INDEXED
TECHNOLOGY DIVISION

ASBESTOS

VOL. III. ROCHDALE, OCTOBER, 1920. NO. 12.

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This allegorical drawing, by Bernard Partridge, is our "House Mark." It represents "Asbestos" standing between Civilization and the destructive elements.

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ASBESTOS

VOL. III. ROCHDALE, OCTOBER, 1920. NO. 12.

Thoughts from the Editor's Fireside.

Increased Production and Unemployment.

WORKERS in the Asbestos and Rubber Industry will doubtless have read, and discussed among themselves, the letter which appeared in the Press recently, over the signature of Mr. H. H. Duke, the General Secretary of the Amalgamated Society of India-rubber, Cable, and Asbestos Workers.

Replying to Sir Charles Mandleberg's contention that mass production is in the workers' own interests, Mr. Duke (evidently with regret) says that so far from increased production benefiting the worker, it is at this very moment the direct cause of unemployment.

Upon investigating some instances of unemployment, he has been met with the statement that a certain warehouse is overstocked, and " this is a place where we have given massed production a fair trial."

" As a Trade Union leader," he says —(and *Asbestos* bears witness to the truth of the statement)—" I have advocated in and out of season increased production, not only during the war, when it was so essential for victory, but since then." The result now in the Rubber Industry is that " unemployment is rife. To-day we have the factories either closed down altogether or on short time three and four days a week, with about a quarter of the hands originally employed that have been giving increased and massed production. . . . We were told to go ahead—years of work in front of us; now we have the conditions described. . . . What answer can I give to the workpeople? "

That, as we say in Lancashire, is " a fair question," and must be met.

First, as to the point of fact, we have made careful enquiries, and have failed to find where " unemployment is rife " in the Asbestos and Rubber Industry (there is none at all in our own organisation). Nevertheless, we have no intention of " riding off " on a disputed point of fact. We accept Mr. Duke's statement so far—that, in his capacity as Secretary of the Amalgamation, he has knowledge of some unemployment.

What unemployment obtains, then, is evidently local in character—it is not general. This in itself argues that the condition is not the result of mass production. It is not because " a warehouse " is so full that " we should

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have to take the paper off the walls to put any more goods in," that men are thrown out of work. The world is absolutely clamouring for these goods. What, then, is the answer? Is it not obvious that the answer is to be found in the dislocation of business generally—especially that of transport—and the topsy-turvy state of the World's Production, Markets, and Exchanges?

We do not deny that unemployment may become general. It would be futile to do so. We ask Mr. Duke, however, to review his war-time position, when, in our issue for July, 1918, for instance, he outlined a " Bill of Rights " for the Asbestos and Rubber Industry, and showed in a statesmanlike manner how unemployment could to a great extent be prevented, and its evils be mitigated. The objects of the Bill of Rights were directed to protecting the Industry and its workers from the Mines to the Factory. It comprehended the widest sphere—as it should. It demanded co-operation between employers and workers—as it should. It outlined combined action through Governmental Authorities to the interests of the workers in the Empire's Industry. It did not ignore foreign industries and interests, but its business was the conservation of *our* Industry for *our* workers.

We inserted this draft " Bill of Rights " verbatim. It should be re-read to-day by workers generally, and by Mr. Duke himself (if he will permit the suggestion).

We inserted it " in the hope that all workers in the Asbestos and Rubber Industry will inform themselves of the probable requirements for the successful conduct of business after the war in order to maintain the position of British Industry."

What has been done—(we ask Mr. Duke)—in view of the possibility of unemployment becoming general?

It carries us no farther to say " it suits the employers to have increased production for a time to fill their warehouses up," nor is it quite fair to complain: " We sweat to give the production for that time; afterwards we can starve for all the employers care; we are discharged and thrown on the labour market."

Does Mr. Duke really believe employers delight in the sufferings of the workers? Of course he doesn't. Why not, then, drop this tub-thumping leg-pulling. Mr. Duke has shown he is capable of better things.

The education of the workers in the elementary principles of production, distribution, and consumption is overdue, but the co-operation of Labour Leaders and Employers of Labour with a view to preventive action in each industry—along the lines of Mr. Duke's " Bill of Rights " for our own Industry—is an urgent necessity.

Labour has intentionally restricted production in the past, and it is lamentable that, with the object lessons of the war still in our minds, Mr. Duke should apparently suggest a return to this ignorant and fatal doctrine.

Who benefits by restriction of output? Not the worker! He is the consumer up to somewhere in the neighbourhood of 90 per cent. of the fruits of production—so that he cannot benefit by a policy of " cutting off his nose to spite his face."

The employers cannot, as Mr. Duke asks, " remove this terrible menace of unemployment " of themselves, and we gather a grain of comfort and a ray of

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hope in Mr. Duke's final suggestion that an enquiry be immediately set on foot having for its ultimate object the "removal of the curse of unemployment, with guarantees from the Government and employers combined," and that in the meantime he "will guarantee production," and will co-operate with the employers in order to find a solution.

In so far as our Industry is concerned, there is no reason why the good work should not proceed—we have the machinery in the Joint Industrial Council, and the real Labour Exchange, which Mr. Duke's Amalgamation will presumably now be organising under the Unemployment Insurance Act (which is to be put into operation next month) should go far to reduce the numbers of unemployed by facilitating exchanges and finding situations.

In the meantime, the J.I.C. would be usefully employed in discussing Mr. Duke's production guarantees, which, if and when established, would go far to ensure continuance of both the high wages now obtaining and regular employment.

Editorial Notes.

BLACK DIAMONDS—AND HEARTS.

The miners have lost, and are a discredited force before the electorate of the country. They have not been beaten by "Capital"—nor by political tactics. It is the common sense of their fellow-workers in Industry which has prevailed against the bare-faced attempt of the latest Lord Protector to introduce the principle of Government by Soviet under the guise of giving "something for nothing." There is no need to traverse the history of the affair, or to again tabulate the facts. Those of our readers who are particularly interested in the subject will be well posted (we only appear Quarterly), and the others—those who are interested in the general sense only, will be heartily sick of the whole business. Our object in referring to the subject at all is to utter a warning that the fight for Nationalisation is not finished—it is only beginning—and the "Nationalisation" in the minds of those who are conducting the great campaign is not now "State Nationalisation." This has been dropped, as the recognition of the hopelessness of the struggle against the weight of solid common sense of the British people—and their detestation of "Red talk"—was "borne in upon" intelligencies which had become somewhat bemused by the scene of ultimate Power visualised in a night of Russian bloodshed and chaos. The "Nationalisation" now contended for is a sectional one—chosen on the off-chance of its proving a shorter cut. Though Mr. Smillie declares the miners "are determined that the nation shall own the mines," he does not really mean that. Sometimes he "lets go" in this way: "I don't want efficiency or any other good thing in the mines until the miners are in possession." Again, it is a step towards the "elimination from the control of industry (including shipping, railways, banking, insurance, and other branches of commerce) of the private capitalist, individual or joint stock." Coal is chosen, for the beginning, because coal is the most vital necessity, and because the miners' organisation is the most perfect example of trade union solidarity. The issue, as we repeatedly urge, is a political one. Not one thing, but everything, every move in the game points to a cynical attempt to exploit the nation, and to ride to power upon ignorance and cupidity.

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TRICKERY.

The "No War with Russia" stunt nearly proved a winner. In consenting to Labour, as a Party, dealing direct with Kameneff and Krassin, we believe the Prime Minister had no intention of surrendering diplomacy to the Bolshevik wing of Labour, called The Council of Action. Nevertheless, that would have been the net result, and we congratulate him upon his choice of wide-awake lieutenants. At the very moment of the interview the Soviet Mission in London was pouring out money for Bolshevik propaganda purposes, and there can be little doubt that the affair was arranged as a tricky step in the policy of the extremists, having for its ultimate aim the acquisition of supreme Political Power. Too clever moves of this kind will not advance the Constitutional standing of Labour—we do not suppose they are expected so to do. But neither does such action tend to qualify Labour for Government—or perhaps it is thought to close such avenues against similar tricky action by others, when the great object is attained. Certainly, if the underlying idea of "direct action"—whether in industry, politics, or diplomacy—becomes a habit, sovereign power (now vested in Parliament) will be abrogated, and the State, and Empire, will dissolve into intriguing and warring fragments. We trust no further official conferences with the "British" Soviet caucus will be granted. It is a thing to be closely watched, and not played with.

* * *

WIRELESS.

"A still wave maketh a wise Revolution," but the Reds can no more keep their wireless still than their tongues. According to the series of intercepted messages which passed between the Bolshevist Foreign Secretary, Chicherin, and the Agent, Litvinoff, it is patent that extremely questionable relations existed between the *Daily Herald* and the people who are straining every effort to create a state of revolution in this country. Mr. George Lansbury, the editor, has published a lengthy denial of anything having transpired beyond pure business, but even so—and despite the uncertain interpretation of "business relations"—British Trade Unionists may well enquire more closely into the policy of the newspaper which pretends to represent their views—and incidentally uses their funds to do so. Whether or no Mr. Lansbury received Chinese bonds from the Russian Government is immaterial, and the editor merely throws dust in the eyes of the workers by enlarging on this detail, and conveniently ignoring the fact—of which they should demand explanation—that he had been in the closest touch—intimate touch—with men who had declared themselves enemies of the British Constitution, which indeed they had avowed their intention of destroying by Red revolution if and when they found it possible to effect their purpose. The question for Trades Unionists and workers generally is: Was Mr. Lansbury's business relationship as Editor of the *Daily Herald*, with England's enemies, calculated to do good or harm to England?

* * *

SOVIET GOVERNMENT.

Those who are still putting their faith in Nationalisation for this country (whether State or Sectional) are either sinning against the light or merely stupid. Three important witnesses have recently been heard—(if three more were wanted)—whose unimpeachable evidence puts the case for Nationalisation out of court.

First we have the mass of evidence published by the International Labour Office of the League of Nations. We cannot spare room for much quotation.*

Under the head "Compulsory Labour" we have this:—

> "Towards the middle of 1919 nationalisation was an accomplished fact. The Government found itself with 3,000 factories which must be made to function. To make them function workers are necessary, but the workers were inclined to avoid work *owing to low wages and the lack of foodstuffs.* It appears that the productivity of the worker had diminished, and in spite of all measures taken the total productivity diminished. The workers preferred to emigrate to the country districts, where they could find more food.

[* The volume is published by Messrs. Harrison & Sons (7s. 6d. net.)]

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In these conditions the principle of supply and demand had to be abandoned for some other force; this force could only be the State. The State, according to the Bolshevik idea, feeds the population by making itself the organiser of a colossal exchange of industrial products against agricultural products. To ensure the success of this exchange the State had to have full and absolute control over all the existing economic forces, including that of labour, and had to combine as it desired all the factors of production by diverting labour from one part of the country to another, according to the necessities of the moment. *The State was then obliged (a) to have recourse to compulsory labour* in order to find the necessary man-power, and *(b) to employ it at a low price.* We see thus that the nationalisation of industry and commerce brings with it in its train compulsory labour.

Under the plan of action elaborated by the Government two systems are contemplated. The first consists in the utilisation of all the man-power of the country; this is divided into two categories, skilled and unskilled. They are utilised through the process of registration, mobilisation, and distribution. This plan extends over all Russia, town and country alike. The second system consists in the transformation of the fighting army into a labour army. In other words, the soldiers are kept with the colours and employed on what they call 'the labour' front at urgent work, such as repairing railway lines."

Tabulation of the results of Nationalisation provide a dreary list of ruined industries, closed factories, and unemployment. The whole are proved facts from Russian sources. There is no question of partisan opinion.

The second witness is the "Weekly Journal of the All-Russian Special Commission" (a Bolshevik organ), which was suspended after the sixth issue because the publicity was considered "inconvenient." No one will quarrel with this judgment upon reading the following extract:—

"The revolution has taught us many a lesson. It has proved to us the futility of adopting half-measures while a civil war is raging against us. We threatened our enemies with terrorism, and after the murder of Uritzki and the attempt on the life of our revered leader, Comrade Lenin, we decided to carry this threat into execution. In many towns hostages were shot wholesale. And a good thing too! Indecision in these matters is the very worst policy. Far from weakening the enemy, it infuriates him. The action taken by the Special Commission in the case of Lockhart [formerly British Consul-General in Moscow] is most flagrantly inconsistent with the whole of our policy.

We want to know why this same Lockhart was not tortured with the most subtle appliances to force him to divulge all those addresses and other useful information of which he must have had such an enormous store? With this knowledge at our disposal we might easily have discovered a whole series of counter-revolutionary organisations. We want to know why, instead of submitting him to tortures the very description of which is enough to freeze the blood of any counter-revolutionary, he was permitted to leave the Special Committee 'covered with confusion?' It was perhaps feared that the British Government would be roused to fury. But such pusillanimity is entirely incompatible with the Marxist theory of relations with foreign Powers.

A truce to such weakness. When once a dangerous scoundrel has been caught, let us get as much information out of him as we can, and then despatch him into the next world."

The third testimony came from the Annual Conference of the National Socialist Party (now the Social Democratic Federation). Our old friend, Mr. Dan Irving, M.P., presided, and his was the first voice raised in protest, thus:—

"The idea of the new Communists was not to erect anything, but to burst up everything. They wanted to set up an industrial revolt in order to force a political situation by a minority of the people opposed to the wish of the majority, the result of which would be to throw things back and have a period of waiting incomparable to that which they would have had in the ordinary way. In Russia there was a vast tyranny such as the world had never seen before, with famine, civil war, and plague, and even now there was very little prospect of any decent way out. He would far sooner bear for a very long time the ills he knew of than face these ills for a somewhat speedier conclusion."

Mr. Tchaikoutsky, a member of the Archangel Provisional Government, added to this "that the peasant masses in Russia were rising against Bolshevism, and the South of Russia was aflame, 50,000,000 being against the Bolsheviks. They said that the Bolsheviks had deceived them in seizing the land, not for the people but for their commissaries, who were forcing the peasants to work for them. Under the banner of a popular revolution in the interests of the masses of the people the peasants were prepared to support General Wrangel, whose attempt they regarded as the most successful yet accomplished. Without the construction of a new religion communism had been found to be an impossibility. In Russia the people would not put down arms until Bolshevism was destroyed."

Later Mr. H. W. Lee, on behalf of the Executive Council, proposed a resolution expressing the conviction "that attempts by a minority to establish a Socialist dictatorship and despotism could only aid reaction, and declaring that full and complete political, social, and industrial democracy was the only safe and permanent foundation for a co-operative commonwealth. The average working man, he said, would be little disposed to social democracy if it meant the 'iron, rigid discipline of the workers by the workers,' which was admittedly favoured by the Soviet Government of Russia."

