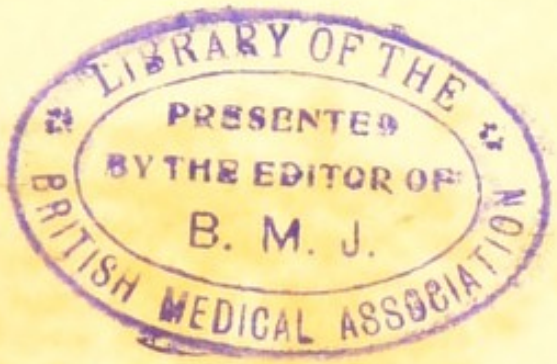
Industries for the feeble-minded and imbecile : a handbook for teachers / by A. Bickmore.

INDUSTRIES

FOR THE

FEEBLE-MINDED

A. BICKMORE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INDUSTRIES FOR THE FEEBLE-MINDED AND IMBECILE

A HANDBOOK FOR TEACHERS

BY

A. BICKMORE

CRAFTSMASTER

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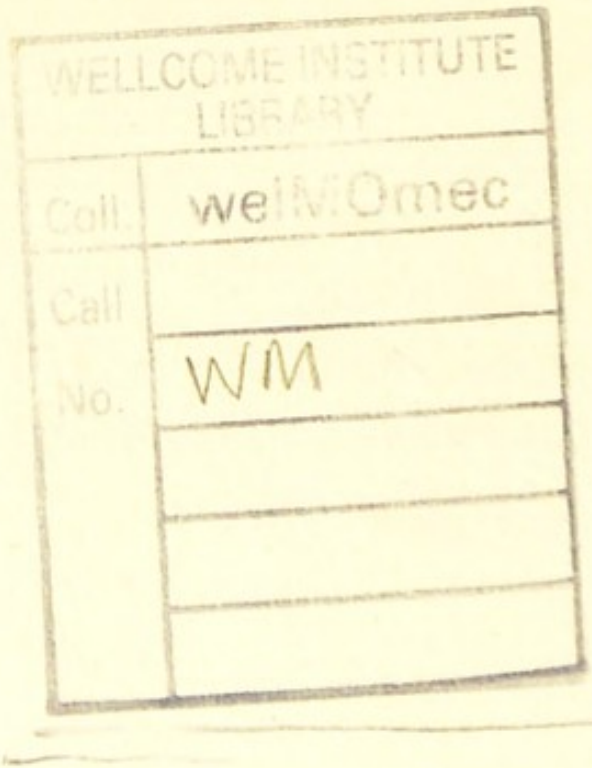

INTRODUCTION

THE following pages have been written by Mr. A. Bickmore, who for the past ten years has been Craftsmaster and Clerk of the Works at Darenth Industrial Colony, an institution for feeble-minded and imbecile patients of all ages.

During these ten years the Colony, which started in a small way, has increased to the large dimensions described in the book. Thus Mr. Bickmore has had an experience in the development of industrial work and in the methods of training the mentally deficient which I venture to say has fallen to the lot of few others in any part of the world.

His object in writing the book is to give to others as far as possible the benefit of his experience, and to assist trainers in the various methods of teaching which are practised.

The book in some parts enters into technical details, which probably will only be understood by teachers skilled in the various trades, but, taken as a whole, it should appeal to everyone who is interested in the training of the feeble-minded.

A. ROTHERHAM,

Medical Superintendent.

October, 1913.

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FOREWORD

At the present time, when the care and control of the mentally defective are so prominently before the public eye, I venture to place before those who are likely to have the care and teaching of these people my experience of fourteen years' close connection with this class of patient, and also of eighteen years' association and labour with the class from which the patients cared for by the Poor Law Authorities spring.

The passing of the Mental Deficiency Bill will no doubt prove the need of providing suitable employment for these people when they are gathered into the various homes

and institutions which will have to be provided for them.

In past years the members of the Metropolitan Asylums Board had been studying the question of employment for the feeble-minded and imbecile, and about ten years ago resolved to attempt to give the patients practical teaching in various trades and industries. The result is to be seen at Darenth Industrial Colony, Dartford, Kent, controlled by the Metropolitan Asylums Board, of which Institution Dr. A. Rotherham, M.A., M.B., B.C.Cantab., is the head. The Institution accommodates over 2000 patients, both feeble-minded and imbecile, and has been visited during the past nine years by people from all over the world, who have expressed themselves as being astounded at the cheerfulness and industry displayed by the patients who a few years ago were considered hopeless.

This great change has been brought about by sound common-sense methods adapted to the varying needs of the patients employed. It has been proved that to teach even the normal boy or girl to make articles which can be put to no real use is labour thrown

away. Much more so does this fact apply to the mentally afflicted. Therefore, in my opinion, it is useless to continue teaching kindergarten methods after the patients have reached twelve years of age, and these methods should be superseded by practical teaching in making articles which the patients see in every-day use for domestic or other purposes.

My experience is that a boy or girl learns more from the age of twelve to sixteen years than he or she is likely to do after that age, when matters other than work begin to occupy their attention. Thoroughly interest them in their early years and they are not nearly so likely to generate the vicious habits which are peculiar to these people after reaching a later age. It will no doubt be found that a large number of the people who are likely to come under control are they who, when asked what work they have previously done, answer, " Helped at home." This is a difficult class of patient to deal with. They have generally led dull, purposeless lives with very little to interest them or occupy their minds, for the feeble-minded, in games or amusements, as in industries, have no

initiative, and they are usually kept at home until they get beyond control or are dangerous to others, and an age has been reached when it is very difficult for them to make a start in any industry.

A Short History of Darenth Industrial Colony.

The growth of our Colony from small beginnings has been a remarkable work. In commencing the industries use was made of any odd rooms available in the basements, and the shifts that were made in the way of equipment so as not to involve any outlay until we had justified ourselves were many and curious. One instance stands out prominently in my memory. We had just commenced brush-making, and the material we had purchased did not, I suppose, exceed in value five pounds. To commence the pan or set work, that is, inserting the bristle into the stock or woodwork with pitch, we rigged up an old meat-tin supported on two bricks upon a rough bench, and carried a rubber tube with a Bunsen burner attached from the nearest gas-bracket to the underside of the meat-tin

and so made a pan-bench and set our first broom. From such small beginnings did our brush-making industry spring. In the first year (1905) the number of brooms and brushes made was about seven hundred, in 1912 our output was thirty thousand five hundred (30,500), and we keep a stock of brush-making material valued at £900.

In the case of all the other industries now carried on a start was made under similar disadvantages. On the female side of the Colony a nurse was taught by the male instructor the wire-drawn branch of brush-making. She soon became competent to teach two of the female patients, who in their turn helped to teach others. There are now thirty girls continually employed in this branch of the trade.

These girls also do the trepanned drawn brush work, for which their fingers are better adapted than are those of the boys, the material used being very fine, and drawn into the stock with silk thread.

The same method was used for starting the bookbinding trade. A nurse was taught a branch of the trade, viz. sewing, also envelope, label, paper-bag and cardboard-

box making. Thirty-three girls are now continually employed in this industry.

Further work being required on the female side, it was decided to open a branch of the upholstering, so here, again, a nurse was taught mattress-making and upholstering, and she in turn now teaches seventeen girls, some of whom are making splendid progress.

In a year or two, owing to the crowded state of the odd rooms used as male workshops, and on account of the progress the patients were making in their various trades, it was decided that we were justified in asking for improved quarters. The Managers therefore decided to erect male workshops at a cost of £3000. After these shops were built the necessary equipment was made and fixed by patients. These shops, in turn are now found to be greatly overcrowded, and an extension will shortly be in hand which will give ample room for some time to come.

