ASBESTOS

VOL. 1. ROCHDALE, JANUARY, 1918. NO. 1.



This allegorical drawing, by Bernard Partridge, represents "Asbestos" standing between Civilization and the destructive elements.

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This Magazine

is published Quarterly and is Free to all who are sufficiently interested in it to apply for a copy.

Contributions are invited from any member of our Staff or Workpeople, our Business Friends, and well-wishers of the Firm generally.

All communications should be addressed to the Editor, "ASBESTOS," Turner Brothers Asbestos Co. Ltd., Rochdale.

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ASBESTOS

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ASTOR, LENOX AND TILDEN FOUNDATIONS
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VOL. 1. ROCHDALE, JANUARY, 1918. NO. 1.

Thoughts from the Editor's Fireside.

"*THE workshop shall be as a sanctuary into which men shall enter with joy in their hearts and laughter in their eyes.*"

The words of a dreamer, you exclaim. True, the words of a dreamer. But are not all good things first born in dreams and thoughts? What but a dream were the words of Isaiah, when he comforted Israel with the promise of the days when they "should run, and not be weary; should walk, and not faint?" It is thousands of years since that dream was first dreamt. Are not the days nearer now when the promise will be realised in sober fact? Despite all the horrors of the War, there never was a time when a well-balanced understanding mind could more surely "run and not be weary, walk and not faint," than to-day. The increased knowledge of the last two centuries has made the schoolboy wiser than Newton; the great age of discovery—still only in its infancy—has revealed to the humblest worker things which many prophets and kings have desired to see, and have not seen. At no time was the promise of life for the ordinary man richer or more certain. It rests with us to grasp it.

And after all, is our motto so mere a dream? There are men now—hosts of them—who go to their day's work as gladly as a boy runs to school. If some, why not all? And when all men find joy in work as the few now do, will our motto seem only an idle dream?

This little magazine is inspired by the hope that it may contribute in some measure at least to the coming of the day of peace and content in industry. It is your magazine, and you are asked to use it as your magazine. All sorts of topics will be discussed in its pages, and if you have anything helpful to say upon any of them we ask you to say it. Here we are, between one and two thousand of us, dumped down on a few square acres of God's earth. Why should we not try to work out the best possible relations between each other? Why should we not exchange thoughts freely, so long as we each seek the good of all? *Let our contributions be helpful* rather than critical, *constructive* rather than destructive. Then we can soon make this factory, with all its incidental activities—choral societies, allotments, boy scouts and all the others that spring up out of it—a place of interest to all associated with our work.

That goal, we may hope, is soon reached. The larger hope of our motto is only to be attained in the future—whether near or far depends mainly upon ourselves. We shall gain the sanctuary when we deserve to, when we have fitted ourselves

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for it, and not before. All we can do from day to day is to strive to bring the ideal a little nearer. It is in the main a psychological problem. Human evolution is a slow process, a process of centuries. Our care must be to place ourselves in such relation to the great forces of life which are beyond our control that each day's work and effort brings its own reward; and that not only in wages and profits, but in happiness as well.

The cynic no doubt will sneer and say, "This is all very well: but what about working conditions as they are to-day? What hope is there of the realisation of your motto when you look at them?" Let us admit the harshness of many human relationships. Is that a reason for making no effort to improve them? Because the way may be long, and the goal distant, are we to sit down in despair, abandoning hope? All that any group of men can do in the world to-day is to strive after the greatest realisation of better things. Do not let us forget the French proverb, "Time respects nothing done without his aid." Because the building may be slow, it is not therefore the less sure. The essential difference between men is that some have the "wishing heart" and some don't care. We plead guilty to a desire to bring our own lives and those of our fellows to the fullest possible degree of attainment.



ARRAS—BEFORE THE HUNS ARRIVED.

Doubtless there are limitations to the possibilities of attainment. It is a natural law that no form of life shall develop or survive unless it deserves to do so by its own efforts. Before men can get a better world to live in, they must deserve to live in a better world: they must contribute by their own action to its realisation. There never has been, and there probably never will be, a world in which discontent is impossible. A confirmed grouser could bring about a strike in the heavenly choir —and in fact did. But this spirit has nothing to do with the merits of its environment. It is found far more commonly among those who have much than among those who have little. Content is a habit of mind, which everyone can attain while continuing to strive after practical betterment.

But how is that to be attained? How are the conditions which excite the cynic's scorn to be made, if slowly, to give place to a better order? There is no way but one. If improved conditions are to be realised, the price of improved conditions must be created. Mankind has sighed in vain for Utopia. It has never been realised, because the world has always been too inefficient to create the price of Utopia. A business organisation, striving after a more humane relationship in industry, can only achieve anything by being as efficient and producing as economically as its competitors at home and abroad. That is a bed-rock fact, on which all our fortunes, whether we like it or not, are built. It cannot be disregarded without

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inviting certain catastrophe. We must earn the price of each step in advance: to try and take it before the price is earned, is to make a fall inevitable, and to assure that the last state will be worse than the first. All progress is conditioned by this law, that man cannot have his cake without paying for it; and the amount of cake he can have at the moment is conditioned again by the relative state of competing industrial institutions at home and abroad.

It is the ignorance of this law, or the refusal to accept it, which has been the tragedy of industry in the past. Under the stern law of nature, the man who cannot earn his livelihood perishes. The primitive savage killed or left to die members of the tribe who had become useless to its elementary economy. The brutal instinct was founded in an unconscious reason; for the tribe which preserved its useless members, under the old savage forms of competition, would have been so hopelessly handicapped that it would soon have been extinguished. Civilisation has changed, to the immeasurable advantage of mankind, the form of the struggle. Hard and cruel as it may still be, its most ferocious rigours are now an evil dream of the past in all civilised countries. But though the form has thus changed, the struggle remains, and its essential principles are not altered. It is as true now as ever it was that the nation which produces little can consume little; and the law of the nation is only the law of the individual written large. No man can produce much without benefiting his neighbours infinitely more than he can possibly benefit himself; and no man can consume without producing except at the cost to the community of an ultimate loss far greater than the actual value of the goods he consumes. These are still laws against which it is useless to strive. Man did not make them, and he cannot alter them, no more than he can make or alter those which govern his physical health. The attempt to resist and defy them in each case is the way of destruction; it is to the man who accepts them simply and understandingly that the path to progress and happiness lies open.



ARRAS—THE PENALTY OF WAR.

We are not purveyors of miracles, but merely business men and workers, anxious to evolve the best for all and everyone within the limits prescribed by the many forces beyond our control. What success may attend the enterprise depends, as we have said, upon the spirit in which it is undertaken. By the indifferent and the careless, nothing was ever yet accomplished. Even to those who do earnestly desire and strive after the ideal, it shines still afar off, too often never realised. But at least they strive towards the goal, with whatever stumblings and failures and disappointments; and all history is their record that their struggles are never wholly vain.

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Greeting.

To the Editor—

PLEASE allow me to send a note of Greeting to your new Magazine.

As I was practically one of the workers of Turner Brothers Asbestos Co. Ltd., for many pleasant months, I shall take the keenest personal interest in each number of the Magazine.

You are plucky in starting a new Magazine at a time like this, but you know how the Firm is—it never lets a difficulty stand in the way.

As I have many personal friends among the staff and employees of the Firm, I shall be glad to send them a word, once in a while, through the pages of your new Magazine.

Let me give you all a motto for the New Year—

WHEN DIFFICULTIES INCREASE, PUSH HARDER.

Yours, with all good wishes,

HERBERT N. CASSON.

Editorial Notes.

"ASBESTOS"—*our own Journal*—has been brought to birth in very troublous times, which, viewed in the light of history, is a good omen. We say "our own" journal, because it is the magazine of our staff and workpeople generally. It is our keen desire, and our every effort shall be expended to the end that every employee of the firm shall be able to look upon "ASBESTOS" as his or her own in a very personal sense.