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Mr. H. M. Hyndman concluded "that if people were liable to be gulled, that made it all the more necessary to be careful not to allow power to fall into the hands of a minority. Short cuts to administrative power otherwise than through the ballot box led inevitably to dictatorship. In the matter of dictatorships England and Russia were not similarly placed. There was very little likelihood, for instance, of a dictatorship in London being recognised in Lancashire or Yorkshire."

Which latter remark is the bare truth. "Whatever," as one writer has said, "may be the merits of Bolshevism as a theoretical form of government, in practice it is, *ipso facto*, condemned by the anarchy, terrorism, and chaos which it has brought in its train."

* * *

THE LEAGUE OF NATIONS.

We are glad to note that an increasing number of public men and writers are applying the brake of cold logic to this subject. In our natural goodness of heart we were all inclined to hail the League as a sort of John the Baptist heralding a Second Coming. It may be, but, as M. Rene Doumic (Editor of the *Revue des Deux Mondes*) says: "One must not forget that the divergence of [national] interests will be a perpetual source of disputes. It will be to the interest of somebody that these disputes should lead to wars, and that the fire should spread all over Europe. . . . The world upon which we are entering will resemble the old in the sense that the plague of war will continue to be a permanent danger, and that the danger will be all the worse for those who believe themselves to be sufficiently protected by the empty protocols and inoperative formulas of the League of Nations. . . . The war has created nothing new. It has only recalled and brought into light again a certain number of truths which belong to all time but had been forgotten. It has reminded the pacifists, those who believed a European war to be impossible, that the history of humanity is a perpetual recommencement, and that war is a part of it and will never be eliminated, just as envy, hatred, and malice will never be rooted out of the heart of man. It has reminded the citizens of one country of the necessity, first and foremost, of uniting against the external enemy, and that one idea—that of the native land—must take precedence of all others. It has reminded individuals that to the law of labour, being of Divine institution, there can be no exception. It has reminded the unbelievers that human considerations do not suffice for satisfying the aspirations of the soul, and that the category of the infinite cannot be eliminated."

Our own attitude, which we have been trying to interpret for the past twelve months, was very well put by the Lord Chancellor recently. "I don't think," he said, "that any man does any great service to the cause of the League of Nations by talking over-confidently about its present or its future. Still less do I think any advocate helps that cause by overlooking or ignoring the stupendous difficulties which lie in its way, but I claim that no nobler, no worthier, and no more necessary duty lies at the door of every honest and patriotic citizen of this country, and of all great civilised countries of the world, than to try with all his power to understand these difficulties, grapple with them, and defeat them."

And we are unfeignedly glad to find Mr. Moreton Frewen writing in the *Daily Telegraph*, in support of the idea we have pressed for long enough, *i.e.*, "co-operation with the United States and with France, the motherland of the great Federal philosophers since the Washington Constitution was written. It would indeed be a formidable League of Federals—Great Britain and her daughter States with the two great Republics."

"This is the great lesson of the war," said Sir Campbell Stuart at Fredericton (New Brunswick) recently, "which found Canada a province and left her a nation, which found the Motherland and her overseas possessions an Empire and left them a league of her own nations. For us of the British Empire this war has most certainly not been fought in vain, and even when that great legacy of the war, the League of Nations, is trying to be seen in the shadow, a new force has come into the world full of virility and animated by the highest ideals, the League of Nations of the British Empire, under which common flag may we all live and die."

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Industry and Finance.—III.

By HARTLEY WITHERS,

Editor "The Economist."

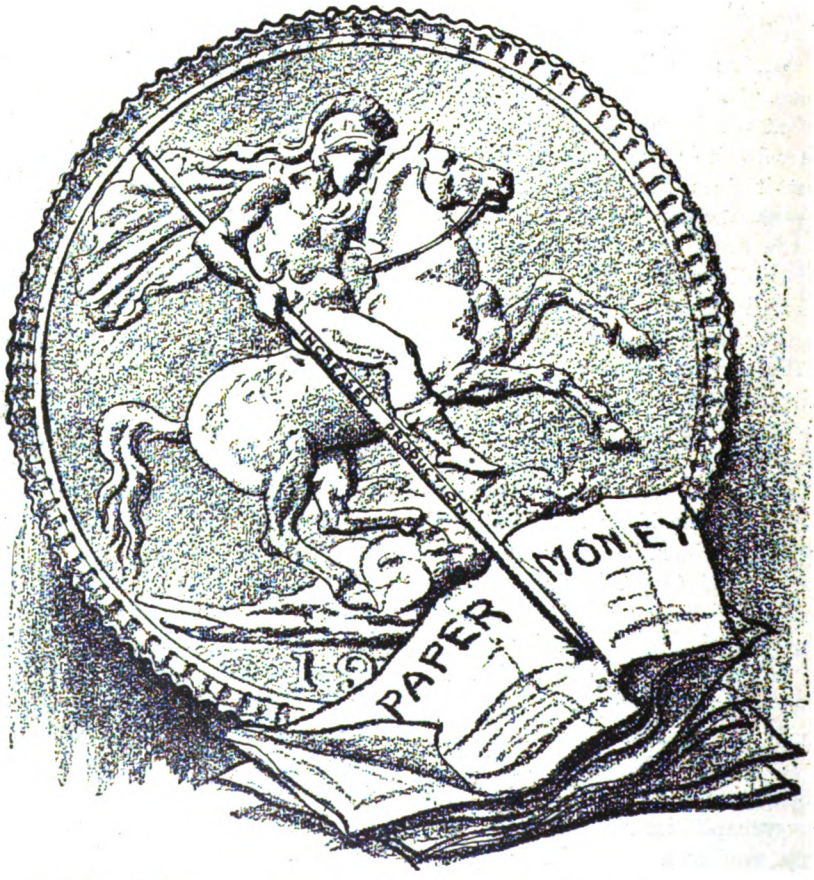
AS long as the private ownership of property endures capital provided by shareholders or creditors will be essential to the conduct of industry. It may be that a system may some day be evolved by which collectively-owned capital will be provided by the State, and an equally or more satisfactory output of goods and services be secured. At present the difficulties in the way of such a system are so great, and the differences of opinion on matters of detail, among those who advocate it, are so extensive that it seems better to try to improve the system that we have got until a really workable scheme is provided for a better one. But it does not follow from this that the present gulf that is said to exist between the capitalist, whether a shareholder or creditor, and the wage-earner, who works with the machinery and equipment that he provides, need be continued. In fact the gap is already, to a certain extent, imaginary. Most capitalists, as it is, are also workers and earners, and a large number of wage-earners are already capitalists. In fact, they practically all must be so if we take the word capitalist in its widest sense as an owner of wealth applied to production. They nearly all own household utensils and furniture, which produce for them domestic comfort and help to cook their food. Beyond that a very large number have money invested in Savings Banks, Friendly Societies, Building Societies, and Co-operative Societies. The ideal by which every capitalist shall be a worker and every worker a capitalist is by no means an impossible or even a far-off dream; it is already to some extent a reality, and we only want to extend that reality in order to narrow the gulf which appears to yawn between the two classes and enable capital and labour to recognise one another as merely the two blades of a pair of scissors, which can do little or nothing when taken apart, but work most effectively when joined together for a common purpose.

It was lately suggested by a prominent mineowner that a good way out of the difficulty concerning the working of our coal mines would be for the wage-earners of the country to subscribe a shilling a week to a common fund in order to buy the coalowners out. Now that the wages in most industries have left the wage-earners a margin, above what is required for the necessaries of life, it is clear that they have it in their power to effect a peaceful, but most effective, revolution in our economic system by amassing a store of capital which they can use for the equipment of industry to be owned, worked, and managed by themselves for the production of goods that they require under conditions which they approve. In this way they would evidently turn the flank of the idle capitalist and defeat the tyranny which he is alleged to exercise over the lives and fortunes of those who work for him, and over the direction of industry which is said to be worked according to his whims, though, in fact, he has always to consider the desires of the consumer if he wants to earn a profit. An argument that is sometimes urged in favour of the accumulation of masses of wealth in few hands consists of the contention that the equal distribution of wealth reduces the supply of capital, because it is only the owners of great wealth who produce capital by saving.

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This argument is certainly to some extent untrue, because, as has already been shown, saving among the wage-earners already exists on a considerable scale in the aggregate. At the same time it cannot be denied that the practice of saving might be much more popular than it is among those whose personal capital is individually small, though the aggregate of their accumulations is already vast, as is shown by the figures of the Co-operative Societies. The inducement to save small amounts is necessarily weak when the matter is looked at from the point of view of each individual, but if the wage-earners would recognise that owing to their great numbers and the weighty influence that they already exercise on industry, they could, by massing their savings for industrial development, revolutionise not only the economic basis of industry but also the foundation of the social fabric. It seems to be an ambition well worth working for, especially at a time when the need for fresh capital and for fresh ideas in industry is one which has to be met if civilisation is to resume its progress. All that is wanted is an extension on a great scale, in the light of modern ideas, of the movement already started by the pioneers of the co-operative movement. Progress along this path seems to hold out much fairer prospects than any scheme of nationalisation, and might be fitted in with the more practical side of the Guild movement, stripped of the predatory suggestions of confiscation which so often blot its exposition by its advocates.



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Commerce and Labour.

THE BEDROCK OF FUTURE SUCCESS.

By P. O. WITTEY, A.M.I.E.E.

THE lines of Coleridge, " Work without hope draws nectar in a sieve, and hope without an object cannot live," are as true as ever. So much has been written on the psychological aspects of business generally that it is not without some diffidence that the following thoughts are submitted for the interest of those engaging in the activities of the average business organisation.

The Need of Living Force.

Human dynamic force is that which energises and puts into action the tremendous mechanism of Commerce and Labour. In much the same way as a machine will not produce till its motive power is set to service, so an established business may remain inert unless its ability of movement and development are satisfactorily cultivated. It is the power of movement that stands for the strength of any commercial project, and the enterprise of active and scientific management that makes for successful progress.

The able strength of this living force, this ability to do things and to get things done pleasantly and quickly—to start moving the as yet unresponsive and concealed origins of action, and to animate the smouldering ashes of possibilities—it is this power that pays high wages, bonuses and good dividends.

To-Day versus Yesterday.

To-day is not as yesterday. It is not difficult to appreciate, when one ponders the tremendous and speedy development of the progressive spirit, that not so long ago business ideas, which to-day would be ridiculed, then formed the very life-blood of enterprise and commercial genius. We, perhaps, can in some measure appreciate the inconvenience, although not the wisdom, of many men in business to-day who find the utmost difficulty in abandoning their long cherished notions of commercial management, when we realise that probably ten to fifteen years hence we, too, may be called upon to give up the old-fashioned antiquated methods which to-day we are striving so hard to adopt and get thoroughly working into our various business organisations.

It is, of course, only the essence of progress and movement ; and just as we try to out-distance our competitors, and so earn reasonable means of livelihood at a quicker rate, so long will this mighty combination of dynamic force and mental enterprise continue.

In short, it is simply that splendid irresistible power of movement which influences the mental attitude of the hard man of business in the same manner as the spoken words of the great political leaders sway the minds of their audiences. This movement, which is responsible for so much in our business life to-day, is no trivial or transitory thing which speeds on awhile and then stays to rest to enable the sluggards to catch up, but rather does it move on and on, ever all the time adding and multiplying its accumulated wealth of experience to those who keep pace with it, never letting them rest, but maintaining the race for supremacy and meeting each new aspect of competition as some wild beast to be overwhelmed, and some new triumph to be gained. The importance and need of every organiser and worker pursuing the path of this dynamic force is apparent. The present conditions of Commerce and Labour permit of no resting on our oars, the competitive influences around us leave no chance for idleness—but only for success which can come from individual persistent effort and profitable hard work.

This is the only currency in which the price of commercial progress can be paid, and usually only the comparatively few enterprising, up-to-date and alert men,

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who can wisely judge what the community needs and how those needs can best be supplied, find the opportunities to engage in the transaction. But all the wealth and strength in the world will be as nothing until, by educative means, this human co-operative spirit—cultured mentality—this power of mutual interest, is instilled into the hearts and minds of the workers—that they may see wherein their present and ultimate interests, and those of their fellow kind, really lie.

The productiveness of our workers is governed by their personal qualities and by the organisation of their labour. Whether the workers will work for money is a question to which at first sight most people would answer that they not only will—but do. Yet, more deeply considered, it will be agreed that most of the world's workers do, of course—with necessity always scraping their shins—put forward the necessary amount of effort to obtain a living, and perhaps a few common luxuries. It is, however, difficult to believe that beyond this they will struggle to accumulate money under the conditions of the present wage system.

The Cost of Success.

Most of our fortune makers have been, and are, individuals of more than ordinary industry. They think everything of earnings, and little or nothing of hours. They pay the price in long hours of work and study, in responsibility, discouragement, economy, monotony and energy. The average worker seldom appears to consider how he can sell all his time, and all his energy and skill, but is satisfied to dispose of only part of his stock-in-trade in return for cash, and to give the other away for amusement.

It can, I think, be taken as agreed that all the world over people who are paid for their work do not make haste to get tired. It is safe to assume, speaking broadly, that the world's industrial workers, if they chose and were allowed by their trade organisations, could without violating the old maxim of " all work and no play," probably do twice as much work during their lives, and still have more than enough strength left to enable them to enjoy their leisure hours in a rational way. It would seem that their instinct tells them that however much they do under existing conditions they will not in the mass get more than a decent living. Right or wrong, that is their theory, both individually and collectively, as expressed in the policy of the trade unions. So far as any one individual can possibly judge, it would seem that since the return of the warriors to industrialism, mankind generally is seeking a " soft job," and one could be pardoned for suggesting that vast numbers of the employee class appear to have as their sole motive in working at all the dread of losing their present source of income. There appears to be a resolute disinclination to appreciate that workers' wages have to be paid, not out of capital, but out of the produce of their own labour.

The Value of Productiveness.

To discuss how improvement in the industrial value of the workers may be developed would require a tremendous treatise, which would include the vast subject of education—physical, intellectual, and moral. Modern industrialism has, however, done much by means of the Welfare Movement in our larger undertakings. There are, perhaps, as many industrial lives in the smaller factories, as a whole, as are engaged in the vast producing organisations. It is the former that present the most difficulty in the study of the true value of their productiveness. It should at once be stated that all good workers should have all they earn—they are worth it. The laggards also should have all they earn, but no more. It is perhaps worth remembering too in this connection that the most efficient and conscientious labour, badly managed, will often be less productive than inferior labour wisely organised and directed into the most profitable channels.