The question then arose as to permanent shops for female patients, as the odd rooms in use were rapidly becoming crowded and in other ways inconvenient for our growing needs. To meet our requirements the Managers

decided to erect workrooms for females at a cost of £6000.

These shops are perfect in every way for the purpose for which they are required. They consist of two large rooms for new needlework, with accommodation for 200 patients, and a needle-room for repairs, seating 120 patients, besides rooms for brush-making, bookbinding and mattress-making. The shops are covered with a weaver's roof with north-lights, and the windows are high up at the sides, so that the patients' attention is not taken from their work. The floors are wax polished, and the whole is heated by a system of hot-water pipes. All parts are easily accessible for cleaning, and the temperature of the shops is at all times perfect owing to the sound system of ventilation.

These shops in their turn are already becoming overcrowded, and further room will be necessary in the near future.

In the adult shops 830 patients are employed (male and female). In 1912, 109,580 articles were made, and 90,096 articles were repaired.

The value of the above work was £11,992 16*s.* 3*d.* Apart from goods consigned by

rail, 130 motor van loads of goods, the weight of which was about 300 tons, were conveyed to our Central Stores in London for distribution to our various institutions.

The number of articles given above does not include printing, box-making, paper-bag making, envelope making, or wood bundling. The whole of these goods are consumed in the Metropolitan Asylums Board's own institutions.

Advice to those commencing Industries.

One of the chief points to be considered in commencing industries for the feeble-minded is the difficulty of finding a market for the output. If you make commercial articles such as brooms, baskets, tinware, fibre mats, etc., they must be of the best quality if they are to be acceptable to the accounting officer of another institution, and this is where the difficulties begin.

In commencing these trades you are bound at the start to have articles turned out which are ill made, and, although quite suitable for the purpose for which they are produced, would not on account of this defect appeal

to a possible consumer. This will involve a serious loss unless you can make use of the goods yourselves in your own institutions. We have been fortunate at Darenth in this respect, the Metropolitan Asylums Board controlling nearly sixty institutions, all of which are large consumers of the goods turned out.

Before commencing an industry it is essential to find out if there will be a demand for the goods when made, and whether materials can be purchased with which to do the work. As an example :

If bookbinding is carried on, the printed matter for wages, bedding, clothing, requirement and other quarterly books must be supplied. Manuscript and "please supply" books are always in demand ; but in time it will be found that more work will be produced that can be consumed, and as the prices for these goods are cut very fine the question arises, can these goods be transferred to consumers at a remunerative price ?

With regard to fancy work, you are in a better position for disposing of the goods, and fancy baskets, wool rugs, collar, glove and handkerchief boxes and fancy articles

made in the brush, bookbinders' and carpenters' shops find a ready sale at bazaars, etc.

If expense is no hindrance, then every class of trade can be attempted ; but if, as at Darenth, a strict profit and loss account is kept and a strictly business basis laid down, one would certainly hesitate before undertaking trades in which a considerable amount of money can easily be wasted.

It is the business footing upon which we work which has been such a great help to us in building up our working colony at Darenth. Given good conscientious trainers and a market for the goods, the change, bustle and business-like methods of packing and despatching the goods will be found to appeal to the patients and to encourage them to take a great interest in their work. Let the boys and girls know what orders are in hand, where the goods are going to, when they are required, and the need of despatching them in good condition. Also let them see the unpleasantness of having articles returned as unsatisfactory. Many of the patients are quite as keen as the trainers themselves, and the interest they take in getting goods ready to date, loading into the vans and sending

them away in sound condition is remarkable. Now I have said a good deal of the difficulties of commencing these industries, and that they are many is only too true ; but apart from the financial aspect of the case there is a good deal to be said in favour of labour colonies for teaching the feeble-minded or imbeciles. Those who know what people of this class are can testify to the pleasure which a finished article produced for the first time gives them. To the feeble-minded patient it is an object-lesson that he is of some use in the world. It instils hope and encourages further effort. At Darenth, I am glad to say, the patient has to be very bad indeed before failure is written against him or her. In some cases quite two years have elapsed before a patient has made any attempt to work, and yet this patient ultimately has turned out to be a very useful worker.

Never mind how small the part a patient may take in an industry, let him be encouraged to think he is doing the most important part and then he will surely make good progress. Encouragement is most necessary, and continual attention and practical illustration must be given by the teacher or instructor.

No matter how well the patient does the work, always let him understand that it can be done still better. I am afraid many a trainer talks over the patients' heads. He should not expect to bring the patients up to his own level, but should come down to that of the patients. He should teach the patient that the industry he is engaged on is all-important, that it is good for him to be busily employed, and send him to bed with a healthy tiredness. He is thus doing the patient the greatest possible kindness and is elevating him to the greatest possible extent, knowing as we all do the evil habits into which the feeble-minded fall if their time is not fully occupied.

Another important point is to gain the confidence of your patients. In the event of difficulties occurring in their work they will then not be afraid to approach you. Otherwise, instead of letting you see their mistakes they will hide them. Rectification is then difficult and will result in a waste of valuable material.

It may be asked whether it is better to teach the feeble-minded a trade throughout or a branch of a trade only.

If you are going to undertake work to any great extent and you have a good supply of patients to fill your shops, I should recommend a branch only. By doing so you will make your shop a going concern much more quickly than by trying to teach the patients the whole of a trade, for with the majority of the boys and girls their minds become quite confused if you try to cram them, so for the greater number of your patients a branch only with as much variety as possible in that branch is better.

In a very short time, by watching your patients it is easy to discover the boy or girl who is going to be generally useful. In order to single out the patients who are making progress this rule may be relaxed a little and the patients may be allowed to attempt some other work. The boy or girl who takes any interest in the work will readily attempt some other branch, proving that he or she has the imitative faculty well developed. The lower type of patient will not on his own initiative try to do any other work than he has been accustomed to.

Tactful treatment of the feeble-minded is one of the most valuable assets for the teacher,

while firmness, kindness and appreciation of their attempts, no matter how poor, are helpful, and act as an incentive to the patient to try and do better. In the shop a little freedom must be allowed, and talking should be encouraged (provided it is about the work) rather than discouraged. It gives the patient the opportunity to criticise the work of others, and helps to remedy defects. Instructors will do well to take note of this fact.

When starting fresh patients it is a good plan to place a boy or girl conversant with the work beside the new-comer. They can then be left alone and a certain amount of confidence placed in the older patient to teach the younger the initial steps of the trade, while you can from time to time tactfully supervise the whole.

Changes and variety of any sort are necessary with these people, and it is advisable to change the class of article the patient is making from time to time. The patients making scrubbing-brushes should be allowed to make shoe-brushes—the same class of work, but a change in material and shape.

Waste is one of the difficulties to contend

with, and the patients should not be allowed easy access to the material, although in time they may be entrusted to handle it freely. With beginners it is necessary that all droppings and cuttings should be used before other materials are issued. This will encourage the patients to make less waste, and they will soon learn that it is much easier to use material first hand than in a crippled state.

One of the chief objections which people raise to starting some of the industries is the fact that formidable tools are required. Now in my opinion it is a great mistake to speak of danger or sharp tools, or to make a fuss in any way concerning these things before patients. Take the tools into the shop, commence to use them in the way they are intended to be used, and say nothing concerning danger, and very little trouble will result.