* * *

All who are sufficiently interested to ask for a copy of the journal may receive one. We think no objection will be raised to this course when it is explained that the only reason we have for not adopting the alternative of automatic distribution, is that to a certain extent we ensure interest by insisting upon requests being made for individual copies. Notwithstanding this, however, it is highly probable that we shall eventually make a list of the names of those repeating their requests and thereby showing their sustained interest, which will result in such persons being sent the journal automatically as issued.

* * *

A Roll of Honour is in course of preparation which is intended to form a permanent record of those who have answered the Call of Duty. When ready we hope to reproduce this Roll in "ASBESTOS."

A Sales Conference was recently held in Manchester, and was well attended by members of our outside Sales Organisation and Managers from our Head Office. Mr. S. Turner presided, supported by Mr. Williams. An instructive paper was delivered by Mr. Tom Caine, dealing with "District Organisation." Mr. Caine illustrated his remarks with examples and exhibits. The paper was very much appreciated and a keen discussion followed. Mr. Loudon then gave an address on "Our General Selling Policy," in which he traced the development which had taken place during the last few years. The importance of samples to the salesman was the subject of a contribution by Mr. Evans, and Mr. Williams followed with an outline of the future policy of the Firm. The result of the Conference went to show the necessity for closer co-operation and greater effort than ever in order to maintain our position, to increase our sales after the war, and to achieve the best results in a national sense.

* * *

A letter has just been received from Mr. H. L. Thomas, our Australian representative, giving an account of his return journey. He appears to have had a rather exciting time, and it is gratifying to learn that he has arrived safely at his destination.

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Factory Efficiency.

By R. J. WILSON.

NO organisation can have permanence except it grows, however gradually, and its vitality is the reflex it receives from those in authority. My sole desire is to attempt with all the dynamic I possess, to arouse enthusiasm for better ways and means of producing goods better and cheaper than heretofore, not by lowering wages, but by the channel of scientific investigation wherein the work required is reasonable and the remuneration satisfactory.

This question of factory efficiency, so far as output is concerned, has become one of my purposes in life, and is approached not only with a spirit of patriotism but rather of the altruistic. What more laudable ambition is there to inspire anyone than that of working for the greatest number—for the victory of organisation over chaos.

If only the present worker can have vividly brought before him the power at his disposal to raise not only himself, but his co-workers, and every being in whom he has or has not interest, the victory—not of the present war alone—but of the commercial war which will assuredly follow in the wake of the present armed conflict, is ours and his. As a nation we have lived so long in a state of lethargy, that while the present war is responsible for inspiring many with the required zeal and vigour to build up a nation of which the next generation shall have reason for pride, their efforts in this direction are being dangerously hazarded by the inefficient.

At the present time our commercial position—yea! our very civilisation hangs in the balance. All our traditional ways of thinking and working have been put to the test, and "found wanting." New problems have emerged and some old problems have become more acute. Perseverance, promptitude of activity and extreme tact must be ruling factors in our efficiency campaign. The majority of employees are sequacious, but it behoves the employer to have an unfeigned confidence in the efficacy of his methods in order to abolish—*ab initio*—the insusceptibility always hovering round the worker.

One of the greatest problems that managers have to face to-day is the economical utilisation of labour, which problem can only be solved by studying and applying efficiency methods.

Here we need to pause a moment in order to clearly perceive the extent of the benefits to be derived from efficiency methods. Statistics taken only so far as the employer, might tend to sow seeds of discontent in the mind and thought of the narrow-minded public, together with the employer, by whom too easily the fact is overlooked that there are three parties who participate in the profits ensured. These are:—

1. The employee.
2. The employer.
3. The consumer.

THE EMPLOYEE.—In as much that the conditions of working are always improved for him: his wages increased, and his range of "possibility"—not to mention "practicality"—so widened as to make his outlook in life much more congenial and interesting. The whole morale of the

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man is improved, having its effect on those he supports and the training of the young branches of his family tree.

THE EMPLOYER.—There is a healthier spirit pervading his output, which is increased at lower costs, but here, alas! often lies the bone of contention with the employee, who—not yet having had the broadening of his mind cultivated to enable him to see further afield than the precincts of his little nest and that of his employer, requires bringing to his notice the *universal benefit* of which he really has an opportunity of being one of the *benefactors*, namely to :—

THE CONSUMER.—The consumer! To penetrate the limitations of this participator might easily fill page after page. Through the market channels the public buy, and it goes without saying that the reduction in costs to the employer rebounds upon the public—which again includes the employee.

Oh! that man had acquired the art of infusing the workmen with that zest characteristic of sport. Take a football match for instance. What interest, enthusiasm, energy and thirst for victory will he display, and for what reward? For the honour of *victory alone*. Revert for one moment to the soldiers on our battlefields. With what willingness have so many risked, and others sacrificed, their very lives. We know the war allowance is not responsible for their gallantry; we are still more certain that love of the nature of their work has not prompted them to give up their all. No! only the very highest motives could reveal the glorious unselfishness which has been lying dormant in mankind for such a considerable time, but which, at this momentous period of our lives, is serving the "Home of our Fathers" in good stead, namely, the *fight for right* and all that it conveys.

When will this spirit enter our factories?

Once competition was mainly physical. With naked hand or rudest club men fought for existence. Later, with poisoned arrow and hurtling spear they battled for the best fisheries and the richest hunting grounds. The primitive struggle produced physical individuality, the physical giants, the Nimrods, the Achilles, the Agamemnons, kings of men. Then competition became a little more intellectual, producing an Alexander, a Richard Coeur de Lion, finally a Napoleon.

Next came the modern world where men battle, not with clubs and spears, but like bulls and bears, with cornerings of the market and tricks of stocks. Let us co-operate in industry and compete only to see who shall best serve the public. When men seek to serve the public, a higher character is produced. The development of species by environment is one of the commonplaces of science to-day, as proved by most careful scientists.

Taylor, the pioneer of Scientific Management, gives as his definition of Efficiency :—

> "Knowing exactly what you want workers to do, and seeing that they do it in the best and cheapest way."

You will note there is no regard expressed for the workers, and from all accounts published and handed on verbally, it is known that Taylor made up his mind, after careful study, how he wanted the job doing and so it had to be done.

A more specific definition of Efficiency is to my mind

> "A correct and reasonable use of time, materials, and labour, having regard for the labour involved."

In striving after Efficiency due regard must be made for the limitations imposed by the circumstances of each case. These limitations will only be discovered as you proceed in your observations, therefore it is impossible for me to lay down any rule of procedure.

It must be admitted that the output of any particular job can, when carried out with proper tools and under intelligent guidance, be increased, on the average, as much as twofold, when physical exertion is the limiting factor.

In my next contribution it will be my endeavour to present briefly the three aspects of Factory Efficiency, viz :—Men, Materials, and Methods.

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The Origin and Properties of Asbestos.

By H. W. ROWELL.

THE name "Asbestos" has been applied indiscriminately to fibrous minerals, but in executing an order for "Asbestos" the manufacturer or merchant only supplies the white variety known to mineralogists as chrysotile, for this constitutes over 95 per cent. of the raw material of the trade. An increasing tonnage of the blue fibrous mineral crocidolite, which forms, however, a very small proportion of the asbestos output, is now manufactured for special purposes but is only supplied against a specific enquiry for "Blue Asbestos." The remaining minerals are of practically no commercial value as the fibres are brittle, lack tensile strength, and are too short for textile purposes.



These fibrous minerals are found in all parts of the world, but most of the commercial asbestos is mined in Canada, and the highest grades are produced in the Thetford and Black Lake districts.