Although the keynote of modern successful industrial organisation is system, the method of generating the necessary enthusiasm to bring into operation the required dynamic force in the form of mutual co-operation between the producing workers and the directing workers is not that which merely aims at setting a number of standard men at standard benches for standard hours. Rather is it the method which will at once

(Concluded on page 129. *)*

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Problems of Reconstruction.

By PERCY G. KENYON.

THE Great War is finished—that is, an Armistice stopped the fighting in France and, with the Peace Treaty, our armies have been disbanded. We did our full share in taking the fight out of the Germans, but we have left the rest of the world in a fighting mood; we rose united against a foreign enemy and destroyed his power to sink our ships and dictate our destiny, but we have raised in his place a brood of ugly spectres at home. We have ended fear from the German source only to be beset by an increasing sense of danger to our daily life and national prosperity.

The causes are not clearly understood; they threaten us to an extent we do not realise, and call for action in which we are not united. It did not need the miners' strike to indicate that England was smouldering with unrest—possibly a thousand other strikes have been reported during the past year—whilst the miners' fight for nationalisation has effectively fanned the discontent. We put to ourselves Thackeray's bitter query: "Who in this world is happy? Which of us has his desire or, having it, is satisfied?"

It takes many aspects of a problem to fill in the outlines of a great issue and many evidences of conflicting interests to bring out the main line of cleavage. It has taken a full four years of conflict to prove to Germany that might is not right. Is it going to take England a generation to realise that the Labour question has become a great moral issue, and that only as her people exercise a spirit of wisdom and patience and resolve both to render and receive justice shall they set the country on the way to a happy future or, alternatively, towards the wreck of her industrial strength, which is the essence of our national life?

Our present unrest is only a new and perhaps more aggravated form of a perpetual condition. We shall weather this storm as we have weathered others, when we Englishmen prove by our acts that honour and justice are the indispensable foundation for a lasting prosperity. Employers known to be fair and just are more esteemed by employees than those who coddle labour by thinly disguised schemes of charity; hypocrisy is soon detected and resented.

Let us think for a moment about to-day's high prices. They worry us all, not quite so much as to whether they will keep up as to how to pay them. People talk wildly about profiteers, and cartoonists depict human monsters purporting to represent the Capitalists who are grabbing all the profits at the expense of the workers. It is not my belief that individual scheming is responsible for our high prices; they are really the aftermath of the war, which has created the greatest demand ever known and consumed our surplus supplies.

Profiteering can only be practised when the relation of demand to supply provides the opportunity; it will disappear automatically once the supply can equal the demand. This does not excuse everybody; some mean advantages have been taken. In many instances a wage increase in the mills has been followed by higher prices at the stores; some retailers have been prosecuted for gaining unjust profits, but these were small fry for the profiteer hunter. Huge profits have been made by speculation in wholesale stocks and in mills. It is the big abuses of opportunity which discredit the whole capitalistic system and exposes us to the danger of the "red flag"—nationalisation.

A necessary part of our reconstruction is the protection of the community against grossly excessive profits. It is just as dishonourable when capital goes in partnership with labour to raise prices and divide the spoils as when capitalists or labour leaders play the part of highwaymen separately.

At the present time we appear to be making no progress in building up

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reserve stocks of goods or raw material. Agricultural costs are likely to increase; the world needs more cotton than is being grown and more wool than is being clipped. We must expect prices to hold up unless they are lowered by increased production. These remarks apply equally to all branches of industry, therefore the efforts of both employer and employed should be directed towards the realisation of this essential primary.

It is far from my wish to have my views interpreted as Socialistic. On the contrary, it is my conviction that the capitalistic basis of society is the only system that can produce enough to keep to-day's population alive; that the chance of personal gain is the only incentive to make men work enough; that life is safest where personal property is best protected, and that State Socialism is a bankrupt theory.

A few of the inequalities which have always existed, and which will continue to exist, may now be pointed out, as a real effort at reconstruction will tend to alleviate them. The greatest injustice in life is that one man is born with ability and another without it; no form of government can make them equal, nor can it prevent one man failing while another succeeds.

In labour reconstruction we are dependent upon the honest co-operation of all concerned. The principle of collective bargaining is advancing in favour, and would escape much of its opposition if the unions were incorporated and their officers held to an equitable dealing with the public and with employers. Without honest intention on both sides to act fairly and honourably; to show a decent regard for each other's rights; to feel the obligation of duty on both sides and to be governed by the dictates of common sense, all efforts to secure an industrial peace will be futile. It would, therefore, be wise to pause and consider two definite statements that have been made by the workers' representatives from time to time:—

1. That they (the workers) are not prepared to be content with the pre-war standard of living, because it allows them (to use their own term) " a mere fodder basis."

2. That definite steps must be taken to reduce the cost of living.

These two statements are of vast importance and worthy of the most serious investigation if we are to find a solution to this problem, the gravity of which grows continually. The solution should have such a basis that it can be applied nationally and affect equally the whole industrial community.

In the first instance it will be universally agreed that even the worker who, having nothing more than his physical exertions to hire, is entitled, at the termination of a week's existence to have a balance in hand. By the above statement it is not intended to convey that a worker has the right to confiscate his employer's profit, but that he himself shall have a profit commensurate with his skill and the conditions attending the job he may be engaged upon.

It is the foregoing reasoning that is the foundation of the scheme upon which the wages of all asbestos workers in the employ of Messrs. Turner Brothers Asbestos Co. Ltd. are based in accordance with the decision of the Joint Industrial Council. This Council governs the wages of the entire asbestos industry.

It was agreed, in order to formulate a working basis, that the following be taken as the pre-war minimum rate for males and females respectively:—

Males over 21 years of age 6d. per hour
Females ,, 18 ,, ,, 4d. ,,

This pre-war rate to be plus 25% to give an improved status, thus giving a new basic rate as follows:—

Males over 21 years of age 7½d. per hour
Females ,, 18 ,, ,, 5d. ,,

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From this point all adjustments to be regulated *pro rata* to the cost of living over an average of three months on the figures issued by the Board of Trade official organ, *The Labour Gazette*.

It is further agreed that no change shall operate where the average figure does not vary 5% up or down.

Should the average figure exceed 5% up or down, then a change shall operate strictly in proportion on the new basic rate.

In the case of the piece worker, all sectional lists have been dealt with in the same way, so that the present wage is from the basic list plus 130%, which is the figure in vogue until the quarterly adjustment in September.

In other words, present wages list equals 230/100 of basic list, so that, assuming the next quarterly figure to be 150% then the increase will be represented by 20 on the 230, or a true percentage on current earnings of 8.7%.

As an example, a piece worker at present earning 60/- per week at the 130% for cost of living and still assuming the next assessment to be 150%, the amended earnings would be :—

$$60 \times 250/230 = 65\text{s. } 2\tfrac{1}{2}\text{d.}$$

or, expressed as a true percentage on previous earnings,

$$60/- + 8.7\% = 65\text{s. } 2\tfrac{1}{2}\text{d.}$$

This procedure guarantees that, at any period, no matter to what height the cost of living may attain, a *pro rata* advantage is gained over and above the pre-war status. This principle would, to some degree, satisfy the advocates of nationalisation in the sense that the Government is the controlling factor of wage adjustment. At the same time there is a guarantee of non-interference with the progressive management of private enterprise.

If adopted nationally, the foregoing scheme would combat the depreciating values of workers' earnings in so far that it would act as a deterring influence to the would-be profiteer, since all employers would have to shoulder their fair share of responsibility for any inflated costs of living following any sectional profiteering. In this way the cause of cheaper living would become a universal question for employer and employed alike.

It may be of interest for readers to learn that our mechanical section has accepted the scheme with the full approval of their trade's organisation, and we commend its application to other industries desirous of giving a fair proposition to its workers.

It should be clearly understood, however, that without affecting the principle, there may be certain anomalies present which were in evidence before the war. It is the work of each industry to rectify its own inequalities if harmony in each trade is to be maintained.

COMMERCE AND LABOUR *(concluded)*.

infuse a cheerful and spirited attack on all work that presents itself.

THE HOPE OF INCREASED EFFICIENCY.

The organisation of any human effort should be directed to making each worker's duties interesting, responsible, and promising, and the routine work can only be so touched by a telepathic connection with the general fortunes of the business from day to day. No method of attaining clockwork precision, no newfangled apparatus, no Yankee texts on the walls, can of themselves stir the dry bones of drudgery to animated efficiency, whether in the office or factory.

Industrial organisation must be slightly intoxicating if it is to stimulate at all, and, in this connection, nothing compares with a set of arrangements by which each and every employee is able to feel that he or she has some financial stake in the business, which makes every ounce of effort worth while, prompts the doing of duty, small or great, with the same degree of fidelity, earnestness and enthusiasm as though it were the worker's own individual business.

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Commerce, Industry and the Nobler Pursuits.—II.

COMMERCE and the nobler pursuits have ever gone together. Through international contact, through international commerce, the nations have received a tremendous impetus in science and art. The great English artists of the Eighteenth Century owed their rise to the influence of Italians, Dutchmen, Frenchmen, Germans, with whom they had come into contact through trade and commerce. But for international trade and commerce the English might be still savages dressed in skins, who painted their bodies with woad as in the time of Julius Cæsar. The great English painters would probably not have come to light but for the influence exercised by foreigners attracted by England's wealth. Men such as Holbein, Van Dyck, Lely, are the fathers of English painting. English music owes much to Händel, and English industry and trade much to the example set by Flemings and Dutchmen in the industries, especially the textile industries, paper making, canal and road construction, agriculture (Holland in Lincolnshire). Italians and French have introduced into England the making of silk, glass and china; Italians have caused the rise of Elizabethan science and poetry. English international trade was introduced by the Hanseatic merchants, the Easterlings (Pound sterling), etc.

International intercourse is now greatest in the United States, which have become a microcosm. New York is the modern Babylon, with its skyscrapers and confusion of tongues. It is therefore only natural that the United States are foremost in many of the nobler pursuits, in scientific agriculture, in all the mechanical sciences, in architecture, etc.

Wealth, commerce, and industry have ever favoured science and art. The wealthy business men, business corporations and business nations of antiquity built the glorious temples, theatres, and monuments of Greece. The business men of the Middle Ages adorned Venice, Florence, Bruges, Antwerp, Ypres, Ghent, Nuremberg, Augsburg. The business men of modern times founded innumerable schools, universities, pious and benevolent institutions, scientific institutions, etc. Most libraries and museums owe their rise to wealthy business men.

Commerce and culture have always gone hand in hand. Practically all the great centres of culture were also centres of trade. They were predestined to become great commercial centres by their situation either on a commanding site on the sea or on an important navigable river. These great towns were at first commercial centres, and then became political and administrative centres as well. That has been the story of Sidon, Tyre, Alexandria, Cairo, Heliopolis, Thebes, Athens, Corinth, Babylon, Bagdad, Constantinople, Paris, London, Venice, Florence, Lisbon, Antwerp, Amsterdam, Hamburg, New York, Chicago, Rio de Janeiro, Buenos Ayres, etc. Science and art were most highly developed in Phoenicia, Athens, Corinth, Amalfi, Pisa, Venice, Florence, Amsterdam, at the time when these were most prosperous, when they dominated the commerce of the world. Their scientific and artistic eminence increased with their trade and their wealth, and declined when their business declined.

England had three great spurts in science and art: in the Elizabethan era when the first great commercial expansion took place, in the Eighteenth Century when England became foremost in manufacturing, and in the first part of the Nineteenth Century when England led the world not only in practical inventiveness but also in science.

The fact that practically all progress is due to the combined effect of wealth and of foreign intercourse can be proved by numerous further examples. When the

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great trade of the world was between the East and the West by way of the Mediterranean, Venice fetched the wares of the East and sent them northward across the Alps into Europe. Florence participated in the great trade, and the Florentines were not only great traders and bankers (Lombards), but were foremost as manufacturers as well. It is highly significant that the two greatest centres of Italian art were Venice and Florence, the two greatest business towns, while Rome, notwithstanding its vast importance as the seat of the Papacy and as a great centre of population, was very poor both in art and in science, as was Naples. The artists who embellished Rome came mostly from Florence and Venice. To the Florentine school belong Cimabue, Giotto, Leonardo da Vinci, Fra Bartolommeo, Michel Angelo, Andrea del Sarto. To the Venetian school belong Bellini, Mantegna, del Piombo, Lotto, Palma Vecchio, Paris Bordone, Titian, Veronese. The great trading centres of Italy were at the same time the great centres of intellect and of taste. Both business and intelligence are to be found combined in the south of China, not in the north. In the Northern States of the American Union, where wealth is great, business progressive, and all nations commingle, are to be found the great centres of American intelligence, taste and progress. In the comparatively poor South, which as far as the white population is concerned is inhabited principally by the old English stock and its descendants, the people are backward economically and intellectually.

The civilisation of nations advances with progress in industry, commerce and wealth, and declines when wealth, industry and commerce begin to stagnate and to decline. That is the lesson of all history. The history of modern trading nations contains some important dates which have had a most powerful influence upon their fate. Among these dates two should be particularly interesting : the discovery of the sea route to India by Vasco da Gama, the Portuguese, in 1498, and Cromwell's attack upon Holland in 1650.

Owing to the discovery of the sea route to India Venice lost her monopoly of the trade between the East and the West. Portugal and Spain took the place of Venice. Venice began to decline, and with it all Italy. That decline of the Italian Republics was accentuated by wars between them, and by invasions on the part of Spain, France, and Germany. Before 1500 Italy was the foremost nation in Europe in commerce and in wealth, in science and in art. At the Cinquecento, Italian wealth, science, and art had simultaneously arrived at their highest development. Italy became intellectually and artistically greatest when her commerce and industry were most flourishing. That may be seen from her explorers: Columbus, Toscanelli, the Cabots, Amerigo Vespucci, Marco Polo, Carpini, Niccolo de Canti, Cada Mosto; from her scientists: Thomas of Aquino, Giordano Bruno, Leonardo da Vinci, Politian, Pico della Mirandola, Lorenzo Valla ; from her reformers: Arnaudo da Brescia, Marsiglio of Padua, Cola di Rienzi, Savonarola ; from her poets: Dante, Petrarca, Boccaccio, Ariosto, Tasso; and from her great painters and sculptors. All these lived before 1600, and most before 1550. During the sixteenth and the seventeenth centuries Italy declined economically, artistically, and scientifically. Her place was taken to a great extent by Spain and Portugal, who were foremost in international commerce, in wealth, and in art from 1500 to 1600. Before 1500 the Italians were the greatest explorers, between 1600 and 1700 the Portuguese, the Spanish, the Dutch, and the English. During the period 1500 to 1600 flourished Camoens, Cervantes, Lope de Vega, Velasquez, Herrera, and Zurbaran. The Golden Age of Italy was followed by the Golden Age of Spain and Portugal.