It will be found that a large amount of the trainer's time is likely to be taken up in grinding, sharpening, or setting tools, which otherwise will have to be sent away to be done ; consequently it is sound policy to allow the patients to attempt the work for them-

selves, even at the expense of a dozen or so plane irons or chisels which they will probably grind away while learning. The help which success in sharpening the tools means to trainers is very great, as it is obvious that the patients, while learning to use the tools, are not very particular to a nail or two or what obstacle they cut through. A great mistake often committed by the trainer who is new to this work is to encourage the patients in their work with small gifts. As the patients have not the power to reason any matter out they at once assume that any small gift to them will be repeated whenever they are given a job to do, and often when they fail to receive it they will sulk sometimes for days, and are quite likely to spoil the work upon which they are engaged. See that the patient receives what he is justly entitled to, but make no presents. I have known a patient to be given a small present on his birthday and promptly appear once a month or in less time with another birthday, hoping for the gift to be repeated, and sulk badly when he finds his request refused. The trainer will save himself a good deal of unpleasantness by strictly following the above advice.

It is an accepted fact that the feeble-minded and imbecile do not combine sufficiently to plan either fun or mischief, yet an instance of combination for good occurred in our basket-making shop at one time. We were, at the invitation of the Local Government Board, exhibiting in the Educational Section of the Franco-British Exhibition. It was necessary, owing to the variety of the exhibits and to the interest which was taken by the public in our work, to have a man in daily attendance. For this purpose our basket-maker trainer was chosen, and consequently the shop was left for six months without the trainer. It might have seemed best to close the shop. This was not done, but the shop was opened as usual with an ordinary ward attendant in charge. Very seldom the same man was in charge two days together, and yet the patients actually made larger baskets than they had ever made before, and also made and repaired a greater number of articles than they had done during the previous six months. It seemed that these lads, without any direct agreement between themselves, felt that they should do their best during their trainer's absence. The foregoing appears to me to be

an instance of combination for good among these people.

In a shop containing forty to fifty girls or boys it may well be imagined that a trainer has a very busy time in carrying out his own work, supervising the work of the patients, and attending to each and every patient according to his or her temperament. The method of dealing with two patients is seldom alike.

In one case it may be necessary to bestow praise, and in another to be very chary of praising. One patient will work in fits and starts. Let him do so. He would, no doubt, promptly sulk if closer application to his work was expected of him. Deaf and dumb patients are full of suspicion; others want approval of their work again and again. Holding up the thumb is sufficient to encourage them. They understand the meaning of this; it is little trouble, and no greater praise is required.

Some patients sulk because they have not heard from their friends. Others are always wanting letters to be written to their friends, with a list of many and varied requirements. In addition, some patients are always ready to quarrel.

The above facts give a fair idea of the tact and firmness required by a trainer to carry him successfully through the day, for after all the patients are only children and must be treated as such.

Mixed Grades in Workshops.

When deciding which patients should be sent to the various shops, it should be borne in mind that when any industry is in full swing there is much dull and irksome work to be done, as well as more interesting and more advanced work. Now it will be very disheartening for bright and fairly intelligent patients to be kept continually doing irksome work such as in the joiner's shop, ripping down timber, planing rough boards, etc., which is work that quite dull lads are capable of undertaking. Yet this work has to be done. So in picking the numbers to fill any shop, it is necessary to chose some of the brighter patients to be taught the more skilled work, and also a certain number of less intelligent patients to do the dull, uninteresting labour. Having a mixture of grades in every shop makes for success in

another way. It causes rivalry amongst the patients themselves. Those who are continually employed in preparing work for their brighter and more lucky fellow patients, after a time, wish to be promoted in the work they are doing, therefore they will always be on the lookout to try their hand at more advanced work. This will ultimately tend to improve their work all round. Brighter patients, too, seeing their juniors beginning to usurp their places, will strive with all their might to maintain their position of superiority, and consequently will be most thorough in all they do.

The Training Staff.

Few of those who have the opportunity of seeing the patients at their work realise the care, thought, and self-control required by those who have to teach the mentally deficient, if the teaching is to be done in a thorough aud conscientious manner.

The beginner finds his task a great strain on his self-control. The apparent hopelessness of it all leads him to under-rate his own capabilities, and he is inclined to give up the

undertaking before the result of his teaching is seen.

Those in authority over the trainers should, therefore, extend to them in their work the same help and sympathy which the trainers are expected to give to those placed under their charge. If this is done it encourages the trainers to stick to their posts and to make fresh efforts with their pupils.

Constant changes in the training staff are bad both for the industry and the patients.

No two trainers' methods are alike.

Changes generally entail making a new start in any industry.

The following will perhaps be of interest to those who have the well-being of the mentally deficient in their minds :

There are undoubtedly in our London workhouses a great number of mentally afflicted or feeble-minded people who would be better if under control in labour colonies.

My experience has shown that the treatment adapted for teaching the feeble-minded and imbeciles would also be the best treatment for many of the inmates of workhouses.

Consider the case of the ordinary able-bodied inmates of our workhouses.

The larger number of these are the casual and unskilled labourers who, from one cause or another, have drifted into the house.

After being interviewed by the House Committee, the task usually given to them is to break a certain quantity of stone, say 10 cwt., or to grind, say, 10 pecks of corn in a given time.

What is the result?

Outside the house they are probably men who, if they had employment, would do as little as they could for their money and seldom stick to a job long enough to harden their hands.

Faced with a compulsory task of 10 cwt. of stone to break, such a man has at least to make an attempt or be prosecuted for refusing to perform his allotted task.

In the event of a prosecution he is probably awarded seven days' imprisonment, which he finds compares very favourably with his workhouse life.

Upon returning to the workhouse, frequently the same day as he is discharged from prison, he is again given a similar task, but makes a poor attempt to perform it. He is again dealt with by the magistrate, and so

on until he finally disgusts the workhouse officials. Probably he has been told that this will ultimately occur.

Finally he is given a light task in the house and settles down to a fairly comfortable home.

Another type is the artisan, who, owing to drink, illness, or a combination of both, has come into the house.

He is probably given a week or so in which to recover and is then told he must go out.

This he does, but without any means in his pocket to carry him over a day or two.

Even if he had these means he would most likely drink them away. Upon his second entry into the house he is given a task of stone-breaking or corn-grinding similar to that given to the unskilled labourer ; this he promptly refuses to do, and when, as an alternative, he is given a job at his own trade, he again refuses unless he is paid for his work.

The larger number of the able-bodied inmates are of the foregoing types.

These men, allowed to drift ultimately, become habitual "in-and-outs," though well able to work if properly controlled.

If uncontrollable when out of the house they, either through lack of will-power, drink, gambling, or some other evil habit, will continue to drift to the workhouse.

Now, after two or three years of this life I consider that these men are irreclaimable.

If they are to be a burden on the rates for the rest of their lives, would it not be better to employ them at more remunerative labour than breaking stones or grinding corn ?

To carry out the above suggestion it would be necessary to appoint a man with a sound industrial training, able to teach many handicrafts and to supervise the work.

Here we get a further point of similarity between these people and the mentally deficient.

A man who can issue an order, and also, if necessary, help to carry it out, will always command the respect of the feeble-minded and of such workhouse inmates.

Tact is one of the most useful factors in dealing with both, and unless a man is firm, tactful, confident, and, above all, sympathetic, he is useless in getting work out of these types.

All the talking in the world will not be of any avail, yet tactful encouragement will do

more in one week than rougher methods will do in ten years.

The method of dealing with each individual case varies, and only long experience will show the appropriate method to be adopted.

The skilful workmanship of the teacher, and the correct method of dealing with the individual, are absolutely necessary to ensure success.

From these remarks I think it can be seen that the problem of retaining and usefully employing these workhouse types is well worth studying.