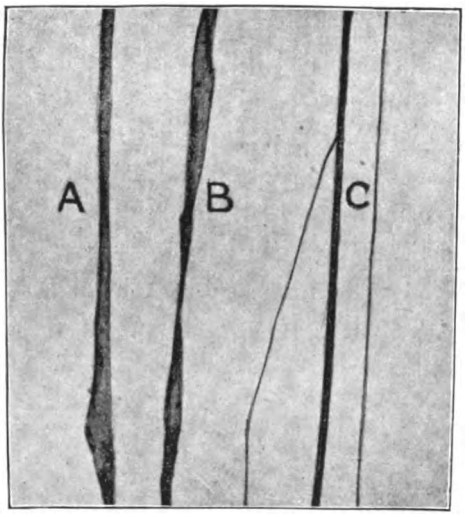
The illustration gives some little idea of the appearance of the mineral. It is a hard and compact rock with a pale yellowish green colour and a semi-transparent appearance. A gentle rubbing with the finger will detach masses of beautiful silky fibre from what appears to be a homogeneous piece of rock, and it is not surprising that this mineral became in early days the tool of magicians and alchemists and the source of many travellers' tales.

The fibre occurs in veins lying in the slate-coloured serpentine rock of Quebec, these veins ranging from several inches thick down to a mere streak. Large quarries are worked, with galleries or drifts in some cases running from the bottom of the quarry following veins into the rock sides. The rock is drilled and blasted out with dynamite, then the roughly sorted material is lifted to the surface by ropeway hoists covering the whole area of the quarry. The large vein material is sorted and the adhering rock removed with hand hammers. The best of the resulting material forms the "No. 1 Crude" of the trade and yields fibres of one inch and upwards in length. The short fibre sorted out and the narrow veins are treated by special crushing and fiberising machines which separate the crushed fibre from the rock and produce a number of grades for export which vary in length and quality of fibre and freedom from rock.

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In the micro-photograph reproduced it will be seen that when compared with fine Egyptian cotton and silk, the fibre is of extremely small diameter, for the bunch of asbestos shown is composed of a large number of individual fibres. By projecting the image of these fibres as seen under the highest power oil immersion microscope lens on to the camera screen to magnify them over a thousand times, and then measuring this image with a micrometer, it is found that they vary from ·000027 inch to ·000041 inch in diameter, but it has yet to be proved that even these represent the ultimate single fibre.



A—Raw Silk Fibre.
B—Egyptian Cotton Fibre.
C—Bunch of Asbestos Fibres.
MAGNIFIED 100 DIAMETERS.

Research work in the laboratory on the structure of the fibres has to give place to more urgent problems in these times, but such investigation is of more than scientific interest as it provides the data for improvement of the finished asbestos article.

There are many ingenious machines used in the production of fine fibre from the crude material, but the ideal set of machinery has yet to be developed which will separate every individual fibre from its neighbour without breaking the length, and so enable yarns to be spun which will be finer than the most delicate silk.

The properties of Asbestos will be further discussed in future issues.

Parties and Factions.

ON his return after a long absence, the late Lord Kitchener was forcibly struck by the fact that the formerly homogeneous body of intelligent Mohammedan inhabitants who constituted a collective community based on fixed social laws is now split up and divided into parties and factions of a political character.

"Whatever the value of a party system may be in Western political life, it is evident that its application to an intensely democratic community, the essential basis of whose social system is the brotherhood of man, combined with respect for learning and the experience of age, is an unnatural proceeding, fraught with inevitable division and weakness.

"The development and elevation of the character of a people depends mainly on the growth of self-control and the power to dominate natural impulses, as well as on the practice of unobtrusive self-reliance and perseverance, combined with reasoned determination. None of these elements of advance are assisted in any way by party strife. Calm and well-considered interest in political affairs is good for both the governed and those who rule, but fictitious interest, generally based on misrepresentation and maintained by party funds and party tactics, does nothing to elevate or develop the intelligent character of an Oriental race."

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The Birth and Progress of the India-rubber Industry.

By H. S. WALKER.

THE object in writing these short articles for publication in our home journal is to place before our readers some interesting data connected with the earliest records of the india-rubber industry, and to show how, from almost accidental discoveries, one of the most important industries in the world has developed. The first reference to india-rubber dates back to the year 1525 when M. L. Tillier points out that P. Martyr d'Angliera published a description of rubber playing-balls seen by him in Mexico.

In 1536 a Spanish writer of Madrid, Gonzalo Fernandês d'Oviêdo y Valdas mentions in his general history of the Indies the game of Batey, which is played with a ball made up of a substance different to those used by the Christians. Another Spanish writer describes the same article as made from a black resin, obtained from a tree called by the natives Ulaquahuil. In Mexico and Central America the natives still use the word Ule-tree, for the Castilloa Elastica, which is the botanical name for this rubber producing plant.

Antonio de Herrera Tordesillas, a Spanish historian, writing in 1601 in his general history of the voyages and conquests of the Castilians in the islands and mainlands of the East Indies, pronounces for the first time the name gum, in connection with india-rubber. The same author, when speaking of the conquests in Mexico, mentions certain trees which, when punctured, yields a milk, which becomes converted into a gum.

In 1682-1761 Father Charlevoix, of the Society of Jesuits, describes the batos, or ball, as being of a solid matter, but extremely porous and light. Soaring higher than other balls, it falls to the ground and rebounds higher than the level of the hand that it quitted, and at each subsequent rebound the height diminishes.

Whatever the date may be which marks the first recognition of this important article in civilisation, we must give credit to the Spanish and Portuguese explorers of the West Indies, to be the first to observe it in their literature.

About this time a few samples of the material had been brought to Europe, and graced the collections of curio hunters. The samples were very expensive, as much as one guinea being paid for an ounce.

In 1736 a French scientist, Charles de la Condamine, after his arrival at Quito, the capital of Ecuador, despatched to the French Academy some rolls of a blackish resinous mass known under the name of caoutchouc. With the material he sent a report, in which he says :—

"In the forests of the province of Esmeraldas grows a tree called Hévé ; there flows from it, by simple incisions, a liquor white as milk, which gradually hardens and blackens in the air. The natives make lights of it, which burn

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without a wick and are very bright: In the province of Quito, sheets of linen are covered with it, and it is used for the same purpose as we use wax cloth. The same tree grows on the banks of the Amazon river, and the Mainas Indians call the resinous fluid cahuchu. They make shoes of it, which are waterproof, and shape it into the form of bottles, for preserving all kinds of liquids."

Pursuing his investigations, he describes the peculiar use one of the tribes made of india-rubber :—

"The Omaguas, a tribe living in the middle of the American continent, on the banks of the Amazon river, make a still more curious use of the resin. They make pear-shaped bottles, on the necks of which they fasten wooden tubes. Pressure on the bottles sends the liquid squirting out of the tube, and these bottles resemble syringes. Here is to be found the origin of the name which the Portuguese gave the tree supplying the rubber; they call it Pao de Ciringa (syringe wood), and the natives collecting the gum are called Seringarios (seringueiros)."

At this point La Condamine had to give up his pursuits of this peculiar substance, and devote his time to his own profession, for he was a doctor of medicine and an eminent naturalist.

At this time he came in touch with Fresneau, a French engineer, located at Cayenne (an isle of French Guiana), who seemed to grasp the importance of this substance, and took up the work where La Condamine had abandoned it. Fresneau studied the real source of the gum elastic tree and, finally, found among the Coussaris Indians the much-sought-after tree. In a note which he addressed to La Condamine he describes the characteristics of the gum tree, and at the same time communicates the first exact notions as to the methods employed by the Indians to obtain the india-rubber.

"The British Philistine."