The wealth of Spain and of Portugal was destroyed in Spain's eighty years' war with Holland (1568-1648), and Holland became the greatest commercial, colonising, maritime, and industrial nation in the world. Holland's prosperity was brought to the highest point of development during the war with Spain, and Holland's decline began when Cromwell attacked Holland in 1650 with the navy and with his navigation laws. During the second half of the seventeenth century Holland lost her great economic

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position, and it is noteworthy that most of the Dutch artists and scientists flourished between 1600 and 1650, when Holland was at her zenith in industry, commerce, and wealth. During that short period flourished Rembrandt, Albert Cuyp, Paul Potter, Berchem, Mierevelt, Frans Hals, the two Teniers, Ostade, Adrian Brouwer, Wouvermans, Gerard Dow, Terborch, Metsu, van der Meer, Koninck, Weenix, Van Goyen, Wynants, Ruysdael, and many others. At the same time the Dutch universities were the foremost in the world. Holland was foremost in all the sciences. Among the giants of Dutch science should be mentioned Erasmus, Grotius, Spinoza, Mercator, Lipsius, Scaliger.

The trade between the East and the West went from Venice and Florence across the Alps and along the Rhine toward Holland, England, and the northern countries, and the German towns on the world's principal trade route prospered greatly. Nuremberg and Augsburg became great centres of trade and industry, and shrines of art. In Germany, as in Italy, Spain, and Holland, economic progress was accompanied by intellectual and artistic progress. The Thirty Years' War (1618-1648) destroyed Germany's commerce and industry. It destroyed half the population of the country. Economically, intellectually, and artistically Germany sank suddenly into barbarism.

In England, and in the United States also, business development has been accompanied by intellectual and artistic development, economic stagnation by intellectual and artistic stagnation. When England was economically foremost she led the world intellectually, and to some extent artistically as well. When economic stagnation supervened, progress in science and in art, which had been greatest in England, passed to Germany and the United States. During the last few decades Germany and the United States have advanced faster than England in commerce and industry, in science and in art. Art has received an enormous stimulus in Germany and in the United States through the vast increase in prosperity. That may be seen from the rapid growth of the German and American museums, which was effected largely at England's cost.

Now, as the result of the Great War, Germany has again dropped far behind both England and the United States, and while England has sprung forward with huge strides, the United States must be acknowledged leader. What the future holds no man can tell. Labour can make or mar England's position in Commerce and Industry, as, of course, it can that of the United States. We can only trust that enough reason and goodwill remains to act as the germination ground for the seed of knowledge upon which alone our hope for the future depends.

WHEN THINGS GO WRONG.

By H. POTTER,
National Union of General Workers, Rochdale.

It is easy to *do* well when things *go* well—nothing succeeds like success.

But things do not always go well for anyone alive.

There must be reverses—checks, disappointments, failures, ill-health, etc.

Days must come when you seem an Ishmael, when all the world seems to have a grudge against you.

That is the testing time for character. Give way to despair—allow yourself to believe that you are unfortunate, misunderstood, disliked and betrayed, and you are on a slippery slope leading to lost chances, bad work, and ultimate ruin. On such a day pull yourself together; seek the cause of the temporary set-back in your own actions, not in the vile plots of others. Bite hard the lump of mischance and stick to it.

You will find that even set-backs and misfortunes have their value, and that the sun shines after the dullest day.

Have confidence in yourself, but do not let it grow to a swollen tumor of self-excusings.

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The Asbestos Industry of the Province of Quebec, Canada—III.

By THÉO. C. DENIS,

Superintendent of Mines of the Province of Quebec, Canada.

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CLASSIFICATION OF GRADES OF ASBESTOS.

THE classification of grades of asbestos has never been standardized, and this is a source of great inconvenience to the buyers, as the purchases have to be made on samples submitted. Each producer has his own method of grading, and his own special mark or designation for each grade. There is, however, a uniform method of testing the length of fibre of the Mill Stock qualities, and some of the large users of asbestos have their own representatives at the mines to examine and test each shipment as it is made.

This state of affairs dates from the beginning of the industry, for as far back as 1891, when the grading of asbestos was practically confined to hand-cobbed qualities, Nos. 1, 2, and 3, Mr. L. A. Klein, in a paper on "The Asbestos Industry," read in 1891 before the General Mining Association, stated:—

"The stuff, after being graded, which is, however, in the entire discretion of every particular mine (prices of some number 2 and number 3 last year differed about 400 per cent), is put in bags of 100 lbs. each."

Of course, the standardization of the classification of asbestos is a rather difficult problem to solve. The grading is based on (1) the "life" of the fibre, which depends on the strength and resiliency of the threads; (2) the length of fibre; and (3) on the colour of the fiberized material.

For the purpose of statistics, the Quebec Bureau of Mines has adopted a classification based on the selling price of asbestos, which divides it into two grades of "Crude" or hand-cobbed material, and three grades of "Mill Stock" or fibre recovered by mechanical means after crushing and pulverizing the rock. The following table is a compilation of the figures of production for the last ten years:—

TABLE OF PRODUCTION OF ASBESTOS IN THE PROVINCE OF QUEBEC FOR THE TEN YEARS 1909–1918.

Year.	Crude No. 1. Tons.	Crude No. 2. Tons.	Mill Stock No. 1. Tons.	Mill Stock, No. 2. Tons.	Mill Stock No. 3. Tons.	Total production of fibre. Tons.	Total Value. $	Average Value per Ton. $	Total Rock milled. Tons.*	Rock mined and hoisted. Tons.	Per cent. fibre per ton rock milled.
1909	1,087	1,471	5,757	19,029	36,620	63,965	2,296,584	35.90	977,452	1,163,634	6.54
1910	1,817	1,612	10,313	44,793	22,071	80,605	2,667,829	33.10	1,709,992	2,035,705	5.03
1911	1,400	3,382	6,340	35,991	55,111	102,224	3,026,306	29.60	1,477,013	1,759,064	6.91
1912	1,941	3,766	3,682	32,689	69,097	111,175	3,059,084	27.52	1,571,310	1,870,608	7.08
1913	2,140	2,870	14,056	29,525	88,018	136,609	3,830,504	28.04	2,123,024	2,527,410	6.43
1914	1,336	2,812	10,485	32,847	59,921	107,401	2,895,935	26.96	1,808,285	2,127,395	5.94
1915	2,734	2,631	12,502	36,945	58,303	113,115	3,544,302	31.33	1,813,961	2,134,073	6.23
1916	3,073	2,885	11,768	43,870	71,743	133,339	5,182,905	38.87	1,947,424	2,291,087	6.84
1917	1,761	3,603	13,197	54,072	64,609	137,242	7,198,558	52.45	2,239,249	2,634,410	6.12
1918	1,808	1,896	13,559	32,412	92,700	142,375	9,019,899	63,35	2,078,883	2,445,745	6.85

* Calculated at the rate of 85 per cent. of rock mined.

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The following detailed tables give the yearly figures of production for the last four years :—

PRODUCTION OF ASBESTOS IN THE PROVINCE OF QUEBEC IN 1918.

Designation of Grade.	Shipments and Sales.		Average Value per Ton.	Stock on hand Dec. 31st, 1918.	
	Tons.	Value.		Tons.	Value.
Crude No. 1	1,808	$1,695,671	$937.92	1,104	$985,449
Crude No. 2	1,896	805,331	424.74	582	122,399
Mill Stock No. 1	13,559	2,221,954	163.87	2,993	586,850
Mill Stock No. 2	32,412	1,852,992	57.17	2,522	154,934
Mill Stock No. 3	92,700	2,443,861	26.36	7,033	234,890
	142,375	$9,019,899	63.35	14,234	2,084,522
Asbestic	16,850	34,046	2.02	375	873
Totals	159,225	$9,053,945		14,609	$2,085,395

Quantity of rock mined during the year 1918, 2,445,745 tons.

PRODUCTION OF ASBESTOS IN THE PROVINCE OF QUEBEC FOR 1917.

Designation of Grade.	Shipments and Sales.		Average Value per Ton.	Stock on hand Dec. 31st, 1917.	
	Tons.	Value.		Tons.	Value.
Crude No. 1	1,761	$1,370,740	$778.38	580	$470,923
Crude No. 2	3,603	1,374,387	381.46	746	269,766
Mill Stock No. 1	13,197	1,318,387	99.90	1,089	206,124
Mill Stock No. 2	54,072	1,988,197	36.77	3,346	141,344
Mill Stock No. 3	64,609	1,146,847	17.75	7,447	124,735
Total	137,242	$7,198,558	52.45	13,208	1,212,892
Asbestic	17,210	42,139	2.45	263	805
Total	154,452	$7,240,697		13,471	$1,213,697

Quantity of rock mined during the year 1917, 2,634,410 tons.

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PRODUCTION OF ASBESTOS IN THE PROVINCE OF QUEBEC FOR 1916.

Designation of Grade.	Shipments and Sales.		Average Value per Ton.	Stock on hand Dec. 31st, 1916.	
	Tons.	Value.		Tons.	Value.
Crude No. 1	3,073	$1,299,138	$422.76	255	$100,931
Crude No. 2	2,885	634,041	219.77	201	28,596
Mill Stock No. 1	11,768	936,373	77.57	847	86,728
Mill Stock No. 2	43,870	1,248,740	28.46	1,500	55,971
Mill Stock No. 3	71,743	1,064,613	14.84	3,473	61,425
Total	133,339	5,182,905	38.87	6,276	333,651
Asbestic	20,710	28,252	1.36	228	334
Total	154,049	5,211,157		6,504	333,985

Quantity of rock mined 2,291,087 tons.

PRODUCTION OF ASBESTOS IN THE PROVINCE OF QUEBEC FOR 1915.

Designation of Grade.	Shipments and Sales.		Average Value per Ton.	Stock on hand.	
	Tons.	Value.		Tons.	Value.
Long Fibre, Crude No. 1.	2,734	$750,112	$274.36	590	$176,523
Long Fibre, Crude No. 2.	2,631	322,048	122.44	300	41,582
Mill Stock No. 1	12,502	804,193	64.32	290	50,294
Mill Stock No. 2	36,945	981,890	26.84	5,525	157,012
Mill Stock No. 3	58,303	686,119	12.57	15,333	240,800
	113,115	3,544,362	31.33	22,038	666,211
Asbestic	25,000	21,819			
Totals	138,115	3,566,181			

Quantity of rock mined during the year 1915, 2,134,073 tons.

MINING AND MILLING METHODS.

Until recently all the asbestos deposits were worked by quarrying methods in open pits. A few years ago a progressive policy of tunnelling was initiated, with a view of exploring and prospecting the property, and blocking out reserves of milling rock, but most of the actual mining is still done by quarrying. In 1918, however, some of the mines took steps to entirely change their methods, and to abandon quarrying and hoisting the rock by cable derricks in favour of the "milling" or "Glory Hole" system, and hoisting by shaft.

As stated previously, mining for asbestos began in Thetford in 1878, and for several years the operations were on

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a limited scale. The work was all open-cast, and the equipment of the mines, or rather of the quarries, at first did not differ from that of the ordinary building-stone quarries, that is, hand-drilling, boom, derricks, worked by horses, then followed by steam derricks. Eventually, with the development of the operations, hand-drilling was replaced by steam drills and compressed air drills, and the boom derricks by cable derricks, which are described further.

removal of the refuse rock to the dumps, the good material being separated from the barren rock, the first being transported to the dressing sheds, placed on the edge of the pits, whereas the rock was sent to the dumps. As only the vein material was saved, a ton of asbestos represented the breaking up of 50 to 150 tons of rock, according to its richness.

The dressing, or cobbing, consisted in freeing the asbestos veins from the



FIG. 9.—AN ASBESTOS QUARRY IN THE EARLY DAYS.

During the first ten or twelve years of the industry only the long fibred vein asbestos was recovered, and the operations were simple. Blasting holes of four or five feet deep were drilled, either by double hand drilling, usually with two strikers, or by machine drills; the serpentine was blasted down in large blocks to the floor of the quarry. The large blocks were then broken up into smaller pieces by " block-holes," drilled single-hand and loaded with small charges of explosives, to free the asbestos veins as much as possible. This was supplemented by the free use of sledge hammers. Then the picking of the more or less freed asbestos was conducted hand in hand with the adhering rock and separating the material into three grades, according to the length of the fibre. This operation was done by hand by boys, with hammers of various weights, the final cobbing being done with hammers of 24 to 28 ounces.

As the mining operations developed and the open pits became deeper, the methods of working the quarries improved, more especially when mechanical treatment of the rock was introduced, for the extraction of the short fibre, in veins too small to be sorted by cobbing, and which constituted the " Mill Stock " material, thereby supplementing the previous low recovery of the vein asbestos alone.

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The boom derricks for handling the rock gave place altogether to cable derricks. After the block-holing and the picking of the larger veins for the "Crude fibre," the greater part of the rock was hoisted in boxes by the cable derricks and sent to the separating mills, only the part of the rock considered too poor for the mill was sent direct to the refuse dump. As the operations took on great extension, the disposal of the refuse from this excavation contains several million cubic yards of material.

The mining operations in the various asbestos fields are now carried on on very large scales. This can be realized from the fact that the rock mined and hoisted in the twenty mines in operation amounts to $2\frac{3}{4}$ million tons a year.