The dividing line between the habitual inmate of the workhouse and the feeble-minded is a very narrow one. Since I have been connected with asylums I have met three former able-bodied inmates as patients, and it is not rare to find relatives of others who are of the same class.

Conclusion.

I have written upon this subject because I am personally deeply interested in the welfare of these people. My thirty-two years' experience of the working classes has taught me that sentiment enters largely into their lives.

If they realise that their mentally afflicted children will be sympathetically cared for in institutions and taught industries which will provide employment for their hands and exercise for their minds, they will not be, as now so often occurs, opposed to their children being placed under control.

Such boys and girls will, under this system, lead happier and healthier lives than formerly, and cease to be a menace to those around them.

In the ten years I have been at Darenth Industrial Colony I have seen a remarkable change for the better in the boys and girls resident in this institution.

The discipline and method with which the administration of the institution is carried on has undoubtedly produced this improvement.

On admission many of the inmates appeared to be hopeless subjects for a colony, yet I have seen these same boys and girls grow up wonderfully strengthened in body and in mind, and although they are not fitted to enter the industrial ranks outside the institution, yet they have been taught that they are of some use in their own small world, even if that be only an Industrial Colony.

TRADES TAUGHT AT DARENTH

THE trades taught at Darenth Industrial Colony are: Carpentering, bookbinding (including cardboard-box, envelope- and paper-bag-making), brush-making, basket-making, shoe-making, mat-making (hand and loom), woolrug-making, tinware and metal-plate work, tailoring, upholstering, printing, needlework, stocking and linen-weaving, painting and decorating, building and outdoor work, wood-chopping and bundling, and also a number of side branches to the trades mentioned above.

Physical drill is used to improve the physique of the patients capable of benefiting thereby in the evening after work, and has undoubtedly proved to be helpful in forming disciplined habits which are essential for their work.

Taking the trades in the above order, I will endeavour to place before the teachers

the chief points to be studied in commencing the various industries, and would also like to point out how helpful it will be found if the patients are allowed to assist in fitting up the shop in which it is intended they shall be employed. Their interest is stimulated and the cost of labour is considerably reduced.

Carpenter's Shop.

This industry appeals to every boy, and it is one of the most useful to teach them. If a ready market can be found for the articles made it is also possible to make the industry profitable. Fancy articles are no longer made at Darenth, those of real utility only being produced. Some of the boys who were first taught the trade at Darenth are now employed in making walnut and mahogany writing tables, ward tables in oak, birch, or bass, up to nine feet long, cot tables, and heavy furniture of nearly every description. Some boys are competent to set out their own work. Panelled doors, window-frames and sashes are also made. These results have been attained in less than seven years. When this industry was started seven years

ago there was not a boy capable of telling how many inches there are in a foot. But it appears to be a class of work above all others for brightening and quickening a lad's intelligence.

It is much better, if possible, to have a number of the same articles to make, as the working out of a new design too often worries the boys very much, but, once started, they will imitate the first article in a satisfactory manner.

The making of benches and such-like work appears to be the most suitable on which to start, and gives the patient an insight into the use of the hammer and saw. The cutting up of timber and driving in of nails appears to the patients as being a mild and pleasant form of exercise, but as they see the various articles being gradually completed they realise the possibility of doing better work.

A morticing machine and turning lathe are required in this department.

In teaching the trade I should like to lay stress on the need of employing, if possible, a thoroughly competent instructor, who will himself work as well as teach those under his care. It is only by practical illustration

that this trade can be taught ; and, moreover, the boys appreciate an instructor who is able himself to use the tools in a workmanlike manner. This remark applies generally to instructors in all trades and industries.

With regard to the patients engaged in this industry, it will be found that after some years they have improved physically, and also, to a certain extent, mentally.

In this industry the trainer generally uses his own set of tools, and the tools necessary for the patients will be best chosen by the trainer. The tools should be of the very best quality. The equipment other than tools are : benches fitted with Climax bench-vices, a good morticing machine with full set of self-coring chisels, and with a drilling attachment, a good quality fine-cut grind-stone, and a supply of fine and coarse Indian oilstones. The timber used for joinery work should be of the best. It is impossible to execute sound work if unseasoned timber is used. To guard against this, it is policy to erect a sheltered timber store and to lay in a fair supply of selected hard woods of various kinds, which should be replenished as the stock is drawn from. For turning wood-

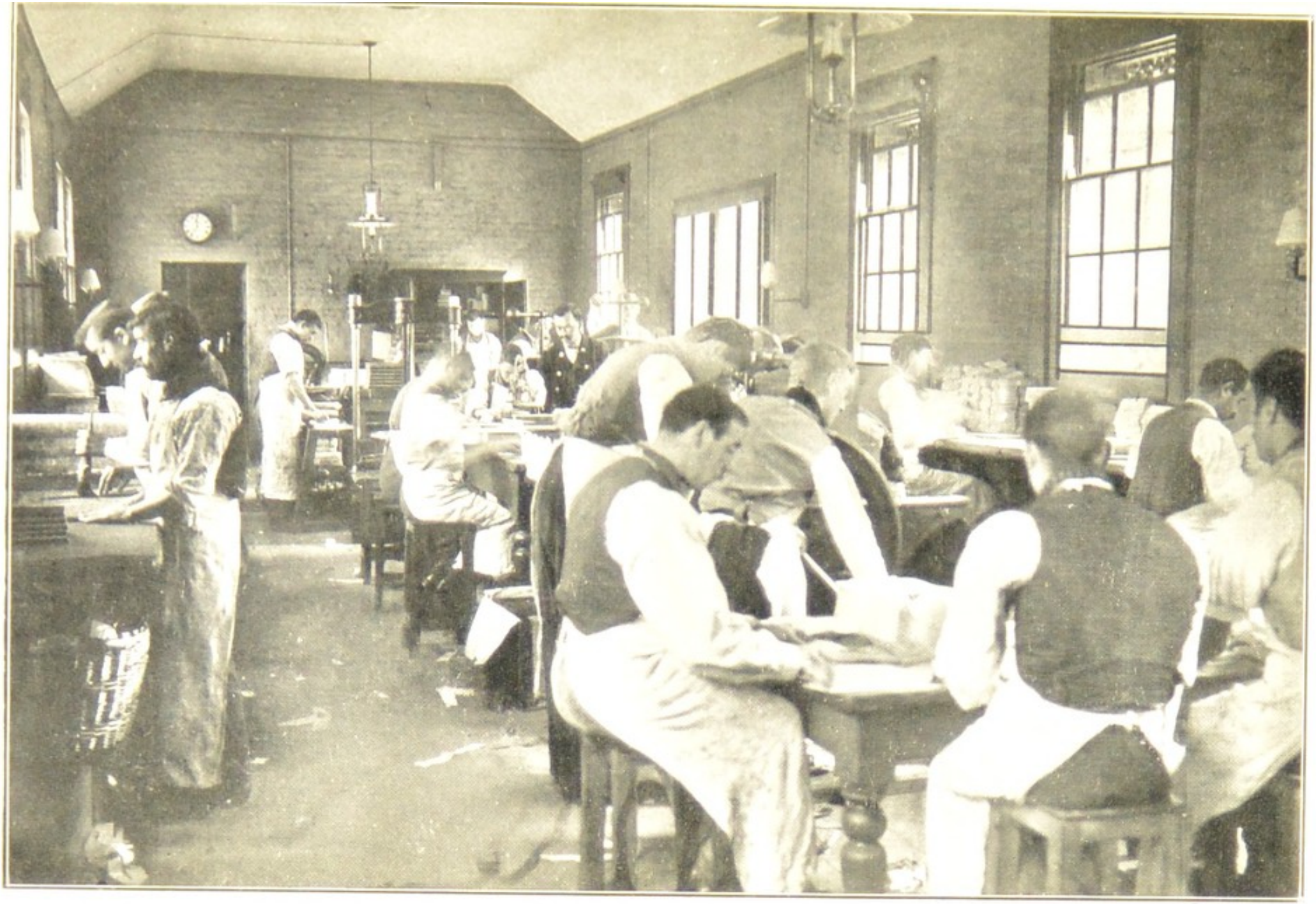

Photo. by T. Neasly.