LIKE all poetical natures he loved ignorant people. He knew that in the soul of one who is ignorant there is always room for a great idea. But he could not stand stupid people, especially those who are made stupid by education: people who are full of opinions not one of which they even understand, a peculiarly modern type, summed up by Christ when he describes it as the type of one who has the key of knowledge, cannot use it himself, and does not allow other people to use it, though it may be made to open the gate of God's Kingdom. His chief war was against the Philistines. That is the war every child of light has to wage. Philistinism was the note of the age and community in which he lived. In their heavy inaccessibility to ideas, their dull respectability, their tedious orthodoxy, their worship of vulgar success, their entire preoccupation with the gross materialistic side of life, and their ridiculous estimate of themselves and their importance, the Jews of Jerusalem in Christ's day were the exact counterpart of the British Philistine of our own. Christ mocked at the 'whited sepulchre' of respectability, and fixed that phrase for ever—*De Profundis.*

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Coal Wastage.

By A. E. LUDFORD ELLIS.

ON all sides to-day we are exhorted to save, to economise and to husband our resources. One of our most important commodities is coal, and yet hundreds of tons are being wasted, partly through ignorance and partly through lack of interest. This enormous waste is evident when one considers the great amount of heated surfaces which are allowed to remain uncovered, and also the greater amount of such surfaces which are inefficiently covered. When it is realised that every square foot of uncovered pipe surface working at 100 lbs. per square inch represents an annual preventable loss of 625 lbs. of coal, I think it will be agreed that the question of covering heated surfaces demands the intelligent interest of all coal users.

There are many old established firms in the country to-day who employ men in charge of their steam power plants who perhaps are good engineers but have not the data to enable them to calculate the losses on their steam pipe lines. An example of this came to my notice a few weeks ago.

Jenkins was the engineer in charge of a mill plant whose directors were obstinate when improvements were suggested, and when Jenkins put forward a scheme for the insulation of pipe lines he was confronted with the questions "What will it cost?" and "What will we save?" In a word Jenkins was "stymied." Luckily he had a friend who had given this question of coal saving a deal of study, so he 'phoned him and explained his troubles. Over the wire the following questions were fired at Jenkins:

1. What is the pipe size?—4-in. bore.
2. What is its length?—50 feet.
3. What is the working pressure?—100 lbs. to sq. inch.
4. What kind of coal do you burn?—Semi- bituminous.
5. What do you pay for it?—19/- per ton.
6. Is the steam pressure on the pipe the same for 24 hours day?—Yes, and every day of the 365 days in the year.

"Hold the line a minute, Jenkins, and I'll give you the answer."

While waiting, Jenkins thought his friend must be a wizard to figure it out as quickly as that.

"Hello, Jenkins," came over the wire, "that covering should cost about £6 and the saving in one year would amount to £15 12s. 6d. If that's all I can do for you, good afternoon."

"Hold on a bit," said Jenkins, "if I come along, will you show me how you figured that out? It is something I should like to know, and don't."

"Come along, by all means, and I'll put you through it." Later it was explained to Jenkins that like most other power plant wastes, this loss is felt at the coal store. The amount of heat in coal is expressed in British Thermal Units, one B.T.U. being the amount of heat required to raise the temperature of water one degree Fahrenheit.

Now a bare pipe will radiate 3 B.T.U's. per sq. ft. of surface per hour for each degree of difference in temperature between the pipe and the surrounding air. Therefore, it is necessary first of all to obtain the area of the pipe, the tempera-

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ture of the steam in the pipe, and the temperature of the surrounding air.

You have 50 feet of bare pipe, but we will calculate on a pipe one foot long, for convenience, and then multiply by 50.

Now look at this table:—

Bore of Pipe.	Superficial Area of One Lineal Foot in Sq Ft.
1-inch	0·345
1½ ,,	·491
2 ,,	0·620
2½ ,,	·785
3 ,,	0·916
3½ ,,	1·047
4 ,,	1·177
4½ ,,	1·310
5 ,,	1·440
6 ,,	1·702
7 ,,	1·996
8 ,,	2·258
9 ,,	2·520
10 ,,	2·814

You have a 4-in. pipe, so each lineal foot will have 1·177 sq. ft. outside surface. Here is another table giving the temperature of steam at various pressures.

Gauge Pressure in Lbs. per Square Inch.	Temperature of Steam in Degrees Fahr.
50	298
75	320
100	338
125	353
150	366
175	377

Your pressure is 100 lbs., so that the temperature of steam in the pipe is 338 deg. We will assume the temperature of the surrounding air at 70 deg. all the year round. The difference in temperature between the pipe and the surrounding air is 338 – 70 = 268 deg. That means that each square foot of the 4-in. pipe will radiate 3 B.T.U's. for each of those 268 deg. of temperature difference. The heat lost from one lineal foot of 4-in. pipe would therefore be 1·177 × 3 × 268 = 946 B.T.U. per hour. Now by covering the pipe you could save 80 per cent. of this, so the heat that would be saved by the covering would be 946 × 0·80 = 757 B.T.U. per hour.

The heat value of the semi-bituminous coal you are using would be about 13,850 B.T.U's. It must be understood that not all of that heat gets into the water of your boilers, probably not more than 65 per cent., therefore the amount of heat from your coal that gets into the steam is 13,850 × 0·65 = 9,002 B.T.U.

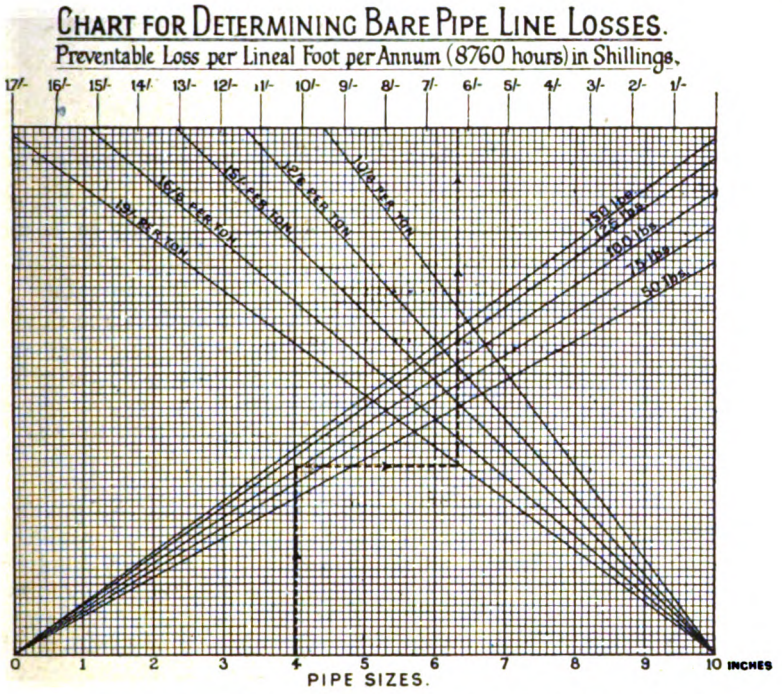
We have proved that every running foot of uncovered 4-in. pipe is wasting 757 B.T.U. per hour; there are 8,760 hours in a year, so that each year the preventable waste is 8,760 × 757 = 6,631,320 B.T.U. Divide this by 9,000 will give you the number of pounds of coal wasted = 6,631,320 ÷ 9,000 = 737lbs. You are paying 19/- for 2,240 lbs. of coal, so that the money value of coal is (737 × 19) ÷ 2,240 = 6·25 shillings, which means each running foot of bare 4-in. pipe in your plant costs you an unnecessary 6/3d. per annum. Your pipe is 50 ft. long—therefore the total preventable loss in your case is 50 × 6/3d. = £15 12s. 6d.

