and the spinning and manufacturing sides; it may all help to foster better feeling in the trade. And next time we have a World Cotton Conference on this side a golf competition might very well be introduced in the lighter side of the programme. It is sometimes said that golf to-day is more of a business than a recreation. Why not bring it into business properly and use it to develop the amenities of commercial life? That is the question which would appear to be suggested.

—R. C.

GENERAL ITEMS AND REPORTS

MANCHESTER ASSOCIATION OF IMPORTERS AND EXPORTERS

The annual report of this Association is a useful document recording outstanding events of the past year as affecting international trade. It is observed that the economic recuperation of this country largely depends on the sane and healthy condition of the international situation, which requires confidence and co-operation in all

spheres of activity. The report contains a particularly well-balanced review of overseas trade and a critical analysis of statistical returns of imports and exports. Shipping and rates of freight are brought under review. The membership of the Association at the end of the past year totalled 381.

ANNUAL REPORT OF BRITISH COTTON GROWING ASSOCIATION

The seventeenth annual report of the Council has been published in pamphlet form (price 6d.) and covers the work of the Association during the year 1921.

The report states that it is not surprising, owing to the deep depression the cotton industry has passed through during the last two years, to find that the consumption of cotton in the United States during 1921 was 1,232,000 bales less than in 1920. At the same time, the total commercial crop for the 1920-21 season was only 11,175,000 bales, as against 12,252,000 bales for the previous season. The quantity of cotton shipped direct from the United States across the Pacific to the Eastern markets is rapidly increasing and is making an appreciable difference in the visible supply of cotton when stocks are low.

The shipping facilities for cotton during the year have been very satisfactory, and the cotton is now coming forward from the various Colonies with less delays than for some years past, whilst, as a result of representations made to the steamship companies, further substantial reductions have been made in freight charges.

It is recorded as satisfactory that African cotton is now in better favour with Lancashire spinners, and now that the different qualities have become more widely known there is a greater demand for the cotton.

The report also deals with the work accomplished in the Colonies, etc., and with regard to the West Indies it is recorded that the planters are complaining that they find it difficult to produce Sea Island cotton at a profit even when it is possible to sell at 27d. to 30d. Notwithstanding the fact that the pink boll-worm now exists in a number of the Islands for its second season, it appears that under the conditions of soil and climatic characteristic of certain of these Islands fairly satisfactory crops of cotton can be produced. The steps taken by the Imperial Department of Agriculture to combat the pest have been most commendable.

The native cotton industry of the Southern Provinces of Nigeria is reported to have been in a very healthy condition, whilst the cultivation of the improved long-stapled cotton in the Northern Provinces continues to show a steady increase. Efforts are being made to revive the native cotton-growing industry in the Muanza district of the Tanganyika Territory, but, unfortunately, the quality of the cotton is rather inferior—due to inadequate methods of seed selection and in grading. In Rhodesia, the agricultural authorities continue hopeful but not over-sanguine as regards the future of cotton-growing, but a number of experiments are being carried out in various districts.

In dealing with Mesopotamia, the report states that, owing to the unsatisfactory political situation which still exists, it has not been possible to adopt any progressive policy. There was a better demand for seed for planting for the 1921-22 crop, and, although progress will necessarily be slow, the prospects for the future are undoubtedly much brighter.

The development in Queensland during the year has been very satisfactory, and the latest reports are to the effect that 20,000 acres are already being cultivated, which should result in a crop of at least 8,000 bales.

The increased cotton production within the Empire during the year—in Uganda, Nigeria and the Sudan—is very gratifying, the report concludes, and, although temporary set-backs are inevitable, there can be no doubt but that the industry in these countries is now firmly established, and that, as larger areas are opened up by transport facilities, the quantities of raw material available for Lancashire spinners and manufacturers will steadily increase.