Three basic methods of mining are now in use in the exploitation of the asbestos deposits: (1) open-cast quarrying and

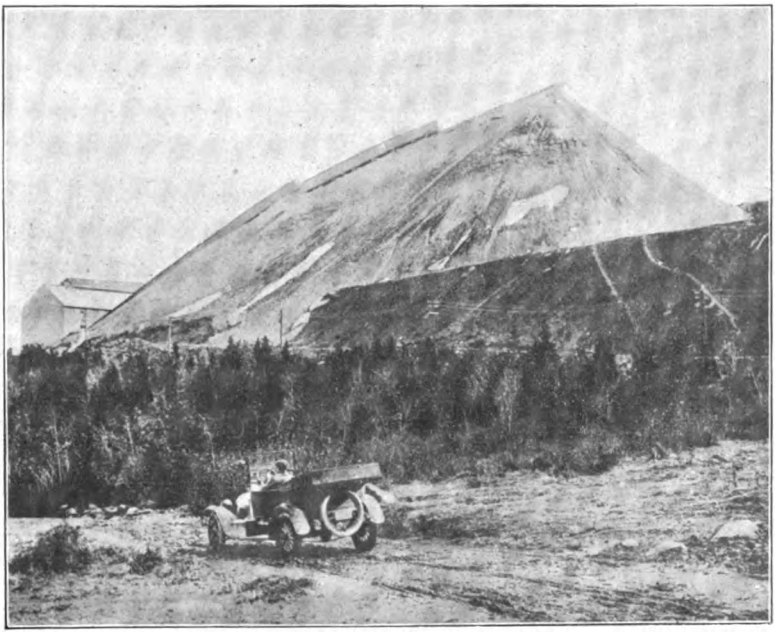


FIG. 10.—DUMP OF SERPENTINE SAND, OR HEAP OF TAILING, OF A MODERN ASBESTOS MILL. SOME OF THESE DUMPS CONTAIN SEVERAL MILLION CUBIC YARDS OF WASTE MATERIAL.

from the mills became quite a problem. It was no longer a question of piling it up in dumps near the edge of the pit, as at first, owing to the quantities involved, and most of the companies had to purchase ground for the sole purpose of receiving the refuse or powdered rock from the mills. Systems of trestles and trains of dumping cars were established, or of long distributing conveyors, and they are now in use. Some of these piles attain enormous sizes: one of the quarries has at present the following dimensions, length 900 feet, width 500 feet, depth 270 feet, and the dump of waste resulting

hoisting the rock by cable derricks; (2) open-cast quarrying, loading trains of dumping cars with steam shovels and hauling them up to the surface by an inclined tunnel; (3) "Glory Hole" method and hoisting the rock by shaft. This last is a combination of open-work and underground hauling. The three methods will be briefly described.

(1) The open-cast quarrying and cable derrick hoisting is a development of the early methods. It is the one in general use. In all cases the first operation is the removal of the soil or over-burden, which in some cases attains a thickness

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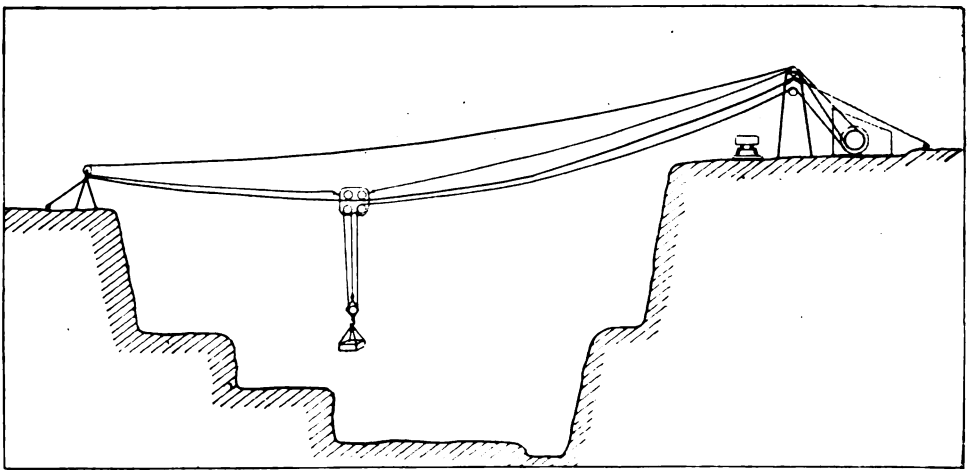


FIG. 11.—DIAGRAM ILLUSTRATING METHOD OF WORKING BY OPEN-CAST QUARRYING AND CABLE DERRICK HOISTING.

of twenty or even thirty feet. This is done during the Summer months by pick and shovel, or by horse scrapers, and the soil is loaded in dumping cars travelling on tracks which can be moved according to the needs. In the case of heavy overburden steam shovels are used instead of pick and shovels.

The quarrying is done in series of benches or terraces, the widths of which vary from 50 to 200 feet, according to the local conditions. Drilling is done by compressed air drills, the holes being placed in series of 100 or more; they are, as a rule, 18 feet deep, $1\frac{3}{4}$ inch diameter, and each one is loaded with 25 cartridges of 50% dynamite. They are blasted at the same time, bringing down several thousand tons of rock.

The next step is the "block-holing" operation; that is, reducing the large blocks of rock to sizes easier to handle. For this, short holes are drilled with portable "Jack-hammer" drills, handled by one man, and the rock is split with small charges of explosives.



FIG. 12.—AN ASBESTOS QUARRY AT BLACK LAKE.

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The broken material then undergoes a hand-sorting process separating it into (1) detached long fibre and pieces of rock which contain vein asbestos of ½ inch and more; (2) rock containing the short fibre to be treated in the mill; (3) barren rock, which goes direct to the dump, and the three sorted materials are then hoisted from the bottom of the pit, or from the benches by the cable derricks, and at the surface they are dumped into cars.

be lowered from it to the bottom of the pit. This box is then loaded, hoisted and conveyed to the foot of the tower, and dumped into waiting cars.

The hoisting installation at one of the Thetford Mines comprises four independent cable derricks, the stretched cables measure 2½ inches in diameter, and the span between the two supporting towers is 892 feet. The head tower of each measures 78 feet in height, and the other



FIG. 13.—A MODERN OPEN-CAST PIT IN ASBESTOS ROCK AT THETFORD. DEPTH OF EXCAVATION 270 FEET. THE FOUR CABLE TOWERS ARE 78 FEET HIGH.

The long fibre material goes to the cobbing sheds, where it is dressed and classified into "Crude" qualities.

The "mill-rock" cars are made into trains and hauled by locomotive to the crusher bins of the separating mills.

The cars of barren rock are hauled direct to the refuse heap.

The cable derricks used for the hoisting consist of a strong crucible steel cable, 1½ to 2½ inches in diameter, according to the span and the load, stretched across the excavation, and strongly anchored at each end, after passing over the top of two towers erected on opposite sides of the pit. A wheeled carrier travels along this cable, and by means of a steel hauling rope can be stopped at any place along the stretched cable, and a box can

45 feet, constructed of southern yellow pine. At the foot of the head tower is an electric hoist with three drums, worked by a 225 h.p. induction motor. The hoist lifts a total weight of 10 tons in a steel box which empties automatically into bins of a capacity of 100 tons, from which the cars to convey the rock to the mill are loaded.

(2) In the second method of exploitation the quarrying of the rock, the block-holing and the sorting of the material in the pit are carried on as in the first method, but the rock, instead of being hoisted by cable derrick is loaded into cars in the bottom of the excavation by steam shovels and hauled in trains up an inclined tunnel for conveyance to the mill. The steam shovels run on tracks

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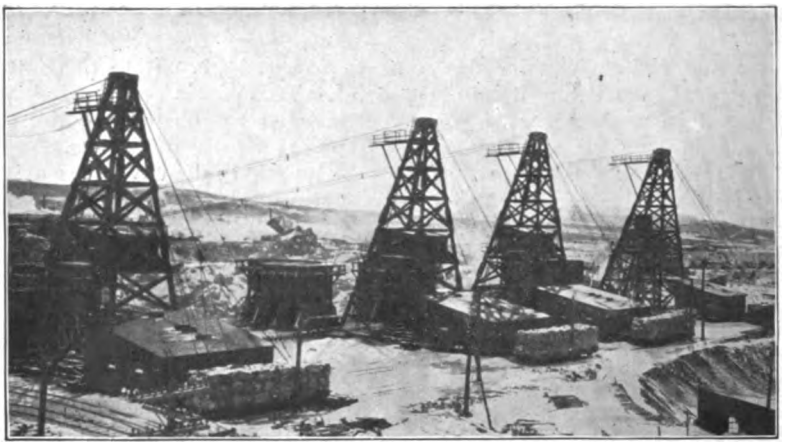


FIG. 14.—FOUR HEAD TOWERS OF CABLE DERRICKS.—The towers are 78 feet high, hoisting a ten-ton load of rock, which is dumped automatically into ore bins in front of towers.

laid between the talus of broken rock and the trains. One mine has introduced a steam shovel mounted on a caterpillar tractor, thereby doing away with the shifting of tracks when its path has to be changed.

(3) The third method of mining has only lately been introduced, but on account of the difficulties of carrying on quarrying work as the depths of the excavations increase, it is likely that it will assume great developments and will eventually be the prevailing practice. This is the " Glory Hole " or " Milling " system, as adopted for the exploitation of many large ore bodies of low grade.

This method is a combination of open-cut and underground work. The system is especially adapted to deposits and workings which handle large tonnages, as the mining and breaking up of the ore are to a certain extent carried on independently of the haulage and hoisting. It is essentially mining in open-cuts, haulage of the ore underground, and hoisting by shaft.

For this method of exploitation a shaft is sunk just outside of the ore body. From it long levels are driven into the ore deposit, from which levels cross-cuts branch out. From these cross-cuts series of raises are driven to the surface, and the mining or quarrying is carried on within a certain radius of the mouth of these raises, which assume funnel shapes and are designated as mill-holes, the ore

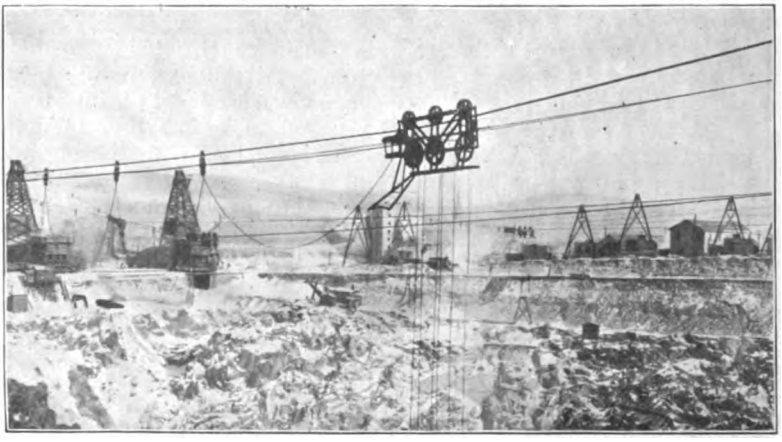


FIG. 15.—CARRIAGE OF CABLE DERRICK.—The stretched cable on which it travels is of crucible steel, 2½ inches in diameter, 982 feet span between the supporting towers.

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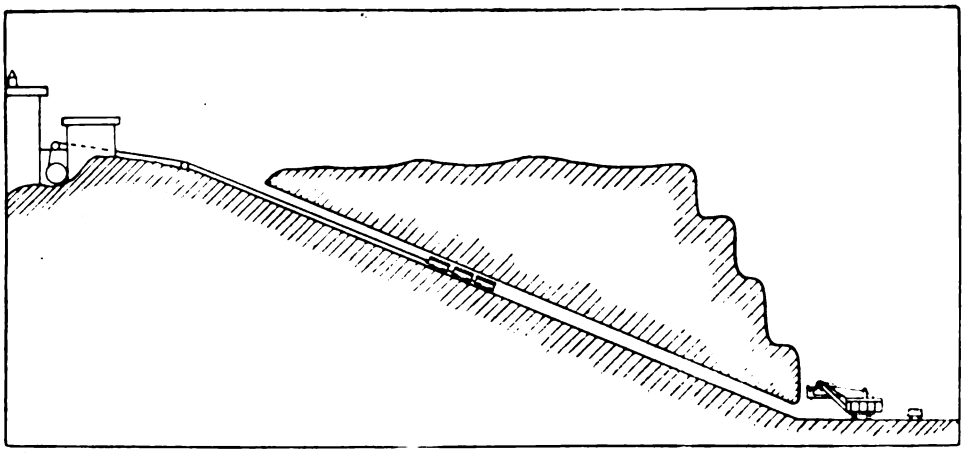


FIG. 16.—DIAGRAM SHOWING METHOD OF WORKING BY STEAM SHOVEL LOADING AND HOISTING BY INCLINED TUNNEL.

falling into them and being loaded into cars by chutes in the cross-cuts below. The cars are made up into trains and hauled to the shaft, where they are dumped into large loading pockets from which the hoisting skips are loaded. The diagrammatic sketch plainly illustrates this method of working.

This method was introduced in the district in 1916, when development work in view of its adoption was started at the Jacobs mine. It is now running successfully. The shaft at this mine is 515 feet deep, the first level is 188 feet from the surface and 1,400 feet long; the second is 175 feet lower; each milling hole serves for a radius of fifty feet, so that they are spaced about 100 feet apart. The plant is equipped to handle and hoist 2,000 tons of asbestos-bearing rock a day in two shifts.

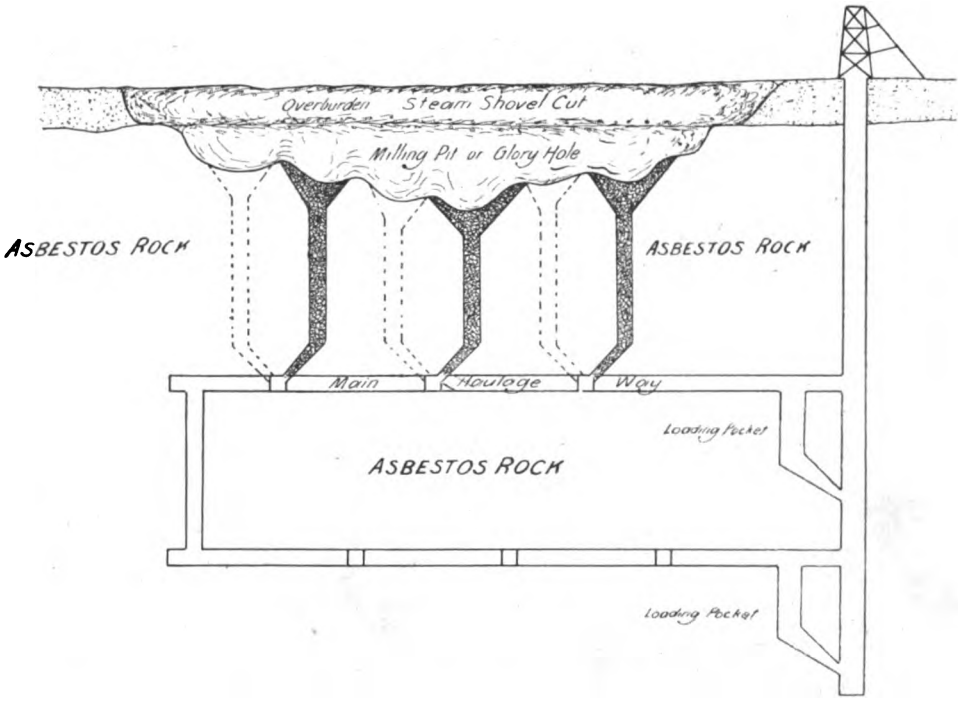


FIG. 17.—DIAGRAM ILLUSTRATING WORKING BY "MILLING" OR "GLORY-HOLE" METHOD. In the case of one mine the first level is 188 feet from the surface, and the second level 175 feet lower. The shaft is 515 feet deep.