POOR IN DINING

work a small treadle lathe can be purchased for a few pounds, which will be found quite suitable for light work, but heavy goods, such as table legs, can be purchased already turned.

If power is obtainable for the lathe, then table legs and similar heavy work can be done. The lathe will then also be useful for the tinsmith to use for turning or spinning up saucepan and tea-can lids. Lids worked in this way are a great improvement on those shaped on the hollowing block.

Bookbinding, Envelope and Box-making.

This industry is suitable for both male and female patients. The work offers a large range, from the penny note-book to the commercial ledger.

It is well for the trainer to remember that the difference in cost between "shoddy" and good work is so small that the greatest supervision is necessary.

In an institution, manuscript books are always being used. This is the class of work with which to commence. If small note-books, one- or two-quire foolscap books

(quarter-bound, marble sides and cut flush) are made, a finished article will be turned out in a very short time. This encourages the pupils. Later on, full cloth, limp or stiff covers can be tried, and so on to half-bound or full-bound leather work. There are several methods of sewing, and the trainer will no doubt teach that with which he is most conversant. If sewing presses are used it is advisable to make uprights adjustable to a fixed bench. A whole range can be provided in this way, and when not in use they can be dismantled and the bench used for other purposes.

As the patients progress they will make very little use of the press, but will prefer other methods of sewing.

One of the most difficult branches of this industry is the binding up of printed matter. Very great care must be exercised in stripping the work that the sections are placed in proper order, as an error afterwards discovered entails the entire re-stripping of the book and frequently renders it unfit for re-binding. The variety of colour in papers, cloths and leathers appeals to the patients, and they soon see the need of cleanliness to keep

Photo. by T. Neasly. CARPENTER'S SHOP. *Face page 32.*

their work in good condition. Dirt is a great enemy to the bookbinder, consequently every help should be given to the patients in taking care of their work.

The lettering and tooling on the backs and covers of the books is a very advanced branch of the work and one which requires much practice to become efficient in, but the finished appearance which these processes give to the book makes it worth while devoting considerable attention to them.

Gold blocking is an interesting work and can be taught to the brightest boys. They must be able to read. When lettering books which are likely to have a short life, such as report, wages, and other half-yearly books, gold foil may be used, but for books which are intended to last, gold leaf is certainly best.

The marbling to the edges of various books may be done with transfer marble paper. Other smaller work is stippled or splattered. This requires very careful handling, but it helps to provide variety in the shop.

Strict regard to economical use of material must be practised in a binder's shop, otherwise waste results and expenses run up. The

skins and cloths are very costly and should always be cut up to the best advantage.

Offcuts of leather and cloths can be utilised for fancy work, such as blotting-pads, photo frames, fancy boxes, etc., including hoods for feather dusting brushes, which can be made in the brushmaker's shop.

The chief tools required in a binder's shop are an efficient guillotine with 2 ft. 6 in. to 3 ft. knife, a couple of standing presses, a gold blocking press with necessary brass type and rules, a backing press, two or three large glue-pots and the usual knives, scissors, bone-folders and other sundries.

Envelope-making by simple methods is a very useful industry for boys and girls who are weakly.

The chief tools required are a strong envelope-cutting press, and a series of knives or punches of the shape which is likely to be used. Sheet-lead is the best material upon which to cut. The only other tools required are small camel-hair brushes, bone-folders, and small circular tins to hold the gum used by each patient.

Dextrine is the most suitable material for gumming. The paper is purchased by weight

and may be obtained in any size, cut square, oblong, or angle, the last for commercial envelopes.

The size of the paper depends upon how many envelopes of the required pattern can be cut out of a sheet.

Waste cuttings can be sold for a few shillings per hundredweight.

It will be found that if brooms, banister and shoe brushes are made in any great number, and are likely to remain in stock for any length of time, it will be best to box them up for two reasons: (1) to protect them from moth (which is very destructive to certain kinds of bristle); (2) to prevent the bristles becoming crippled (which is sure to happen if the goods are carelessly stored). Boxes suitable for this purpose can be made from strawboard, size 25 in. by 30 in. and 16 oz. to the board. One hundredweight of strawboard will cut into sufficient pieces to make 448 broom boxes, which will cost, including paste and paper, or mull for the corners, about sixpence per dozen.

The only tools required are a hardwood scoring board fitted with movable gauge (the cutting side of the gauge should be

lined with brass), a short sharp knife, a pair of scissors, and a paste brush. Poor class patients can easily make boxes of this kind after a little practice.

The protection given to the goods mentioned above quite justifies the make and use of boxes of this description.

Brush-making.

This is a very interesting industry both for boys and girls. The variety of articles which can be made is very great. In the first place it is essential that a skilled craftsman be engaged to teach the patients and to supervise their work. This industry may be divided into three branches: Wire-drawn, where the bristle, bass or fibre is drawn into the stock with wire; set or pan work, where the bristle or bass is set into the stock with pitch; finishing, which consists of glueing on the back and shaping the article. French polishing is also included in the latter branch. Set work requires most careful supervision by the trainer, as the material used in this work is very costly, some of the bristle costing as much as £35 per cwt. The bristle should

be purchased ready dressed and even size and not as imported, as with the latter more short bristle is likely to accumulate than can be used, and consequently a loss results.

In set work it is important that the patient be taught to knock the bristle or bass down thoroughly and also to fan it with the thumb before dipping the knot into the pitch before tying. The hemp which is used for tying must be pulled very tight, as otherwise the centre of the knot drops out, and a bad broom results.

Care should also be taken that the hemps used are not of too coarse a quality and not too long.

The pitch should be obtained from the best makers. Soft as well as medium pitch should be stocked. This allows the trainer to humour his pans to suit the work in hand.

Care must also be taken with the Bunsen burners under the pans. They must be carefully adjusted so as to allow an even temperature, as overheated pitch becomes brittle when cold and is inclined to powder out after the broom or brush has been in use a short time.

The flirting or whisking of a broom before

trimming is an important matter, as any appearance of bristle falling out when the broom is taken into use gives a bad impression to the user. This whisking also prevents waste of material, as the droppings can be re-dressed and used over again. To properly flirt a broom or brush before being put into use the article should be held over a box when the loose bristle is being knocked out.

Bristle dressing and mixing is one of the most important branches of brush-making and well worth teaching.

As an instance, soon after we commenced brushmaking at Darenth a bristle-dresser at 30*s.* per week had to be employed for quite twelve weeks in a year to dress up our waste bristle and bass. This work is now done entirely by the patients. This method has effected a great saving, especially as our output has increased very largely.

The pan-benches should be made to seat six persons, as by so doing the pitch is used up more quickly and the supply in the pan is kept fresh and not so likely to burn.

The following points are worth noting in connection with pan work :

The pan should be heated up by the time

the patients come into the shop and they must be watched when first lighted to see that they do not boil over. A wet sack and some sand should be kept at hand in case of an accident occurring, but this is not likely if the trainer is thoroughly conversant with his work.