"That is not very difficult to work out," said Jenkins, "but how did you give me the figures over the 'phone so quickly?"

"I didn't work it out as I have done for you just now, but took it from the chart herewith, which is worked out in the same way, but covers a variety of different conditions. When you have this chart, all you have to do is to start at the pipe size, run up to the proper pressure line, then horizontally over to the proper price line, and then up to the top (*see chart*) where you will find the answer." Jenkins' pencil ran over the lines marked with the arrow heads—result, 6/3d. per foot. "That is what happened when you were waiting on the 'phone; then I multiplied by 50,

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IN COMPUTING THIS CHART THE FOLLOWING ASSUMPTIONS ARE MADE:—

Temperature of air surrounding the pipe	**70°** Fah.
Heat Emission of Bare Pipe	**3** B.T.U. per sq. ft. per deg. difference in temp.
Efficiency of Covering	**80** %
Efficiency of Boiler and Furnace	**65** %
Heat Value of Semi-Bituminous Coal	**13,850** B.T.U's.
∴ Using Anthracite Coal multiply the preventable loss by the factor	**1·175**
or Bituminous Coal	by the factor **1·04.**

the length of your pipe; the answer was £15 12s. 6d."

"What about the cost of the covering?" said Jenkins. "Well, I have found that the approximate cost of a covering can be estimated fairly closely by using the following formula:—Cost of 1 lineal foot of covering fixed = (diameter of pipe in inches × 3·5) + 12 pence. In your case you had 50 ft. of 4-in. pipe, so all I did was to multiply 4 × 3·5 and add 12, which makes 26 pence. This is the approximate cost in pence per running foot of applied covering. You have 50 ft. of pipe, so if you multiply 26 × 50 you get 1,300 pence = £5 8s. 4d.; to this I added 11/8d. for fares, etc., and called it £6."

"Jolly good," said Jenkins, "I should like a blue print of that chart and I guess I can answer my directors' questions now, and convince them that it PAYS to cover pipe lines."

It is peculiarly appropriate to receive at this time a note from Mr. LUND, our late Advertising Manager, who is now serving in the Royal Garrison Artillery at the front. The photographs of Arras Town Hall, reproduced in this issue, will be viewed with added interest when it is learned that they have been received from Mr. Lund.

Help the institution you are working for to make good and you will be helping to make things better for yourself in the future.

The right kind of a job to have is one where good work and attention are required, for they help a man to get the right kind of habits.

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Music Values.

By W. B. PRICE.

MUSIC may be defined as the art of expressing feelings and ideas through the medium of sound. The power of music alone is limited to the expression of general feelings or classes of emotions such as those of gaiety, elevation, solemnity, melancholy, or sadness. Aided by verbal language it is capable of expressing the more particular passions of ambition, fortitude, pity, love, gratitude, hope. Hence the greater popularity of vocal over instrumental music.

It is in general true that poetry is the most accurate interpreter of music. The two arts are very closely related, the word music being derived from the Latin word *Musa*, the spirit of poetry and song. Both music and poetry play on the emotional nature, and when combined, as in vocal music, the one helps to interpret the other. This will explain to some extent why vocal music, having the aid of verbal expression, is the most popular on account of it being more easily understood. Instrumental music is more difficult to understand for the reason previously stated. This type of music, which dispenses with the aid of verbal language, appears to the average musical mind to mean something, but the meaning is not clear enough to define. It might incline the heart to sensibility, but the aid of language would be necessary to improve the sensibility into real emotion by fixing the imagination upon some definite idea.

The highest form of orchestral music, viz., the symphony, is only fully appreciated by those possessing the poetic nature, that is to say, those with truly poetic imagination. To these few this form of music is the most satisfying as it inspires their imagination, enabling them to form, by a mental process peculiar to themselves, their own interpretation. It must not be supposed that the interpretation of one individual corresponds exactly with that of another hearing the same composition, except in a general sense. The explanation is also the reason why this music is the most satisfying, *i.e.*, the spirit or soul of the music appeals in a more or less different way to different emotional natures (though the fundamentals remain the same), while at the same time it conforms to the individual requirements, speaking musically. If the poetic gift is lacking, the higher forms of musical composition cannot be understood to the full, although a certain amount of enjoyment is derived by those musically inclined. In the case of those possessing the poetic gift, music supplies a want and satisfies a mental appetite, and the best kind ennobles the mind, and improves the moral character. It is best, therefore, to cultivate a taste for good music with the right kind of soul in it. As in literature, there is every variety ranging from the cheap sentimental to the classical, and it is a regretable fact that the former is the more popular, chiefly through neglected or depraved musical taste.

The opera and oratorio represent the most complete forms of musical expression, consisting of vocal and instrumental music in combination. The composer of opera or oratorio has the means of teaching lofty ideals, limited only by the degree of his greatness. The oratorio certainly exerts a religious influence. It may, for instance, be said to be capable of describing a biblical story—its limitation in this respect being evidenced in its inability to impart definite moral or religious teaching in itself—or is it a lack of human understanding? The opera errs in the same direction to a greater extent by taking for its theme a legend or myth and, in some instances, just an ordinary story of love and passion, the result being that it fails to exert to the full its influence on the best of our emotional nature. What ennobling influence an opera or oratorio could convey if both music and language were as one—an inspiration of one mind presenting a great ideal, instead of being, as now, a combination of the work of two or more minds, not always in accord—is a problem worthy of deep thought and consideration.

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T. B. A. Boys.
The Case for a "Turner" School.

By A. G. ALLEN.

THE subject of the training of boys in industry is one in which I have been deeply interested for many years, long before the term "Boy Welfare" was thought of. During my short term of office, its extreme importance from the standpoint of the interests of the firm has been vividly envizaged, probably because of the tentative arrangement whereby it has been part of my duties to engage lads, and to record their progress as far as possible. I do not mean, however, to claim any special capacity for dealing with the subject on that account. Quite the reverse. Education is not a "one man job," though I admit someone must take the lead in whatever direction it is desired to proceed.

The field of boy welfare and vocational training is so wide, the interests involved so diversified and far reaching, that while centralisation of policy might be worked through a committee, centralisation of administration—pre-supposing as it does the possession of universality of knowledge by one man—would tend to manufacture an egotistical autocrat, who would be averse to changes and progress, and by his manner would effectually prevent the boarding of new ideas.

I take it as agreed that the future success of the firm depends upon the boy of to-day, and that he should be taken in hand with a serious *motif.*

It is as well, perhaps, also to lay down as agreed principles, that the building up of character is the first desideratum; next comes technical or vocational studies, and lastly physical training. To these there can be added anything which will help in forming desirable habits in the everyday life of a citizen.

A boy's work during the vocational period should be varied as much as possible. The most direct way to a boy's heart is by way of interested activity, and to sustain interest, variety is necessary. This means that a boy should not be put to one monotonous job right away, a point which I elaborate further on. In this consideration I am reluctantly compelled to ignore the boy who of necessity has to seek employment offering the most immediate monetary result. I do this upon the principle that to attempt too much is to court failure. Until we arrive at a higher stage of both social and industrial development, "the hewer of wood and drawer of water" will be both necessary—and forthcoming in plenty. We should however, I submit, endeavour as far as possible to leave a door open for the poorest lad who has native wit enough, in spite of adverse circumstances, to take advantage of it.

The boy I have in mind is the son of the enlightened workman, and those of foremen and executive officers generally. Very few indeed of such parents can do for their boys what a great many of them know to be necessary. A certain amount of good work is done by Evening Classes, and Technical and other Schools, but I think it will now be generally conceded that the results in this direction have been very disappointing, which, when one considers the condition of fatigue in which a boy must attend such school after a full day's

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work, need not occasion surprise. Experience has taught that tuition should be given in the day time.