(To be concluded.)

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Asbestos-Cement.—IV.

By W. F. GIBSON.

IT will be interesting now to take note of the presence of water in the composition of asbestos. Asbestos, whether in the rock or highly fiberised form, may be heated to 110°C under suitable conditions for many hours in order to remove the adhering moisture, or water that may have been derived from a contaminating source or other external agency, and a constant weight may be noted.

Further heating to 210°C. indicates but a very small increment of loss due to removal of moisture. The following is the average of many results obtained by experiment in the Laboratory :—

Loss after heating 10 hours at 110°C ...	2.65 %
Loss after heating for a further 10 hours at 210°C	2.97 %
Increase due to further heating at 210°C	.32 %

For general purposes it may be said that the asbestos is dry after heating to 110°C. for a relatively long period, though it was observed that the loss after 6 hours, 8 hours, and 10 hours showed a further increase of .002%, nil and nil respectively. This also means that the hygroscopic moisture has been removed, and owing to the very small amount would confirm the findings by microscopical examination, that the asbestos fibre is solid and has only external surface upon which moisture can collect as compared with some vegetable fibres which have a capillary or canal in which moisture can collect and be retained.

If this dry fibre be protected from further exposure to moisture laden or other humid influences (this is easily accomplished on the Laboratory scale) and heated to higher temperatures, some interesting changes are noted.

At 500°C. a definite loss is observed, and at the same time an equal weight of water vapour is evolved which can be condensed or suitably collected. At higher temperatures further losses occur, and in each case a corresponding amount of water vapour is evolved and can be collected, until at a temperature of 800°C. a maximum is reached, indicating that all the water has been evolved.

Some results from early work by Clarke and Schneider* are given below.

These results can be confirmed in the Laboratory with certain types of fibre, though with others the amounts of collected water are larger for temperatures between 500°C. and red heat.

It will be seen that the bond holding such large quantities of water in combination is too weak to resist the conditions of high temperature, but the precise reasons for this are not clearly understood.

It may therefore be expected that water, as such, will not have great difficulty in breaking down this bond, and even very dilute concentrations of mineral acids will do this with facility. This, of course, applies only to certain types of what is known as asbestos, though it is well known that other types not bearing the same composition behave quite differently, but these latter have not the same general utility as the former.

	%	%	%	%	%
Heated to 105°C	.96	1.20	2.04	1.53	2.26
Heated to 250°C	.55	.55	.71	.44	1.01
Heated to 400°C (circa)	.27	—	.27	.62	.98
Heated to 500°C (circa)	.23	—	.56	—	.42
Heated to red heat.....	12.37	13.01	11.81	10.58	11.32

* American Journal Science 40, 308, 1890.

(Continued on page 145. *)*

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A Chinese Asbestos Factory.

READERS of the interesting articles by Lady Dorothea Hosie which have appeared in the last two issues of *Asbestos* will doubtless have been wondering what sort of a pillow of Asbestos the authoress referred to as having acquired as "a souvenir of the factory." We are now able to illustrate both the pillow and the paper bag container, Lady Hosie having been good enough to send them along for inclusion in the large show-case which stands in our General Offices.



THE CHINESE ASBESTOS PILLOW.

The pillow is a little over a foot long by some eight inches broad, and is very heavy. It cost a dollar. "The powdered asbestos," the authoress writes, "had been sewn into a bag of white strong calico, with a much be-frilled white pillow-slip put over that, while the whole was sold me in a large paper bag printed with a highly coloured but rather attractive representation of the tree-clad hills and rocks whence the asbestos comes, and bearing the name of the Tientsin factory, and a neat advertisement in Chinese characters to the effect that 'An Asbestos Pillow is soothing to the Brain.' I do not intend to soothe my brain on this pillow; but considering that the usual Chinese head reposes on a pillow stuffed with bean-pods, I daresay powdered asbestos feels comparatively soft, and the Chinese do not like a pillow to be 'too soft,' as they call ours, so this pillow may fill a long-needed want. I hardly think so, however, for the manager admitted to me that he had no great sale of these pillows, and I think myself he had better stick to his yarn and his millboard. A Chinese, urged to new ideas by his foreign friends, often surprises them by the extraordinary forms those new ideas take."



THE PAPER BAG CONTAINER.
(See letterpress for translation.)

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The Spirit of Things, and the Things of the Spirit.

By Rev. H. V. CAPSEY.

NONE who has experience in devising schemes or organising enterprises imagines that success depends simply on programs and machinery. The inward meaning of the movement must be understood and appreciated. People must be got to enter into the spirit of the thing. This is true whether it be a social evening, a game of cricket, a charitable institution, or a League of Nations. The spirit is the life. The practical man must never lose sight of this. Failure in this particular has, again and again, resulted in still-born projects and shattered hopes, not to mention waste of effort and loss of time. To enlighten the mind is of more value than to formulate a law, to kindle an inward flame of prior concern to the fashioning of an outward altar. The life is more than meat.

But this does not mean that laws, altars, meat and the like are of no consequence; that the Spirit is everything and the "thing" is nothing. To speak thus would be to fly in the face of all one's experience of a work-a-day world. For, as a matter of fact, we know nothing of pure spirit, nothing of essence without form, nothing of inwardness without externality. Spirit must be manifested to be understood. Life is revealed and expressed in flesh and blood. As Mr. Paton, the High Master of Manchester Grammar School puts it in one place—"The house of humanity faces both ways: it looks out toward the world of appearance as well as to the world of spirit, and is in fact the meeting place of both." Our double kinship is an indisputable reality: Kinship with the material realm on the one hand and the spiritual realm on the other. There is a true materialism that cannot be denied, but, to quote Mr. Paton again, "Materialism is not wrong because it deals with material things, it is wrong because it deals with nothing else."

The greatest Teacher the world has ever known told us "Your heavenly Father knoweth that ye have need of all these things." It is the conscience of the higher relationship that must be the controlling influence in determining conduct and forming character. We must "mind the things of the Spirit" and not "the things of the flesh." These are opposite, and we are well aware of it. We develop according to our choices and our emphasis. We choose one way and tread the path of love; we choose the other and tread the path of selfishness. By the one we mount, by the other we descend. Not that the "things of the flesh" are always coarse and brutal. Far from it. Often they are attractive in form, artistic in display, æsthetic in appeal, but none-the-less destructive of the worthiest life. On the other hand, to reach out along the line of the higher kinship, "to mind the things of the Spirit," to aspire heavenward and God-ward is by no means to neglect the common duties of material existence, or to be unmindful of the call of its necessities, or to shrink from its responsibilities. It is rather to give them a new dignity, to shed upon them a transforming light, to touch them with a nobler meaning, to lift them to a higher plane and secure for them a rightful place in the life of high endeavour.

It is essential to remember that the Spirit has its "things." In itself vital, subtle, indefinable, it becomes obvious in creative activity. It determines its outward expression in keeping with its inward nature. It is visualized in forms, habits, customs and exercises, which directly correspond to its own reality. For example, a true home is always a thing of the Spirit. In its deepest meaning it is a spiritual creation. It is not a question of compartments, whether few or many, small or spacious, nor of material adornment and convenient fittings, whether meagre or lavish. Love is its secret; it is love that makes it. But all the same the love spirit has its outward and visible order—its courtesies, its conversations, its tones, its forbearances, its tears, its

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laughter, its mutual attentions and considerations, its ordered routine, its caresses, its morning kiss, its evening prayer. By these "things" it manifests and declares itself. Just think what "things" of home letters and parcels have been in these last years—emanations of its spirit, practical embodiments of its very life principle. Apropos of this thought, there is the story of the couple who strolled along the country lane. Said the youth, as a bird piped forth his evening song: "Do you know what that bird is saying?" "No; tell me!" said the maiden. "I love you! I love you!" said the youth. They passed on, and presently another bird sang out her song. "Do you know what that bird is saying," said the maiden. "No; tell me," said the youth. "Show it! Show it!" said the maiden. And he did without delay. The inward spirit of love expressed itself in that outward and visible act, a kiss.

So it is through all the reaches of spiritual endeavour. As the higher call holds sway with us so the outward conditions and relations of our material existence assume their due order and proportion, and in that very fact is demonstrated the reality of the Spirit's life. This is to make life sacramental—each act and habit, holy symbol of the inward spiritual grace. In the Christian Faith this principle passes beyond the limits of all expectation. "The Word was made flesh and dwelt amongst us."

The things of the Spirit may be often spontaneous; they are never haphazard. To "mind the things of the Spirit" is to make them matter of habit and of exercise. The best of men are not always at their best, and the most of us all too frequently fall far short. We are subject to moods; we react to circumstances; we are so liable to act as we feel. Habit can do much to steady the mercurial in us to a worthier level. Worship and prayer are essentially spiritual activities. A man says "I can worship God anywhere. I can pray any time." True! But that man is the most likely to worship God *any*where who is in the habit of worshipping Him *some*where. The man who can pray even when blacking his boots is probably the man who kneels to pray at his bedside every night. We are not meant to be creatures of our moods, slaves of our feelings. Habit and custom can tide us over the season of depression, and what is more, do much to dispel it. By minding the "thing" in accordance with his wont, even when he didn't feel like it, many a man has renewed the life of the Spirit and re-discovered its freshness and power.

ASBESTOS-CEMENT *(continued).*

It will be sufficient to mention here that when water is added to asbestos, combination takes place with liberation of certain of the molecular constituents. At the same time an inhibitory action occurs due to the peculiar action of one of the products of decomposition. Asbestos is primarily a silicate, and on molecular degradation by treatment with water the silica combines with the water forming gelatinous silicic acid. Silicic acid is not easily soluble in water, consequently the fibre becomes coated with this body, which prevents or considerably retards further action. This can easily be demonstrated experimentally by carefully selected methods, and the actual amounts of silicic acid so produced, ascertained with a reasonable degree of accuracy.

Referring now to our two-component mixture, some idea of what occurs on the addition of water becomes apparent. As secondary compounds there are calcium hydroxide (from the cement) and silicic acid (from the asbestos). These two bodies have considerable chemical affinity and unite to form calcium silicate, which tends to crystallise, and thus widely interspersed in the mass is secondary calcium silicate, forming a definite link between the fibres and cement. From this we see a double action. Normally, if the asbestos were inert, we should expect the cement to adhere to the fibres, unless a reaction occurred to prevent the same, but in addition to this normal condition there is a definitely formed compound between each exposed fibre and the contiguous cement particles, and these conditions are contributory to the strength exhibited by well-matured asbestos-cement products. (See letter in No. 11, page 87.)

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Nature Talks.—IV.

By B. R. WALMSLEY.

There is a pleasure in the pathless woods,
There is a rapture on the lonely shore,
There is society where none intrudes
By the deep sea, and music in its roar.

I love not man the less, but Nature more
From these our interviews, in which I steal
From all I may be, or have been before,
To mingle with the Universe, and feel
What I can ne'er express, yet cannot all conceal.

LORD BYRON (*The Ocean*).

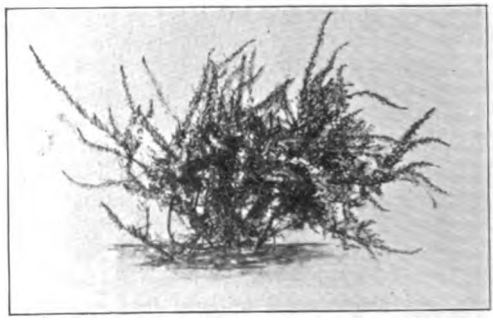
HAVE you ever felt that throb of life, that intense feeling of harmony with Nature, when the life which is pulsating through your veins feels to be part of that larger life which is pulsating through every tree, bird, animal, and insect; when Nature feels to belong to you and you to Nature?

Have you ever felt that peaceful tranquillity of soul which falls like a benediction when surrounded by Nature's silent forces; a deep rich silence which no words can convey? Some of us have. They are moments never forgotten.

One imagines that Lord Byron must have had some such moments when he penned the above verses.

One can understand Moses feeling that he must take off the shoes from off his feet, for "the place whereon thou standest is holy ground." The feeling is one of holy calm—only obtained when alone with Nature.

The Sunday after Rushbearing I happened to be waiting at the station. As train after train arrived, bringing the holiday-makers back to Rochdale with healthier looks and happier faces, I noticed what a number of people were carrying heather. What a favourite flower that is every Autumn. It is the calluna, or ling, or Scotch heather, very prevalent in North Europe, both on the Continent and at home. It is distinctly a moorland plant, though its native home



CALLUNA OR LING, from Lobden Moor.

is the west side of Cape Colony, South Africa. In South Africa the plant is much larger and the flowers larger. There are about 400 species of heather (not reckoning hybrids). Some of the larger species can be seen in Falinge Park, known as erica.

The heather of these moors is "Erica Vulgaris," which is ling, also "Erica Cinerea," which is the "Purple Bell Heather."

"Erica Tetralis," which is the crossed leaved heather, with flowers at the end of



CROSS LEAVED HEATHER (Erica Tetralis), from Lobden Moor.

the stem, not so deep a red as the bell heather. I only found the ling and the crossed leaved heather on Lobden Moor.

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I could not find the purple bell heather (Erica Cinerea). The photographs will show very plainly the difference of each kind. The ling, or Scotch heather, has always played a part in the history of



PURPLE BELL HEATHER, leaves in whorls or rings (Erica Cinerea). The small spray on the right is LING HEATHER.

Scotland. At the time of the Picts it was brewed into ale, two parts of the young tops of the heather and one part malt. In the Highlands of Scotland it was used by the poor for walls for cottages, a layer of mortar and a layer of heather. It was used for beds, placed in a sloping position, with the roots downwards. Many a Scot has found a welcome bed on his native heather, and during the war longed for one.

The Ancient Greeks believed in Gods who presided over the various parts of Nature. The Goddess "Ceres" had charge of agriculture. It was her duty to produce the crops, especially corn. Her daughter, "Prosperina," had charge of flowers. She was very beautiful and was carried away by the King of the Lower World, "Pluto." Her mother wanted her back on the earth again, but Pluto would not grant it. A compromise was arranged by which Prosperina was to be six months on the earth and six months with Pluto. Hence we only have six months Summer flowers.