In teaching the wire-drawn work it is policy for learners to use cocoa-fibre or white Mexican fibre, as these materials are cheap and do not involve a great loss when wasted. As the patients make progress they may use bassine and Bahia union. This material makes up into a very useful scrubbing-brush, although pure bass or monkey bass should be used if the best quality article is required. I would advise brass union wire being used at all times for any brush or broom which is likely to be used in water, especially those which are required to last a long time. Iron wire quickly rusts and the knots rub out.

Boards and stocks of all kinds can be purchased already bored, but when possible it is policy to purchase unbored stocks and boards. With a treadle boring-lathe these can be pierced. By doing this an addition to the industry is effected.

The shaping of the brush is an important work, and a very unwieldy instrument called a bench knife is used for this purpose. A good deal of practice is necessary to become proficient in the use of this tool. The bench to which the knife is fixed should be stoutly made and well fastened to the floor, as the strain on the bench is very great. The top should be of oak quite 4 in. thick, and the part upon which the knife cuts should be made to screw on in the form of a block so that when one side is worn the block can be reversed, otherwise the whole top of the bench will have to be renewed.

The remaining tools necessary in the drawn and finishing work branch are as follows: In finishing, 30 lb. parallel bench vices for drawing, a number of 7 lb. parallel bench vices, spokeshaves with 2 in. and 4 in. irons, good quality screw-drivers, a bass and fibre-cutting knife and gauge, bench and hand shears, a couple of large size glue-pots and a gross or two of glueing screws, which are used for fixing the back on the brush and holding it there until it is quite dry. As four of these screws are needed for each pair of brushes a large number will be required.

Brush-making is recommended for beginners. The variety of brushes is so great and so many small jobs can be found for learners that they can be given jobs right away, such as glass-papering, tacking and branding, and whilst doing these jobs they are able to watch the more advanced branches. Although it may not be perceptible, they are gathering knowledge, and it is often found that a lad has a very fair insight into the work when he is given the opportunity to try his hand at more advanced lessons.

The girls are more economical than boys at drawn work, especially at the lighter work, such as hair-brushes. Their fingers become very sensitive, and they are able to judge the quantity of bristle required with hardly any trace of waste.

The polishing of the brushes is a very important part of the finishing, and unless this is properly done, no matter how good the material is, the brush does not look a first-class article.

Absolute method is necessary in the daily work of a brush-making shop. By noon each day a supply of wire-drawn brushes should be ready for the boys working at the glueing

bench, as otherwise these boys will have nothing to do during the afternoon.

After the backs are glued and clamped on to the brushes they should be carefully stacked away ready for unclamping as soon as work begins next morning.

The brushes glued up overnight form the work for the finishers next day. By this means everybody is kept employed.

One pair of large bench shears should be fitted up for each bench of six boys, who should be taught to do their own trimming. This is quite possible if an adjustable cutting gauge is fixed upon the shears, the gauge, of course, being set to length by the trainer. But even the adjustment of the gauge the patients will learn in time.

Basket-making.

This is very interesting work for boys. It is divided into two classes, *i. e.* fancy and commercial.

The fancy work is much the best for beginners. The material is lighter and more flexible than that of commercial work and can be used over again if the work has

to be pulled to pieces, whereas for the heavier baskets the material is spoiled once it is used. The methods of weaving fancy baskets give the patients a good idea of the weaving necessary in the commercial branch.

In the heavier work, laundry or oval-shaped baskets are the best suited for beginners. The building up of square corners to a basket or any work entailing fine lines needs a good deal of practice, and I would advise trainers to avoid this class of work until progress has been made in weaving less important baskets. A good deal of floor space is necessary in a basket shop as otherwise there will be no room for fixing the side stakes in the slarth or bottom of the basket, which with the stakes sometimes extends to twelve or fourteen feet, before the upset is made.

The manufacture of buff wicker, glossy, and flat cane chairs form an interesting addition to the basket-making, but these chairs form a much more advanced branch.

Cane-seat weaving is good practice for smaller lads, and exercises their minds.

A strong iron tank at least 9 ft. by 3 ft. by 3 ft. is necessary for soaking the rods.

The water-supply tap should be at one end of the tank and the waste or emptying outlet at the other. To the waste plug a strong ring or chain should be attached as it is necessary to change the water at least twice a week, otherwise it becomes fœtid. On each occasion the tank should be scrubbed out.

It is advisable to use English rods or osiers if obtainable, as they are by far the best, but of late it has been very difficult to obtain these. Fortunately, African as well as Belgian and French rods can now be obtained. The African rods are of very good quality though rather more wasteful owing to their length.

Straw plait, plaited rush, and enamelled cane in many colours can also be bought and add greatly to the variety of the work. The equipment used in basket-making is not costly, and consists for each boy of a strong match-boarded slope about 6 ft. by 1 ft. 9 in. with a back rest attached and a small slope 3 ft. by 1 ft. 9 in. Best quality 8 in. and 10 in. shears with spring attachment, picking knife, shop knife, bodkin, iron beater, mallet, tenon saw, and a few other sundries are also

required. The boys need strong fingers and wrists for the heavy work, and until they develop these the work is very tiring. Picking and trimming the basket requires much practice.

The method of using basket-makers' knives is dangerous and great care should be exercised.

Always remember that bad rods or osiers will discourage a beginner in an industry which presents difficulties enough already.

Galvanised iron fittings of all kinds, including bolts, nuts, and washers, can be obtained for the use of basket-makers. Black iron should never be used owing to the rust.

It will be found that a considerable quantity of work can be done for the basket shop by the patients in the carpenter's shop, such as wood frames for fancy chairs, bottoms for fancy baskets, and basket battens of all kinds. For the latter it will be found that odds and ends of timber, of no further use in the carpenter's shop, can be used. Generally it will be found that the offcuts from one industry will work in for another.

If a profit and loss account is kept a small adjustment can be made at the end of the

half year between the various industries, a note being made at the time of transfer by the trainer.

It is necessary that the basket-maker trainer be at his shop early in the morning to soak the rods in the tank ready for the day's work, otherwise great delay is experienced in getting to work when the patients arrive.

Shoe-making and Repairing.

This trade is usually taught in an institution, and in all cases the results have proved it to be a satisfactory one. At Darenth the work is carried out on a large scale. A high class of boot is not aimed at, but rather one for general utility and wearing qualities. Boots suitable both for male and female patients are made.

Formerly rivetted boots were chiefly made, but a Blake's sewing machine has been purchased, and a considerable amount of work is now done with this machine. Some of the patients are able to control the machine themselves. Patients have been taught to use Singer's or Bradbury's closing machines

and have attained proficiency. Several of these machines are in use, and the patients are now able to do all patching and toe-capping, which is a very considerable undertaking in an institution containing 2000 inmates. Repairs from other institutions are also executed. The stripping and patching is the beginner's first work. There is, of course, the risk of spoiling the upper when cutting round the sole, and a considerable amount of teaching is necessary before a patient can be entrusted with this work.

At Darenth, on an average, 800 pairs of new boots are made and 13,000 pairs are repaired annually.

Fibre Mat Making.

This industry is well worth undertaking. The trade is most suitable for males, as the work is very hard and rough for the hands.

The work at first sight appears to be very simple, but this is misleading, as considerable skill is required, which can only be obtained by practice.

The equipment is simple, and can be made by any carpenter. It consists of a stout

frame and clamp made adjustable with bolts, plates and nuts, a hardwood slide, a hammer, and a strong pair of bent shears. A mat-maker's needle and palm are also required for sewing on the border.