It may sound a foolish saying, but I am seriously of the opinion that the problem presented by the needs of the firm in this direction is of too specialised a character to be tackled by the Education Authority, even if it were otherwise desirable—which it is not for obvious reasons. At the same time those who control now have to provide the expert and the executive officer for the next generation, and the Great War has tremendously accentuated the need for prompt action.

I have, therefore, arrived at the conclusion that such are the nature of the Asbestos Industry and the position of a firm like ours, that in our own interests we should organise our own scheme of Vocational Education.

The Asbestos Industry is practically new. Many of the processes of manufacture are secret, and loyalty is an essential condition of success. These are, I submit, overwhelming arguments in favour of a "Turner" Vocational School.

Mr. Fisher's proposals for Part-Time Continuation Schools rather favour the idea in that exemption is specifically provided for those undergoing some suitable form of alternative instruction. It may fairly be expected that private schemes as proposed herein, will eventually receive State recognition if at all successful Indeed, it is practically promised later, when Mr. Fisher says "the Government did not desire to discourage voluntary effort, and believed that very great benefit accrued from the recognition on the part of employers of their educational responsibilities toward their employees."

The "Turner" Vocational School should be conducted distinct, as far as practicable, from the Business Organisation. The reason for this is that the school is intended as a complement of the works, and its atmosphere should be that of a college to assist in the development of tone and character, a broadening of the mind as well as the acquisition of technical theory.

It is a matter of common experience that spasmodic effort of a voluntary character—voluntary on the part of either lecturer or student, or both—is inadequate, and its result transitory. Whatever is decided upon, must, therefore (I submit), be of a compulsory character, rounded off in a complete scheme of continuous education.

Managers or other capable persons in the business might be invited to lecture occasionally, but nothing and no one should be permitted to come between the principal and the boys during school hours. I leave the consideration of the vital subject of staff appointments, being outside the scope of this article.

A proposal of this kind, however, involves the necessity of some control by the firm upon the governing body of the school, to ensure that the investment is not wasted through boys being attracted by tempting offers elsewhere just when the firm is entitled to look for some return in loyal and intelligent service. I therefore propose a revival in some form of indentured apprenticeship covering a period of not less than five years, or alternately, to terminate when a boy reaches his twentieth birthday. The certificate of such indentureship should be free from all penalising clauses as to personal conduct, &c. It should take on a higher tone having the underlying assumption of a value to be striven for and adhered to for its own sake.

In my next article I shall discuss details of the proposed "Turner" Vocational School.

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A Word about Allotments.

By A. BLAGDEN.

IT must have been as gratifying to the firm as to the employees to feel that "Turners' Allotments" have played their part in warding off the spectre of famine, which only a few months ago was stealing slowly but surely over our land. Whilst regretting the cause, we cannot but rejoice to find how quickly it has been proved that the soil of Old England, aye even the soil of smoke-laden Lancashire, can be made to bring forth abundant fruit.

In spite of our once considered insuperable difficulties, it was really wonderful to see the results obtained on "Turners' Allotments" during one short season's working. The plots were for the most part cropped to their full capacity; the crops, generally speaking, were well-grown and healthy, and failures were few and far between. Much as was accomplished in 1917, much more we hope will be done in 1918.

Each allotment holder should make notes of his successes or failures, and during the Winter months make all plans and arrangements for the coming Spring. The rotation of the crops should be so arranged that, as far as possible, each variety is grown on a different part of the plot this year to that occupied by it last year. Consideration should also be given to what is likely to be grown next year, so that the best means of obtaining the same might be decided upon. Generally speaking, on large groups of allotments, some sort of co-operative system of purchase is arranged amongst the holders, as by purchasing in bulk a great saving may often be effected.

Confining my remarks for the present to the land already broken up, let me here say allotment holders should take every opportunity to dig up and stir the land, leaving the surface as rough as possible to be acted upon by the mellowing influences of the weather, at the same time burying all green vegetable matter that will not burn, except of course infested cabbage stalks, and the like. With regard to manuring there are differences of opinion. If manure is available dig or trench it in during the Autumn and Winter months, having regard to the scheme of cropping outlined above, and knowing what each plot of ground is being prepared for. If the land is deficient in lime (which is always most valuable on heavy clay soils) it should never be applied with the farmyard manure, but should be spread upon the land in the form of a *dry powder*, say, about the month of March, and should then be lightly forked into the top three or four inches of soil; as, having a natural tendency to sink, much of its value is lost by digging it in deeply, as is the general custom. Artificial manures, generally speaking, are best applied either at the time of cropping or during the early period of growth, and should be put on with a view to correcting the deficiences of the soil, and also to satisfying the wants and requirements of the crops to be grown upon it.

Turning my attention now to the breaking up of new land, much unnecessary labour was expended on many plots last year, and much valuable time was therefore lost. Presuming the grass land proposed to be broken up is of fairly good

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quality, the process to be followed is quite simple. As an illustration, we will suppose each plot to be 10 yards by 30. String a line around your plot, and with a sharp spade nick or cut the turf all around your boundary line; then mark off two rows of turves, say, *each* 10 or 11 inches wide, across the *end* of your plot, and nick these with your spade or verge-knife. Skim these two rows of turves off thinly and remove them to the other end of your plot, together with the first spit of good soil dug out from under them. You have now an open trench, say, 1-ft. deep and 22-in. wide, across the end of your plot. Do not now make the common mistake of bringing the much inferior sub-soil to the surface, but stir it and break it up well and deeply (quite another foot); pick out the large stones and leave the mould lying loosely at the bottom of the trench. On this now spread a layer of rotton manure (3 to 4 inches deep); then nick and skim off the next two rows of turves, and place them grass side downwards on the layer of manure in front of you, and chop them with the spade. Over these spread another layer of manure, and then the top spit of soil from under the second two rows of turves must be turned over on to this and well broken up. You have now completed your first trench; the operations here outlined are repeated to the opposite end of your plot, and here the turves and soil from your first trench are used to level up the last one. By this means you break up your land to an even depth of about two feet, your soils are kept in their proper rotation, and you can use your manure in any proportion according to what you intend to sow or plant upon it. If you desire to throw up your surface soil into *ridges*, this can easily be done after trenching, never before, by simply walking backwards, at even distances, across your plot and turning the soil left and right, thus forming a loose ridge of soil, and, by working backwards, leaving a loose furrow also. Never make the mistake of digging out loose soil and piling it into ridges on the solid. Dig or trench your ground thoroughly first, and in the case of Winter digging leave the surface as *rough and open* as possible, for reasons before stated. Always remember that whatever is worth doing—in a garden—is worth doing well, and that your success or failure depends, in a great measure, upon the preparation of your ground in the first instance. Always work, not only with a will, but with a *system*, and always keep all tools clean and bright. Do nothing haphazard, but everything in its season. In the sowing of small seeds, make *two thin sowings* at short intervals rather than one very thick one; and always transplant seedlings as soon as they are big enough to handle.

Always remember that proper preparation of the soil, by reasonably deep digging and plentiful manuring, overcomes many of the difficulties of a bad climate. Do well to your land, sow good seed, and you will be justified in expecting a bountiful harvest.

The man who would sell the secrets of his institution to a rival concern would, in so doing, sell his character for less than the proverbial mess of pottage.

The man who makes friends among those he comes in direct contact with in his work from day to day, will seldom be heard to complain of a shortage of friends.

It is easy enough to figure out either failure or fortune on paper, but it is a different thing when you come to making these things in real life.

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Twelve Months' Scout Work

By W. BROOKES.