As the band was playing in Falinge Park on the Tuesday in Rushbearing week one noticed the leaves falling from the trees. This is not caused by wind. Some days before the leaves fall one may notice a rustling resembling paper, a sound made as though the leaves were made of paper. These leaves are purposely cut off to prepare for Winter. At the bottom of each leaf stalk there is a double wall of cells built, which separates the leaf from the tree, and the leaf falls. Not until this double wall is built does the leaf fall, so that the tree does not bleed at all.

Notice the order in which the leaves fall, from the bottom branches first, and the leaf at the *end* of the branch is the *last* one to fall. The leaf right at the top of the topmost branch is the *last* of all. Trees which shed their leaves are deciduous trees. Others are evergreens.

Why is this? To provide against the cold snow and ice for the Winter. The broad surface of the leaf on which snow would rest would chill the trees'



PINE TREES in Eggerslack Woods, Grange-over-Sands. These do not shed their leaves for Winter.

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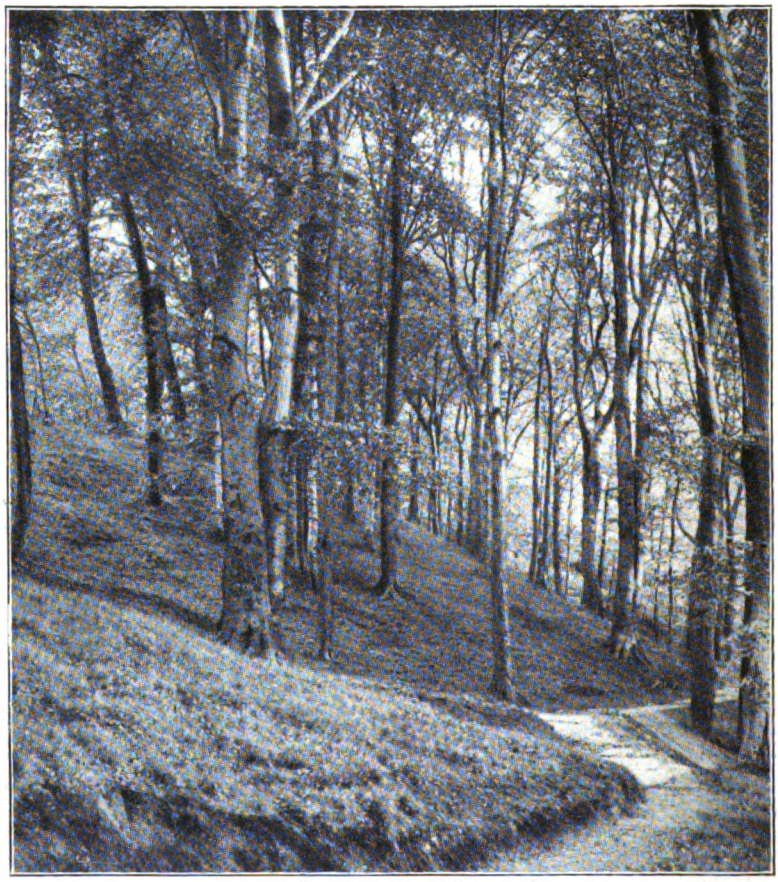
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breathing organs. It cuts them off and breathes through holes in the trunk.

The holly and the pines do not do this. Look at the holly leaf, with sharp spines round the edge of the leaf; a channel down the middle, glazed, airproof and waterproof surface on the top side. The spines cut the snow, and the channel drains it off. It is thus protected against the snow and ice.

We have only one species of wild holly in England, the " Ilex Aquiflora." It is tough and hardy.

In the shady parts of our moors, where the moor dips into a valley, we find usually a wood, such as Healey Dell, Carr Wood, Ramsden Wood, and so on. It is believed these moors were at one time wooded, but it is doubtful if trees grew on the most exposed parts.



DECIDUOUS TREES.

Typical Trees on the sheltered slopes of our moors (Summer). All shed their leaves to prepare for Winter.

Look at the pine leaves, with sharp-pointed leaves, shaped like a stocking needle, offering no surface, but cutting the snow flakes as they fall. The leaf buds are covered with tar and quite waterproof. These are evergreens; they need not shed their leaves.

The trees most prevalent in the least sheltered places seem to be a species of oak, often called turkey oak. It is not the old English oak (Quercus Sessiliflora). Its leaves are more indented and sharper at the point than the English oak. The other tree is the birch tree.

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HOLLY, showing spines or prickly points round edge of leaf and channel down the centre. (Ilex Aquiflora).

Buried beneath the peat on some parts of the moors the bark of the birch has often been found. In the woods we get trees of a later importation, such as sycamore, ash, beech, elm, chestnut.

The rocks or soil of a district determines to a great extent the growth in that district. The moors of our district being composed of millstone grit, yoredale rocks, and shale, our vegetation is the same as other places with the same soil, whereas in Northern Lancashire, such as Grange-over-Sands and Arnside, we get hills almost covered with pine trees. They could not grow in our soil.

How wonderfully Nature accommodates herself to changing conditions and provides for coming seasons. The buds for next year are already formed; the shutters are being closed against cold for the Winter; the wounds received already healed. They have proclaimed their message of beauty of form, beauty of colour, sweetness of scent, and produced fruits and seeds innumerable; each seed will unfold its message and produce its fruit for next year, teaching the world the art of symmetry, forethought, and sweetness year by year, as well as utility in providing food for mankind.



TREES IN WINTER, LEAFLESS, GROWTH STOPPED.

BEES AND BABIES.

When one thinks that any bee that walks out of its cradle, pale, perhaps, but perfect, knows at once all that is to be known of the life and duties of a bee, complicated as they are, and comprising the knowledge of an architect, a wax modeller, a nurse, a ladies' maid, a housekeeper, a tourist agency, and a field-marshal, and then compares that vast knowledge with the human baby, who is looked upon as a genius if it gurgles "Goo-goo" and tries to gouge its mother's eye out with its finger, one realises that the boasted superiority of the human brain depends largely on human vanity.—Lady Colin Campbell in the *World*.

Don't look for the flaws as you go through life,
And even when you find them
It is wise and kind to be somewhat blind
And look for the virtues behind them.

The world will never adjust itself
To suit your whims to the letter,
Some things must go wrong your whole life long,
And the sooner you know it the better.

Ella Wheeler Wilcox.

"Managers should do managerial work only. They should not busy themselves with details. They should learn to deputise—to push details down where they belong."—*Casson.*

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Home Notes.

JOINT INDUSTRIAL COUNCIL.

In accordance with the decision arrived at in May the readjustment of the percentage for cost of living took place on Wednesday, September 15th, and the figure is now 150% against 130%.

The article entitled "Problems of Reconstruction," by Mr. Percy G. Kenyon, should be read by all readers interested in the proceedings of the J.I.C. (*See page* 127.)

COUNCIL OF EMPLOYEES.

The meeting of the Council held on July 19th was attended by Mr. S. Turner, Mr. B. E. Williams, and Mr. Brierley (by invitation), and there was also a full attendance of representatives.

Mr. H. B. Spiller occupied the chair, and following the formal business, in reply to questions, reported that there had been slight improvement since the last meeting in time-keeping, but the records were now more systematically kept, a summary being made each month, showing how time is lost, due to illness, accident, holidays, leave with permission, and other causes. They would then be able to classify preventible lost time in future.

Mr. Hampson gave a report on the visit of the deputation to Messrs. Harper Sons & Bean Ltd., Tipton Car Works, Dudley. Information of the proposed Works Committee at this factory was readily given. It embodies a Joint Committee consisting of seven members selected by the Trade Unions represented in the factory, and seven members of the Management selected by the firm. No disputes or grievances of the workers are to be brought before the Trade Unions until they have first been discussed in the Works Committee.

Mr. Healey commended the clause which provided that the members of the Committee, working in conjunction with the Trade Unions, would be in direct contact with the firm, the latter having equal representation on the Works Committee. This had worked very satisfactorily at Dudley, and had been the means of remedying disputes and preventing strikes. Mr. Healey also explained that under this scheme the Trade Unions appoint the Shop Stewards, who are also eligible for election on the Works Committee on a ballot vote cast by the employees of the firm.

The Chairman suggested a revision of our constitution, and that a Joint Committee be appointed, comprised of employees and managers in equal proportions of membership, the management side being appointed by the Firm and the employee members being selected by the workers. The Joint Committee, he suggested, should meet once a month, and each Committee meet separately for consideration of the matters intended for reference to the joint meeting.

During the discussion which followed Mr. Healey said the Trade Unions had expressed approval of the Council, and that the reason the Belt and Asbestos Weavers had not elected a member to the Workers' Committee was because they did not appreciate the need as yet.

Eventually it was resolved, upon the proposal of Mr. Salmons: "That the workers be given time to consider this scheme in Committee, and a Sub-Committee be appointed to act immediately if the scheme is agreeable to the Workers' Committee."

The following members were appointed to act on the Sub-Committee: Officers' Committee: Mr. Hampson, Mr. H. C. Sutcliffe, Mr. L. Clegg, Mr. S. C. Salmons. Workers' Committee: Mr. D. Healey, Mr. A. Horbury, Mr. G. Whiteley, Miss Kenny, with the Chairman of the present Council.

The Chairman, in referring to the Benevolent Scheme (reported elsewhere), explained that the scheme was started by the Rubber Division, and had proved so successful that the members of the

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Workers' Committee thought it desirable that a similar scheme should be adopted embracing the whole of the factory. Membership will be purely voluntary, and subscriptions will be deducted from wages. The Workers' Committee will be the Executive Committee.

On the motion of Mr. Healey, the members of this Council desired to express their hearty thanks to Mr. Frank Clegg, who has retired, for the assistance he has rendered to this Council.

Mr. S. Turner then addressed the Council with words of encouragement, and afterwards gave an extremely interesting account of his recent visit to the Mines in Rhodesia.

The Chairman writes later: "The Sub-Committees appointed have met four times, and have drawn up a revised Constitution. This was submitted to the Employees' Council on Thursday, 2nd September, and with their approval was sent forward to the Directors for their sanction.

"The fundamental idea of the Employees' Council (Mr. Spiller adds) is that the employer should be able to meet his people in Committee and discuss with them plans for the progress of the business and the happiness and contentment of the workers. We have everything to gain and nothing to lose by a just appreciation and encouragement of the Employees' Council."

RUBBER MAKING DIVISION. BENEVOLENT SOCIETY.

The sixth Quarterly General Meeting of the above was held in the Pioneers' Hall on July 6th, nearly 100 members being present. Mr. F. H. Hampson occupied the chair, and after the formal business of passing the minutes and the reports of the Treasurer and Auditor, the Secretary announced that the Works Committee were starting a Voluntary Benevolent Society for the whole of the employees, with the approval of the Directors. The clerical work would be carried out by the Employment Division, and contributions would be collected through wages—to avoid collections in the factory.

The Secretary pointed out that in view of this development it would be unwise of the Rubber Division to continue the collection of contributions, and he suggested that they cease forthwith, but continue benefits until the funds were exhausted. With the £55 in hand, the 264 members would be sure of benefits for at least six months, and in the meantime they could join the new Society if they wished. Mr. Jas. Brierley said he had nothing but praise for the way in which the Society had been carried on, for the good it had done during the last 18 months, and for the interest taken in the work by the members. The management could not permit collecting during working hours because of the precedent it set up; there were a great many worthy objects for which collections were required, and he was sure the workers would see the reasonableness of the objection. Mr. Spiller made a strong appeal for the support and assistance for the new Society from the members of the old. It was eventually agreed that the Rubber Making Division Society should continue to operate until the funds were exhausted, and the retiring officials were re-elected *en bloc* for six months for this purpose.

The remainder of the evening was spent in music and dancing, songs being rendered by Mrs. Coupe, Miss O. Wilkinson, Miss T. Johnson, Mr. J. Williams, Mr. F. Kenyon, and Mr. F. Hicks (who also gave a recitation). Mr. J. A. Heys officiated at the piano, and Mr. E. Schofield acted as M.C.

EDUCATIONAL PRIZE SCHEME.

The payments under the Educational Prize Scheme have this year created a record. It is always a gratifying thing at the end of a season's work to meet with a just recompense—a reminder of something attempted, something done successfully. The most successful students perhaps were Miss Edith Cryer of the Correspondence Department and Mr. Leonard Moss of the Draughtsmen's Department.

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The 1921 session is about to commence. We would like to see our people heading all the lists when the examination results are published at the end of the year.

We would here also record the success of Mr. E. L. Dawson of the Laboratory, who has passed the First Year Course in General Chemical Technology at the Manchester College of Technology. As a result of the examination Mr. Dawson has been granted free admission to the Second Year Course.

Mr. Fred Williams and Mr. Norman Price have recently completed their I.C.S. Courses, and have been granted Joint "Turners'—I.C.S." Diplomas. Mr. Williams completed his course in record time, and is to be complimented upon his success.

THE ROYAL SHOW.

The Royal Agricultural Society of England held its Annual Show at Darlington from June 29th to July 3rd, and our stand proved a source of great interest throughout the week, despite the inclemency of the weather.

The object of the exhibits was to demonstrate the practical application of "Ægis" Asbestos Cement Building Materials to Industrial, Farm, Estate, and Buildings of a Private Nature.

The exhibits comprised: (1) An Industrial Garage, consisting of a light steel framed structure with a brick base, the walls and roof being built up of Trafford Tiles. The Garare was 39′ long × 25′ span × 10′ 6″ high to the eaves. (2) A Private Garage suitable for two cars, 24′ × 20′. (3) A Cart Shed, 16′ 6″ × 13′, covered with Trafford Tiles.

Other exhibits illustrated the application of Asbestos Cement Building Materials for interior linings, partitions, ceilings, etc.

As it is our policy to leave the application of our products in the hands of the various sections of the building trade, the Industrial Garage, being a steel structure, was erected by Messrs. Wright, Anderson & Co. Ltd., Structural Engineers, Gateshead-on-Tyne; the Private Garage, a timber framed structure, by the Stamford Building Co. Ltd., Dukinfield; and miscellaneous selection of buildings by Mr. J. W. Lee, of Chorley, Lancs., were also shown.

Trafford Tiles are of a totally different design from the ordinary type of corrugated sheeting, both iron and Asbestos Cement, the corrugations being cone shape, 2″ deep instead of the usual semi-circular formation, ¾″ deep, the advantage of the cone shape being that it gives increased strength to the tile.

On account of the light weight of this covering, the structure may be of much lighter construction than that designed to carry heavier materials, such as natural slates or ordinary tiles. This, of course, results in a very considerable saving.