The " stringing " of the frame is the first and most important part of the work, as the finish of the mat depends a good deal upon this. The strings must be absolutely tight before any attempt is made to build up the mat. In the " thrumming" or " building up" of the mats the patient is likely to use the hammer more than is necessary, with the result that some strings are broken. It is better, however, to err in this direction than to have a loose mat, as the strings can be repaired if broken. After some practice the hammer will be used in a proper manner, and a good mat will result. The great difficulty for beginners is to keep the correct measurements. If these are not kept a tendency to " spread " or " draw " will certainly be found. A part of the work which the girls can undertake is the plaiting for the bordering, but the sewing on of the plait is heavy work, and should be done by the boys. The same kind of plait can be used in making skeleton mats

Photo. by T. Neasly.

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and the curbs for scrubbing kneelers. The fibre kneelers are very useful in institutions where much scrubbing is done, as they are soft for the knees and the curb prevents the dress from getting wet. They can easily be dried when not in use.

In the shop at Darenth we make rope and fibre "fend-offs" for the River Ambulance Service. This is very intricate work for beginners, but our boys have mastered it.

Another useful branch is coal-sack making. The flax sacking is purchased in rolls of about eighty yards in length, and is dressed with hot Stockholm tar. It is then cut up into suitable lengths, and, when completed, a tin ticket stamped "1 cwt." or "2 cwts." is fixed on it.

Coloured and white mops also can be made. Brussels wool or yarn is used. The wool is carefully cut up and weighed to ensure a uniform size. It is then tied up in a certain manner and the 6-in. galvanised mop nail passed through the wool with a leather top and bottom. The mop is then shaken out and trimmed. Old machine belting and odd pieces of leather from the shoe-shop can be used for tops and bottoms, the pieces

being shaped with a 1½ in. circular leather punch.

All the offcuts of the wool up to a certain length are used for wool mats, and the short cuttings unsuitable for mats are put through the carding-machine and used in the upholsterer's shop for stuffing cushions and backs of wicker chairs.

Two four-quarter mat-making looms have recently been installed at Darenth and a really splendid mat is now being made. The 3 ft. by 2 ft. mats made on these looms equal, if not excel in appearance, the frame-made mat of the same size. They are more even in texture and yet are 3 lb. lighter.

Wool-bordered mats can also be made upon these looms. This is a more advanced stage of work which will be reached in time. When purchasing yarn, be sure to obtain the best for stringing. This quality of Ceylon fibre yarn is usually obtained in dholls, but the yarn for the body of the mat is in bales of about 300 lb. each and costs about 18*s.* per cwt.; the better class costs 25*s.* per cwt. Loose fibre for wool-bordered mats is purchased in "ballots," and is, of course, cheaper than the yarn.

Fibre yarns dyed in a variety of shades are obtainable at a little extra cost, and with these colours, designs, lettering and borders can be worked into the mats.

The waste fibre from mat-making is used by nurserymen in which to strike bulbs.

Wool-rug Making.

This is a very suitable occupation for feeble or weak patients, both male and female, but it is necessary that they should be able to count and also judge colours if they are to be taught to work out a design.

It is work that appeals to the boys and girls owing to the bright colours, and they take a delight in seeing a rug develop under their hands.

In working pattern or design rugs the pattern, worked out to scale one-half or quarter size, is given to the instructor and one quarter of the pattern is worked on the canvas. This is copied by the patients on the opposite corner, and the half when completed is copied on to the remaining portion. The filling in between the designs can then

be done by beginners. This is a very good exercise indeed for the mind.

From experience I find that rugs should be made very full. They should be trimmed fairly close so as to throw the design up better.

It is a strange fact that the girls are much better than the boys in sorting wool. Waste wool, as bought, is delivered in large rough knots, and a bundle may consist of twenty various shades ; but the boys are not able to distinguish the shades easily, and quickly get disheartened if they have much of this work to do. On the other hand, the boys will work out a design much better and quicker than the girls.

There is a large choice of wools on the market, but all are expensive. If waste wool is purchased one finds that quite 50 per cent. is unsuitable for use owing to the great variety of tints supplied in small quantities, and these are difficult to work in unless they can be used for coloured mops or small slip mats. Good quality bent shears are required for trimming the wool rugs. This work is very tiring and is best done by the boys.

Tin-smith.

This is a very interesting industry, but the boys must be carefully chosen for this work, as it is very trying. The noise and din are objectionable to beginners.

The preparation of patterns for the various articles of tinware is an intricate work, and requires the services of a first-class instructor, but once the patterns are prepared the boys will readily lay them on and cut out from the tin sheet to the best advantage.

It is very important to remember that it is much easier to cut from a large piece of tin than from a small piece, and if the boys have access to your stock they will quickly take a new sheet of tin to cut from, instead of using small offcuts which are just as suitable for their purpose.

The trainer should keep the stock under his own control and issue only what is actually required.

Small work, such as funnels, custard-, bread- and cake-tins, bedcard holders and dustpans, are the best articles to commence with.

Repairs in an institution provide plenty of work for tin-smiths, and this affords good

practice for the boys in the use of the soldering-iron—a very difficult tool to master. A badly soldered article is very unsightly.

It is also very necessary that the right gauge of tin-plate be used for the various articles. The trainer should give this matter strict attention.

The tools necessary for this work are fairly costly, and it is good policy to purchase the best quality.

The tin-plate is supplied by the box, except in the case of large sizes, which are supplied by weight. The size and gauge of the sheet required should be stated when ordering. Always order stock sizes when possible.

The results from this industry will prove very discouraging for the first year or two, but after this the patients will improve and good progress be made. Do not expect too much in the early stages.

The chief tools required are: Soldering irons, with foot-print handles; complete set of mallets; hammers—paning, creasing, hollowing, planishing, rivetting, square, round face; stakes—hatchet, funnel, extinguisher, half-moon, side, creasing, canister; tinman's horse and set of leads; bick iron; elm

hollowing block; square and straight edge; jenny; bending rollers, about 36 in.; folding machine; pliers (various); punches (solid, various sizes; hollow, various sizes); rivet sets (various sizes); compasses; 2-ft. steel rule; chisels; stock shears and snips; cast-iron mandrils; spout mandrils; strong leg vice; tinman's gas stove.

In addition to the above there are a number of tools and machines which a practical tin-smith will make up for himself at very little cost.

The replacement of tools is small except in the case of copper bits and hollow punches.

Metal plate and bent ironwork are useful additions to a tin-smith shop, and help to provide a variety of work for the patients. Useful articles, such as fire-screens, finger-plates, hearth curbs, crumb-trays, etc., in copper or brass, are easily made after a little practice.

For beginners it is best to work the design up from the face, and afterwards, as the patients make progress, the pitch-block may be introduced and more advanced work attempted. Complete outfits of tools for bent iron and *repoussé* work are obtainable at very reasonable prices.

Tailor's Shop.

This is a most useful industry, and, apart from the repairing, a most difficult one to learn.

It is improbable that a patient will ever make sufficient progress to become a cutter, but a good number of patients can make trousers and vests, and a few a suit throughout.

Canvas bags and bed sackings, jean and duck overalls and a lot of other small articles can be readily made, and all prove very useful in providing varied work for the patients.

Repairs provide the bulk of the work, and in any institution sufficient work of this kind can be found.

This trade is suitable for weakly lads and epileptics as there is no great danger of falling. Some boys have spent quite two years in this shop before they can do even small repairs. This is a very profitable and useful industry, and in one year 2788 new articles were made and 11,459 were repaired.

Upholstering, Mattress-making, etc.

The actual upholstering of a chair or couch is a most difficult and intricate undertaking,

and a considerable amount of teaching would be required before a boy would be competent to undertake this advanced branch of the trade. There is, however, a great amount of work in the shop with which patients can assist, and by doing so gain a good insight into the industry. Stripping of furniture to be re-upholstered teaches the proper use of the mallet and stripping chisel and also the use of the hands.