THE 19TH ROCHDALE TURNERS' OWN B.P. BOY SCOUTS was formed on the 24th November, 1916, and affiliated to the Rochdale and District B.P. Boy Scouts' Association. The troop has been run entirely on the patrol system, and has completed a fairly successful first year. Its first public appearance was at a meeting of the employees of the firm, in the Provident Hall, in February, 1917, where the troop flag and union jack were consecrated by the Rev. Rainey Workman, and handed to the troop. The programme for the Winter months, 1916–1917, was carried out in the form of two meeting nights per week, drill and elementary scout work being taught to the boys. At the commencement of Spring, the troop secured an allotment and cultivated it for the growth of potatoes. The results have turned out very satisfactory, about 4 cwts. of potatoes having been produced.

The Spring and Summer months were occupied two or three nights per week with outdoor sports, rambles, and the training of the boys for their second-class badges. About 40 boys have passed their second-class scout badge test during the Summer period.

On March 31st, 1917, the Chief Scout, Lieutenant-General Baden-Powell, visited Rochdale. During his speech in the Town Hall he referred to our troop as representing the initial step in the formation of Industrial Scout troops, no other workshop troop being in existence in the North of England.

Between February and April the boys were trained in ambulance work, and out of 20 boys attending this class, 13 sat for their examination and 12 were successful.

During the Whitsuntide holidays at the end of April, 30 boys visited the village of High Lane, near Stockport, and enjoyed a four days' out-door camp. The whole of the camp preparations and cooking was carried out by the boys and their officers. In addition to the outdoor games and scout work a total of 20 boys have attended swimming classes at the local baths one night per week during the Summer months.

During the first six months of the year various members of the troop carried out war work, such as assisting in the General Post Office, Railway Station, and local Hospitals.

During the August local holiday week several members of the troop spent a very enjoyable camp at Blowing Sands, near Blackpool.

On Saturday, September 8th, at the invitation of the R.A.O.B. Society, the troop took part in the sports on the Rochdale Athletic Ground, organised in aid of R.A.O.B. War Charities Fund. They were fortunate in carrying away the whole of the laurels and prizes given to Boy Scouts. The prizes chosen by the boys were books to the value of over 30/-, with which it is intended to form the nucleus of a Scout Library. On Saturday, September 22nd, the troop was invited to assist, along with a neighbouring troop, at a Gala and display held at Wardle, in aid of the Wounded Soldiers' and Sailors' Fund. They took part in ambulance displays, tent pitching, and general scout work, and again returned victors, bringing home two of the three prizes offered.

On a few of the Autumn Saturday afternoons, the boys have spent their spare time in gathering sphagnum moss, which is very much needed in the hospitals as a substitute for cotton wool for bandaging purposes. Many of the boys have been studying the various subjects to gain their scout badges; 20 scouts are entitled to wear from eight to ten badges.

During the last few weeks our programme has been a very quiet one to encourage and enable the boys to take up subjects at the Evening Classes at the Technical Schools, etc. We are commencing our Winter session of training immediately, and among other subjects a course of lectures on electricity will be given, the subjects on alternate Friday nights being Electricity, and Boilers and Combustion Engines. Chemistry, carpentry, wood carving, and other subjects such as plumbing, textile work, etc., will be introduced at convenient intervals.

The membership of the troop is about 45, the boys ranging in age from 13 to 17 years.

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The Girl Guide Movement.

By MRS. M. CUDWORTH.

THE Girl Guide movement is making steady progress in this and other countries, which is not surprising when one understands the idealistic principles upon which it is based. The organisation is very similar in principle to the Boy Scouts, differing only in detail.

The chief branches of training are:

1. Character and Intelligence.—The training in character comes largely through suitable games and practices, which give moral as well as physical health. The games develop the spirit of self discipline, self sacrifice, fair play, honour, co-operation, obedience, and observation. There are many interesting and instructive pursuits also which provide not only healthy and pleasant recreation, but at the same time are instrumental in developing character and intelligence. The Guide laws form an important part in the development of character. When being enrolled, the Guides—who have previously had the meaning of the laws made clear to them—promise on their honour to keep the laws, which comprise the following: To be honourable; to be loyal to God, to the King, their country, parents, and employers; to be useful and to help others; to be friendly to all; to be courteous; to be obedient and cheerful; to be pure in thought, word, and deed; to be thrifty.

2. Handicrafts and Homecrafts.—In many cases education ceases on leaving the elementary school, in the absence of a much needed compulsory system of continued education. The Girl Guide movement helps to remedy this and other defects in our national system of education. The training creates a desire to learn and a love for learning, which leads the Guides on to becoming skilled in handicrafts and professions likely to be useful to them. In addition, every encouragement is given to the Guides to become capable of keeping good homes, the training for which includes cookery, housekeeping, laundry, needlework, infant care, etc.

3. Service for others.—The motto of the Guides is, "Be prepared," which means that Guides must be prepared by discipline and training to help themselves and other people. Service for others includes training in sick nursing, first aid, life saving, etc.

4. Health Knowledge and Physical Development.—Health is essential to happiness and good work. Guides are trained in the laws of health, and derive beneficial results and pleasure from physical exercises, outdoor pursuits, swimming, etc.

5. General.—The Girl Guide movement is undenominational; on the other hand, in addition to the Guide prayer, which is of the highest character, the Guides are encouraged to belong to some religious denomination, and to attend the services. The movement is also non-political. The object of the Girl Guide movement is to so develop the girls mentally, morally and physically, that they may become useful, happy, prosperous and honourable citizens. Speaking recently at Manchester, Lady Baden-Powell (the Chief Commissioner of the Girl Guides) quoted a sentence from a speech made in London by Sir George Cave, the Home Secretary, to the effect that the only way to remedy most of the social evils was through such movements as the Girl Guides. How much better would it be for the girls themselves, their parents, and the country, if their leisure time was utilised in increasing their usefulness and efficiency instead of being wasted in aimlessly wandering about the streets. Many girls have had no inclination for attending evening and technical schools, much to their own loss. The Girl Guide movement meets a long felt want by providing recreation and an outlet for the spirit and enthusiasm of the girls, developing their character, and encouraging them by a system of working for badges, to take up studies in various subjects. The women and girls have it largely in their power to make the country what they choose. Character, sobriety, usefulness, efficiency, energy, endurance, courage and patriotism, together with the duty of attention to health, are the things most needed, and are what the Girl Guide and Boy Scout movements—which have been described as "practical Christianity"—stand for.

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Home Notes.

ROCHDALE.

ALLOTMENTS.

The results of the past season have been most gratifying; the total value of the produce was estimated by an expert to be approximately £400. The splendid result reflects great credit on the allotment holders generally.

Helpful advice and assistance have been readily given by Mr. Weaver and Mr. Burghall, the latter being the local representative from the Food Production Department of the Board of Agriculture.

To stimulate interest it was decided to offer prizes for the best cultivated plots, which were awarded as follows:—1st: J. Shepherd, Plot No. 10; 2nd: J. Farrow, Plot No. 12; 3rd: J. Jenkins, Plot No.76 4th: T. Eastaugh, Plot No. 37; 5th: D. W. Sunderland, Plot No. 59; 6th: F. Greenwood, Plot No. 8. Mr. A. Blagden kindly officiated as judge.

The Directors have thrown open a further lot of land near the existing allotments. The plots were eagerly sought for, and the holders are now busily engaged in turning them over to weather for the Spring. An encouraging feature is the number of allotment holders who have taken up new plots.

By way of appreciation for work done, and results obtained, Mr. S. Turner kindly invited the allotment holders, new and old, together with their wives, to tea and concert held in the Provident Hall on November 7th. A thoroughly enjoyable evening was spent.

The number of plots let at present is 121; there are still some plots vacant, which may be had on application to the Secretary. The allotment holders are now members of the Rochdale and District Allotments Federation, which has been established for the purpose of co-operative buying of seeds, &c., disposal of surplus produce, and assisting allotment holders generally by lectures and expert practical advice.