Besides the actual exhibits, the inside walls of the main building were covered with coloured drawings of actual erections in Asbestos Cement which are to be found up and down the country: Mission Churches, Schools, Hospital Annexes, Industrial and Private Garages, Farm and Estate, and all manner of buildings.

A museum case of exhibits covering the basic product from crude to the different industrial purposes into which Asbestos is woven or otherwise inserted, provided great interest. Starting from the crude Asbestos, the exhibits illustrated the different processes from the crushed crude to the carded fibre, the polished and unpolished yarn to the making of the cloth, and, from this base, showing its incorporation in rubber woven sheeting, engine packings of all kinds, packings for high pressure and also for acid pumps and compressed air, surface condensers to feed water heaters, refrigerating and ammonia plants, air compressors for guns; also as millboard tubes for electrical resistances, cordage for window sashes; as millboard, paper, etc.

The Textile Beltings Department was also represented at this Show by the inclusion of exhibits of Balata Beltings, viz., sections of 5″ × 5 ply Balata Belts, white finished, unsurfaced, surfaced and green surfaced; carriage window straps, round balata banding of various

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diameters; also hair beltings, grey with waxed edges, tarred and green. A balata belt with leather edge was also shown, as was a balata strap hanger.

"ROYAL" INCIDENTS.

It certainly was an attractive card we issued as an invitation to visit our stand, but we would scarcely have believed it possible that it would be mistaken for a ticket of admission to the ground. But there you are! And it took some explanation on the part of the gate-man and the man in blue to persuade the two gentlemen applicants to the contrary.

We commenced being busy on Tuesday (Monday is the judging day), and really one cannot tell to whom one is talking when people are streaming through. Moreover, the dignified attitude of an ex-military attendant in mufti is extraordinary. It was very funny all the same, when, after spending quite a long time in explaining our products, one of our staff asked: "By-the-way, may I enquire your particular line of business, sir?"—and being met with the response, "I'm the caretaker!!"



"JOHN BULL" AT "THE ROYAL."

An overheard item: 1st Farmer: "This is fireproof stuff." 2nd Farmer: "Oh, aye, and ye can make the lot fireproof by painting the wood with a solution of alum." 1st Farmer: "Then I'll paint the shed I've got with it!" (The Insurance Company's report is anxiously awaited.)

The illustration is a snapshot taken by Mr. H. Hanson of a typical "John Bull." Unfortunately, the gentleman had only just entered the show ground, and was carrying his "topper"—the modern "Trilby" rather spoils the effect. His waistcoat was yellow, his coat a black velveteen, breeches of whitish cream leather, and "patent" top boots with yellow edging—and we mustn't forget his "mutton-chop" whiskers—all complete except for that blessed Trilby!

FIRE BRIGADE.
TOURNAMENT & COMPETITIONS.

The members of the Works Fire Brigade held a tournament and drill competition on September 11th, the grounds of Denehurst being kindly lent for this purpose by Councillor Robert Turner, J.P. Favoured with delightful weather, the event attracted many spectators, and some extremely smart work was seen. Prizes were generously provided by the directors, and at the close of the day these were presented to the successful competitors by Mr. H. Silverwood. The committee for the tournament and sports consisted of the following: Mr. W. Brierley (Superintendent of the Brigade), and Messrs. F. Greenwood, E. Schofield, C. Kershaw, H. B. Spiller, and H. Diggle; starter, Mr. Ashworth; judge, Mr. T. Chadwick; timekeepers, Messrs. Sutcliffe, Ellison, Price, Bussy, and Prescott; stewards, Messrs. F. Brierley, H. Greenwood, W. Pearson, R. Crawford, H. Sharp, and J. Robinshaw.

PRIZE LIST.

Sprinkler Drill (two men, inside brigade): 1, V. V. Kerckhove and F. Wright; 2, F. Swaine and C. Schofield.

Hose Cart Drill (four men, outside brigade): 1, P. Hulse, H. Shepherd, G. Carruthers, and E. Schofield.

80 yards Flat Race (girls under sixteen): 1, M. Trickett; 2, E. Pilling; 3, E. M. Leach.

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Three Men Drill (inside brigade): 1, T. Whitworth, H. Sutcliffe, and T. Wright; 2, F. Swaine, C. Schofield, and H. Hollows.

Firemen's Dressing Race (outside brigade): 1, E. Schofield; 2, F. Greenwood; 3, C. Kershaw.

80 yards Flat Race (boys under 16): 1, E. Morris; 2, F. Pickup; 3, E. Jenkins.

Two Men Drill (inside brigade): 1, F. Swaine and C. Schofield; 2, V. V. Kerckhove and F. Wright.

Ladies' Egg and Spoon Race: 1, Mrs. H. Holden; 2, Mrs. E. Lutener; 3, Miss L. Chadwick.

Two Men Drill (outside brigade): 1, E. Schofield and H. Shepherd; 2, P. Hulse and H. Kenyon.

Bucket and Fire Queen Drill (inside brigade): 1, C. Schofield; 2, H. C. Sutcliffe; 3, V. V. Kerckhove.

One Man Drill (inside brigade): 1, C. Schofield; 2, J. Neal; 3, J. Harrison.

100 yards Flat Race: 1, J. Gillies; 2, G. Hollows; 3, E. Jenkins.

One Man Drill (outside brigade): 1, F. Greenwood; 2, C. Kershaw; 3, E. Schofield.

Fire Bucket Race: 1 C. Schofield; 2, G. Carruthers; 3, F. Greenwood.

One Lap Obstacle Race: 1, J. Gillies; 2, H. Ollerenshaw; 3, V. V. Kerckhove.

Football Kicking: 1, H. Ollerenshaw; 2, J. Drury.

GIRL GUIDES.

On Saturday, June 19th, the Rochdale Girl Guides mustered at the Station and were conveyed by special train to the Guide Rally, held in Belle Vue Gardens, Manchester, in which 5,000 Guides took part.

Lady Baden Powell received the salute in the Grand March Past, which was very impressive, afterwards speaking of the good work the Guides were doing all over the world.

The Companies then dispersed to give exhibitions of their craft in various parts of the field. In one of the halls a fine display of handicraft work was admired by the Guides and their friends.

On Saturday, July 3rd, the Annual Sports were held on the Athletic Grounds, Rochdale, all local Companies taking part. In spite of the cold, a very good time was enjoyed.

Several picnics have been arranged during the Summer Saturday afternoons, and enjoyed very much by the Guides.

On August 10th 17 Guides of the 5th Rochdale "Turners" and their Captain set out for a week-end at Pot House, Syke. The weather was ideal and a very happy and healthy time was spent exploring the moors. The Secretary adds:—"We thank the 2nd Rochdale Girl Guides for letting us have their cottage for the week-end, and hope at some future time to repeat the enjoyable visit.

"The Winter work has begun, some new badges already won, and others working keenly to add more to those they already wear. We welcome our new Guides and hope the increase will continue. We have a small pack of Brownies to which we will be pleased to welcome new members."

FOOTBALL.

The Association Football Club are attempting big things this season—and have started well.

The Club are members of the Bury and District Amateur League, and matches are being played on the ground of the Rochdale A.F.C.

The Secretary writes: "Mr. Samuel Turner has kindly consented to be patron of the Club, and we are also indebted to the following gentlemen: Mr. Jas. Brierley, President; Vice-Presidents: Messrs. J. Berry, W. Brierley, T. Chadwick, L. Clegg, C. Dewhirst, F. H. Hampson, P. Kenyon, C. Kershaw, E. Royds, S. C. Salmons, and L. Withington.

"We have won our first two matches in handsome fashion. Away from home on the 11th September we beat Wesley Rovers 5—1, and at home on the 18th we beat Walshaw 3—0."

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There are a few more members' tickets for sale at 3/6, 5/-, and 6/- (ladies' and boys' 2/-), to be obtained from the Secretary.

A dance has been arranged for Friday, November 26th, at the Provident Hall, Lord Street. Book the date and buy your ticket (1/3).

The Secretary is Mr. H. Boden Spiller, " Sydways," Spotland.

HOCKEY.

Both the Ladies' and Gentlemen's Hockey Teams are beaten this season for want of a ground. That which they occupied last year has been commandeered by the Local Authorities for the Building Scheme. They have searched the district, enquired of everybody they know, and of many they don't know, but without success. Can you find them a ground?

ALLOTMENTS.

THIRD ANNUAL HOLDERS' SHOW.

The third annual show of vegetables grown by holders of the Allotments was held on August 28th. The exhibits were displayed in a marquee erected within the allotments enclosure. The exceedingly unfavourable character of the weather that has prevailed throughout the entire season made it impossible to have a collection of exhibits up to the standard that could otherwise have been attained, but, allowing for that handicap, the exhibitors had done well, and their decision to show as usual deserves a word of praise. The Chairman of Committee is Mr. James Brierley, and the Honorary Secretary Mr. F. C. Howarth. The Judges were Mr. Thomas Mills of Brookside, Spotland, and Mr. James Ratcliffe of Cutgate.

Mr. Ernest Royds presided over the opening ceremony, and asked the visitors to the show to remember the weather the allotment-holders had had to fight against; there had been very little sunshine and a great deal of rain. Most of those present knew the history of those allotments, how they were provided through the generosity of Messrs. Turner Brothers. During the war the allotment-holders did a good and necessary work, and the need for such work still existed, and was shown by the soaring prices of produce. There was to-day a great need that we should produce more in the various departments of activity. The allotment-holders were doing their best to produce more, and work like theirs naturally helped in the direction of reducing prices. In conclusion he called upon Mr. Brierley to open the show. (Applause.)

Mr. James Brierley said that notwithstanding the very unfavourable weather, they had a good show. They were hoping for more favourable conditions next year, as two bad years hardly ever came in succession. The Committee deserved praise for going forward with the show. They had 168 plots, which were cultivated by 151 allotment-holders, and the show contained 205 exhibits, owned by 32 exhibitors. Remarking on the way in which novices had come forward, he expressed the hope that they would win still more prizes next year.

Mr. Ben Walmsley, in moving a vote of thanks to the Chairman and Opener, said he could quite understand the feeling of depression that had been experienced by allotment-holders. The great "maker" of vegetables was the sun, and he seemed to be having a very long holiday. He hoped the exhibitors would not look upon the show from the point of view of what they could get out of it. Let it be a matter of comradeship and friendly competition, to see what they could do in the way of growing the best possible produce. That spirit of aiming at the best and playing the game ought to enter more into shows than it sometimes did. The interest they took in the show afforded them much pleasure, and the same was the case in their work on the allotments.

Mr. David Longthorne seconded, and said he thought it would have been ridiculous to have cancelled the show. He had seen there that day stuff which was quite as good as that grown during favourable seasons. The allotments movement was a matter of great importance. In the years 1917 and 1918 no less

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than seven million tons of food was grown on allotments in this country. Rochdale had a moderate number of allotments, but considering the size of its population the acreage of allotments ought to be much greater. He wished that more local firms would encourage their employees to take up allotments, as Messrs. Turner Brothers had done. (Applause.)

The judges, in the course of conversation with an *Observer* representative, remarked that the celery and leeks were the outstanding features of the show. The potatoes were very good, the sage exceptionally fine. Considering the weather, the show as a whole was very creditable.

LIST OF PRIZES.

Celery: 1, J. Farrow, 2, C. Dewhirst; 3, T. Chadwick.

Cauliflower: 1, D. Longthorne; 2, C. Dewhirst; 3, C. H. King.

White Cabbage: 1, C. Syddall; 2, A. Cheetham.

Red Cabbage: 1, A. Sheldon; 2, C. Dewhirst.

Pair of Lettuce: 1, C. Dewhirst; 2, — Humphreys.

Three Leeks: 1, C. Dewhirst; 2, J. Farrow.

Three Carrots: 1, T. Chadwick; 2, D. Longthorne; 3, F. C. Howarth.

Three Turnips: 1, A. Stafford; 2, R. Ashworth; 3, B. R. Walmsley.

Three Onions: 1, C. Dewhirst; 2, J. Farrow.

Cucumber: 1, C. Dewhirst; 2, F. Greenwood.

Tray of Vegetables (three varieties): 1, C. Dewhirst; 2, D. Longthorne; 3, Thomas Chadwick.

Six Pods of Peas: 1, J. Venting; 2, A. Sheldon; 3, — Humphreys.

Six Broad Beans: 1, J. Farrow; 2, G. Goodberry.

Six Kidney Potatoes: 1, J. Ellis; 2, T. W. Camps; 3, F. Pickup.

Six Round Potatoes: 1, A. Hammond; 2, D. Longthorne; 3, J. Farrow.

Six Heavy Potatoes: 1, J. Venting; 2 and 3, equal weight, C. Dewhirst and J. Ellis.

Three Beets: 1, J. E. Buckley; 2, C. Syddall; 3, T. Ellis.

Root of Sage: 1, J. Farrow; 2, C. Dewhirst.

Root of Parsley: 1, J. Farrow; 2, D. Longthorne.

Three Parsnips: 1, C. Syddall, 2, A. Cheetham.

Three Swedes: 1, D. Longthorne; 2, A. Sheldon; 3, J. Ellis.

Marrow: 1, A. Sheldon; 2, — Humphreys.

Kale: 1, J. Farrow; 2, T. Eastaugh.

Special prize for exhibitor taking most prizes: C. Dewhirst (10 prizes).

(*Rochdale Observer* report.)

AN INTER-DEPARTMENTAL BOWLING MATCH took place on Saturday, June 19th, on "The Birches" Bowling Green, between the Balata and Proofing Divisions, with 16 aside. "Balata" won easily, scoring 156 to their opponents' 109, winning 13 games to 3. After tea, photographs of each side were taken, which was followed by a Balata Division Bowling Handicap. Some very close games were played by the 18 participating, and the prize-winners were: (1) C. Boon, (2) T. Chadwick, (3) J. Proctor, (4) A. Kelly, (5) G. Whiteley.

CHAR-A-BANC OUTING.—On Saturday, September 4th, a merry party of the Ladies' Staff had a char-a-banc run to Buxton. After unearthing a few stray members from the Art Gallery, they got underway and enjoyed an uninterrupted run to their destination. There they dispersed on such tours of discovery as appealed most to individual tastes, finally meeting for a very enjoyable tea. The return journey proved that the presence of the sterner sex is not absolutely necessary for the thorough enjoyment of a char-a-banc outing.

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FOUR GREAT DELUSIONS.

That Virtue is Unpleasant.
That Violence is Effective.
That Work is an Affliction.
That Happiness is Obtainable.

Dr. FRANK CRANE.

Industry made an amusement is the key to the greatest happiness;

Joy in work is found by working understandingly;

Men develop by work and understanding;

They feel their growth and know the joy of life.

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