This portion of the work must be done well, as all nails and tacks have to be removed and care must be exercised so as not to split the wood.

The cleaning of the articles during re-stuffing can also be undertaken. The patients can also be employed to hand tools and material to the trainer, in "teasing" hair and wool ; and as they improve they can actually help in tacking on the gimp, studding the banding or sewing on cording, and, in fact, with all light work requiring patience and care.

In an institution mattresses and pillows constantly require re-making. This provides ample work in stripping mattresses and passing the hair through the carding-machine or "teasing" it by hand.

New mattresses can be made throughout by patients after a few months' teaching and proves very interesting work. Stuffed backs and cushions for upholstering wicker chairs made in the basket-shop may be prepared, but paper patterns should be cut to suit each chair, as it will be found that no two chairs are quite alike. The backs and cushions may be either sewn to the chair or tied on for easy removal.

Hassocks can easily be made, and if it is essential that a number be exact to size, the best method is to to make a box minus one end, the lid being hinged to one side. When closed, the lid should be secured with two cabin hooks and eyes.

The inside of the box should be the measurement of the outside of the hassock.

Place the cover inside the box, secure the lid, and fill tightly with stuffing.

Articles made in this manner are uniform and will retain their shape. I have described this method minutely, since it ensures turning out a good-shaped article.

Waterproof aprons for laundry work and waterproof bibs for epileptics may also be made in this department.

A good strong machine is necessary for machining ticks, which will also do for machining tapestry used in upholstering. Staining and French-polishing may also be taught in connection with this industry and forms a useful branch of the trade.

Printing.

"This is a great and intricate industry. . . . We are hoping in the near future to be able to reduce considerably our stationery bill by having, as a going concern, a printing industry of our own."

The above is an extract taken from a paper which I had the pleasure (at the invitation of Miss Kirby) of reading at Denison House, Vauxhall Bridge Road. At Darenth we were then hoping to fit up a shop for this industry, an undertaking which, as can be seen from what follows, is now an accomplished fact :

We have now in use in our printing shop three crown folio platen printing machines driven by power obtained from a 17 h.p. gas engine, which also drives the sawmill. In addition, there is one foolscap folio

machine, a guillotine, perforating and relief stamping machines, and a small stereo plant for casting type. During the year 1912 we printed nearly 1,000,000 forms of various kinds, and also printed and bound 1000 service books of seventy-four pages for use in the Institution Chapel.

The boys can put up any job which is required for the Board's use. One lad in particular, who can neither read nor write, is by far the best compositor. He will put up a job nearly perfectly. He works best from printed copy, but he is now beginning to work from manuscript. Several of the boys can also put these jobs into chases. Four of the boys can each print off from 800 to 1000 copies per hour. Several other boys are speedily becoming equally proficient, and at the end of the day they will clean up their machines in quite a workmanlike manner.

Linen label making and printing, also relief stamping, is largely done in this shop.

In the face of the foregoing, what industry can be considered hopeless for these people to undertake?

The installing of a printing plant is a costly experiment, but is well worth the

venture, as the educational advantages for the patients are so great.

Independent expert advice is necessary in equipping a printing shop. In this respect we at Darenth were fortunate in having the assistance of a gentleman who is thoroughly conversant with the business. With his help undoubtedly a good deal of unnecessary expense was avoided.

Needlework.

This, of course, is purely women's work and most useful for girls. The ordinary feeble-minded girl will soon learn to do a little repairing and in time plain sewing.

The ordinary repairing of linen and clothing in an institution is an important matter and one on which a great deal of money can be spent, and although not so showy as other work it is both useful and profitable.

The amount of plain new needlework required in an institution of any size is remarkable, and this is work that the advanced pupils can well do.

At Darenth there are employed on new work 142 patients; in the repairing-room,

117 patients; and in the teaching needle-room, 45 patients. In 1912, 50,000 articles were made and 64,500 articles were repaired. 64 sewing-machines, 2 buttonhole-machines and 7 stocking-machines are also entirely worked by patients in these rooms. The goods made are sent direct to the institution requiring them or to our central stores for distribution.

House-painting and Decorating.

This is a profitable and useful work for boys in an institution, and one or two pupils put with a good trainer will in a short time prove useful in cleaning and preparing work for painting, washing off distempered ceilings, or stripping, rubbing down and preparing walls for re-papering.

The risk of accidents is great, and it is necessary to carefully choose your boys and make sure that epileptics are not allowed on ladders or scaffolds.

At Darenth there is a party of about sixteen boys engaged in this work who have recently painted a large ward throughout. The value of the work was £180, and it

compares favourably with similar work done by a contractor.

Work to the value of £500 has been executed by the boys with one trainer in a year.

These lads also do the staining, varnishing, French and wax polishing of articles made in the carpenter's shop.

Building and Outdoor Work.

It will be found that a number of boys are best suited for outdoor work—strong robust lads, who resent close confinement in shops. These are lads who will prove useful on the farm, in the garden, and in building work. It is hardly necessary to give details concerning farm and garden work, but a few words may be said about building.

In an institution a staff bricklayer is usually kept, and small extensions and alterations are frequently required. An intelligent artisan, with the help of six or eight boys, can readily undertake such work. The boys are first taught to excavate ground, to mix and carry concrete, to make mortar, and to do other little jobs incidental to building work. Later on, the boys can help

to flush up walls, to back up or fill in walls, to rake out the joints, and assist in pointing the brickwork. All this kind of work is beneficial to their development. Bricklaying can be taught most easily to lads from fourteen to sixteen years of age. Older lads are not so likely to be interested ; they are not so amenable to advice, but are more suited for the labouring portion of the work.

Working in the open air benefits them, and leaves them healthily tired at night, while seeing the building grow up with their assistance encourages them to greater efforts.

In an institution of any size it will be found that the upkeep of the roads is a considerable item of expenditure. Here the strong, sturdy lads may prove useful. Tar painting of roads has of late years been largely adopted. If the roads are taken in time they may be made nearly indestructible at very little cost by the use of patient-labour.

The equipment necessary for executing this work consists of a good quality eighty-gallon tar copper on wheels, with a 2-in. draw-off cock as near the bottom of the copper as possible, a supply of strong bass-

brooms for sweeping off the roads, and some 12-in. cocoa-fibre wire-drawn brooms with which to lay the tar.

It is most important that the surface be swept quite free of dust before the first coat of tar is brushed on, and so with each coat of tar following.

A party of a dozen boys will cover a large area of ground in fine weather, and though the work is rather dirty it is healthy.

Wood-chopping and Bundling.

This is an industry fairly easy for patients to attempt, and is profitable if there is a good demand for your output.

Old timber should be purchased where possible; failing that, deal ends, which can be purchased by the fathom.

Deal ends are more difficult to procure each year owing to the great demand for this timber for box making.

The alternative is cord-wood, but the economy of purchasing this kind of timber depends a good deal upon the district in which your wood-chopping is likely to be done.

There are good serviceable bundling

machines on the market costing about £5, or a more simple machine can be made for a few shillings. This latter machine is generally used in workhouses.

If wood-chopping is done to any great extent the man in charge should learn to sharpen and set his saws, as here, again, the cost is great if they have to be attended to outside.

The filling up of the tied string and keying the bundles up with a mallet in the old-fashioned way is the easiest method for beginners.

At Darenth the opportunity for the disposal of our output is unique, as we supply all our other institutions. About thirty-three boys are employed and are making about 300,000 bundles a year.