CHORAL SOCIETY.

This Society was formed last Autumn, under the leadership of Mr. B. Rowley. The present membership totals about 45.

The good work performed in the rendering of part songs at the Company's gatherings throughout the Winter established the Society upon a firm foundation.

The rehearsals have been held fortnightly through the Summer.

About 50 members and friends joined in an enjoyable outing to Grant's Tower in the early part of the Summer, and in September to Heaton Park. The members and friends also held an enjoyable social evening in October.

The first public appearance of the Society took place on November 20th, at the Provident Hall. The concert was in aid of the British Red Cross Society and the Y.M.C.A. Emergency Fund, and as a result the sum of £22 5s. 2d. was divided between these two funds. All the artistes are employees of the firm. Altogether the performance was very creditable and gave pleasure to a large and appreciative audience. Hearty congratulations to the principals for the admirable and delightful renderings of their various items; also to the choir and conductor. The choir was well balanced

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and the part songs were excellently rendered in good tone and with much taste.

The Choir is now having weekly rehearsals, and any employee wishing to join, especially men who can sing bass, would be most welcome. It is hoped that the interest taken in the choir by members and other employees will be maintained, so that it may go forward and do some further good work.

GIRL GUIDES: 5th ROCHDALE "TURNERS."

The Company was formed in May, with a membership of 45, with Miss Ogden as Captain. The formal enrolment took place in July, when Miss Behrens, the Commissioner for Lancashire, visited Rochdale for the purpose. About 30 of the Guides have passed their Tenderfoot test, and are now working for their Second Class Badge.

The Company has taken part in the following events:—July 7th: Patrol Leaders and Seconds assisted in the National Baby Parade, which took place at Falinge Park. July 21st: Sports Day at Beechwood, which was held by a combination of five Companies of Rochdale Girl Guides. September 8th: Field Day on the Athletic Grounds, organised by the R.A.O.B. for war charity funds. Our Company took part in the grand march, and were successful in obtaining book prizes for two of the events.

Some of the Guides have now commenced knitting socks, scarves, and mittens for the soldiers and sailors, whilst others are making hospital bags.

On account of the evening classes, and also the darkness of the streets, the Guides are only meeting one night per week at present.

DRAMATIC SOCIETY.

This Society has now assumed definite form, well supported by the office staff; together with a good number from the works. The first general meeting was held recently, at which the work of the provisional committee was confirmed, and officials with standing committee elected. It is gratifying to note the increasing interest which is being taken in the society, approximately 60 members having joined, upwards of 40 signifying their willingness to become acting members. Short modern one-act plays have been selected, and rehearsals have commenced. Provisional castes only will be chosen, in order that by the process of elimination the most suitable persons shall be chosen to take part.

Arrangements will ultimately be made to form reading classes, elocution classes, &c., which will be at the same time instructive and interesting. Several offers of help have been received from experienced members, which the committee will not fail to avail themselves of. The aims of the society are very ambitious, and it only requires the loyal support of all members—acting or otherwise—to ensure complete success.

WORKS FIRE BRIGADE.

In the Autumn the Works Fire Brigade held a fire drill competition in the grounds of "Denehurst," the residence of Mr. Robert Turner. Great interest was displayed in the various competitions, and prizes were given by the directors to the successful competitors. The tests were very smartly performed, and evidenced the keen interest taken in the work by the members. The arrangements were carried out with credit, and

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good assistance was rendered by the Boy Scouts. As an appreciation of the work done, the members of the Fire Brigade and their wives were entertained to tea at the Provident Hall by Mr. Robert Turner on September 1st. After tea an enjoyable social evening was spent, a concert being given by members of the choir.

The Brigade hold two silver cups won at a competition held on the Athletic Grounds in July, 1914. On account of the war the competition has not been repeated.

EDUCATIONAL.

The object of the prize scheme which has been in operation several years, is to encourage employees to attend evening classes. Particulars of the scheme are given on the notice boards. Twenty awards have been gained this year, amounting to £12 7s. 6d. It is hoped that the current session's results will be much greater both from the works and the office employees. The awards this year have been gained principally by the office employees, but as all subjects are included, viz., technical, commercial, and domestic, an opportunity is given to all employees to participate in the awards.

The Superintendents and Managers of the various departments will be pleased at any time to advise students in the selection of suitable subjects. The importance of attending evening classes cannot be too strongly urged upon junior employees.

STRING ORCHESTRA.

Will instrumentalists please send in their names to Mr. W. B. Price, Advertising Department, as it is proposed to call a meeting of all interested, for the purpose of forming a String Orchestra. It is thought that this will prove an excellent addition to the societies already formed on account of the valuable assistance which it will be possible to render the Choral and Dramatic Societies at socials and entertainments.

Judging from the very excellent musical selections given by three members of the office staff at the recent office social, there is every reason to believe that a first-class orchestra can be formed, and it is hoped that there will be a good response from all interested.

SUGGESTION SCHEME.

Since the inception of this scheme 18 months ago, the sum of £147 10s. 0d. has been paid for suggestions of value. The experience gained showed where the scheme could be improved, and after careful consideration an amended scheme was put into operation on November 1st. Particulars of the new scheme are posted throughout the works. Every employee of the firm is invited to make suggestions.

GENERAL.

The India Rubber and Asbestos Ring Section showed practical sympathy with a sick colleague who is the widow of a former employee. They realised the sum of £12 10s. 0d. by means of a Benefit Social held on September 8th.

The Balata Department also are to be congratulated on the success of their Benefit Social held on November 3rd. As a result a balance of £16 was realised for the benefit of the widows of two of their fellow-workmates who have made the supreme sacrifice.

The promoters thank most heartily all subscribers and helpers for assistance.

For nearly two years the Balata Department have been sending parcels to their colleagues who have joined the Colours.

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The money is raised by means of a weekly collection and a parcel containing comforts, &c., is sent weekly to each in turn.

These parcels have been much appreciated by the recipients, who from time to time express their gratitude.

Since June the C.A.F. Department have also been working along similar lines. When a man is in hospital, money is sent instead of parcels, and special arrangements are also made in the case of prisoners of war.

On November 9th a subscription social was held by the office staff, which proved to be a successful effort. The nett amount realised allowed for 11/- being sent to each of the 25 members of the office staff at present serving in H.M. Forces. The acknowledgments received indicate that the recipients are looking forward to the time when we shall all be together again.

TRAFFORD PARK.

"TURNERS' OWN" II.
Trafford Park Boy Scouts.

This troop has been working under some difficulty; in the first place on account of Assistant Scoutmaster Arthur Jones having joined H.M. Forces. Patrol Leader H. Tirroll was then installed as Assistant Scoutmaster, but he likewise was called to the Colours during October. W. Hamer has now consented to act in this capacity.

At present five patrols are in full commission; these will have to be further increased on account of the number of Scouts, now a total of 50.

The Scouts are receiving technical training one night per week from the Troop Committee, the subjects selected being: Electricity, joinery, chemistry, and mechanics. These activities have now been commenced, electricity being taken as the first subject. Instruction classes are held at the Scouts' Headquarters, Public Hall, Eccles.

CHORAL SOCIETY.

This Society is fairly established and possesses promising talent. Several entertainments have been given by the choir, the glees, &c., rendered by its members reflecting great credit on the Society's activities.

GENERAL.

It has been arranged to hold a social gathering once a month convened by different sections of the workers, in which both the Choral Society and the Boy Scouts will take part.

Becoming soured over the thought that your efforts are not properly appreciated will not help you much in getting the recognition you deserve.

At Eton a short time ago, a boy, writing of the poet Milton, said:—"Milton was a great poet who wrote 'Paradise Lost'; then his wife died and he wrote 'Paradise Regained.'"

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