

scope being effected by a cone of two or three thicknesses of black velvet, a cap (a frill box will do) must be placed over the objective of the microscope, and the interior of the camera examined to see that no light enters. Now, removing the cap, the object is to be focussed on the ground glass, as usual, and the dark slide having been inserted, the plate is to be exposed by removing the cap from the objective, and then developed in the usual way. It is in the focussing and exposure that the only two difficulties incidental to micro-photography present themselves. However carefully the object may have been focussed, the resulting negative may appear slightly out of focus. This is because microscope objectives are not corrected, like photographic lenses, to bring their actinic and visual focus to the same spot. With low powers the difference is generally so slight that it may be neglected, but with higher powers a few experiments must be made to determine the difference by turning the focuss-

ing screw of the microscope slightly each time after the apparent focus has been obtained, noting for each photograph how far the screw has been turned and which way, until a clear photograph rewards our repeated efforts. When once the difference has been found it will always be known for that objective, and no further difficulty will be experienced from this cause.

The other difficulty to which I alluded is in judging of the correct exposure. Most microscopic objects are of a more or less brown or yellow colour, and therefore very non-actinic; added to this, the lamp-light is also of course vastly inferior in actinic power to the daylight we are more accustomed to work by, and thus much longer exposures will be necessary. Then, again, the exposure required with a high-power objective is very much shorter than that required with a low power, hence it is impossible to give any idea of the requisite exposure; it may be half a minute and it may be half an

hour, according to the light, lens, and object; but as usual, *experientia docet*.

If the photograph is taken of the right size, a positive lantern-slide may easily be taken from it; the prepared plate being placed behind the negative in a printing frame and exposed about a foot from a lamp or gaslight for a few seconds. Such a photograph may then be shown on the screen, enormously magnified from the natural size of the microscopic object, to the astonishment of a village audience.

Fig. 2 is a portion only of a bee's eye from a negative taken by the writer. A lantern slide taken from a part of this negative may be shown as a picture twelve feet in diameter. I leave the more mathematical among my readers to calculate the extent of the enlargement thus shown, and have no doubt but that such of them as possess the necessary apparatus will think twice before they again consider photography as a recreation for summer-time alone.

J. POCOCK.

## CHRISTMAS DAY IN A LONDON HOSPITAL.



CHRISTMAS Day in a hospital! How dreadful! We shall pity you, poor dear!"

So said all my friends last year on my announcing to them that I should be unable to join the family circle on the

fast approaching Christmas Day.

I had only recently entered one of our London hospitals to be trained as a nurse, and I confess that my own heart sank when I found I should not get leave of absence for Christmas.

"We shall want all the help we can get," said the lady-superintendent. "It is a busy day here, and I think you will find it a happy one."

So I made up my mind to be as cheerful as possible under the circumstances; but "happy it cannot be for me," I thought. Such a sad contrast to the bright faces and merry firesides I had been accustomed to associate with the thought of Christmas. I had yet to learn that in blessing others we ourselves are blessed.

Preparations had been going on for some days, and all our time off duty had been devoted to dressing dolls and making decorations for the Christmas tree. In the wards the patients had begun to talk among themselves about the coming festivities; the children especially asking many eager questions as to the treat in store for them, their little faces brightening and eyes sparkling at the bare mention of the Christmas tree. Many little patients in our children's ward had never seen one, and forgot their pain and weariness while they speculated as to its size, and what sort of presents each one would get off it. And how hard they all tried to get well! Medicine was readily swallowed and painful dressings submitted to without a murmur, because, "it will help to make you strong enough to go down to the tree."

This eagerness was not confined to the children's ward alone. I was astonished and touched to find even the men putting the constant question, "Nurse, will I be well enough to go down to the tree?"

The day came at last. We rose an hour earlier than usual, and hastily swallowing our breakfast, hurried to the top ward of the hospital to begin the day with a short service and singing the Christmas hymn.

The winter morning had scarcely begun, but the wards look bright and cheerful with the firelight dancing on the holly and wreaths which adorned the walls, and lightening up the faces of the patients sitting up in their beds, arrayed in new scarlet flannel jackets, and we standing in two lines down the long ward in our spotless caps and aprons, hymn-books in our hands, waiting for our chaplain to join us. A harmonium had been wheeled into the ward, and as soon as he entered we began the sweet old hymn—

"Hark! the herald angels sing."

Nearly every patient joined in, some heartily, some only at intervals in weak low tones, but all with evident enjoyment, and many eyes filled with tears. One or two poor women even sobbed aloud before we had ended. "Oh, it was that beautiful! Just like angels a-singing. I did feel sort of heaven-like!" said one old woman to me afterwards.

The hymn ended, our chaplain spoke a few earnest words, and offered up a short prayer with the collect for Christmas Day. This little service was repeated in every ward in the hospital, finishing just in time for us to go on duty at our usual hour. The rest of the morning passed in the usual way—hospital work must be done, however festive the day.

Dinners were served at one o'clock, and all those well enough had a plentiful supply of roast beef and plum pudding, extra delicacies being provided for the greater invalids. At three o'clock the hospital was thrown open to visitors, who had been collecting long before this hour in the courtyard, and came thronging in with eager feet, seeking out their relatives with little delay, except to pause to admire the various decorations of the wards as they passed by.

At the tea hour the hospital presented a very gay and festive scene. Each ward had vied with another in preparing the smartest table. There was no lack of good things. Cakes, jam, oranges, etc., had been sent in abundance, as well as flowers and plants, by the kind subscribers and those interested in the hospital, and great taste had been displayed in arranging the dainties. What a buzz of conversation and laughter as the well-filled plates and cups were handed round by the willing helpers!

Anyone looking into the wards might have wondered what had become of the poor "suffering patients," for all seemed so glad and gay. Those patients whose cases were too

serious to be allowed to join in the feast, seemed quite content to watch their more fortunate companions, and enjoy what little they were allowed to partake of. Not one murmur escaped any lips; pain and weariness seemed for the time banished, the weak ones getting their full share of tender service and kindly sympathy, and the stronger patients never forgetting to keep their mirth within bounds, so as not to jar on the nerves of their more suffering neighbours.

At six o'clock the great event of the day came off. The board room, which had been closed all day, was thrown open, and there in the middle stood the noble tree, towering up to the ceiling, radiant with dozens of tiny lights, and almost weighted down with its load of treasures; the large dolls forming a picturesque group round the base of the tree. Dolls formed the greater part of the presents, and were received with delight, not only by the children, but by the men and women—all were anxious to get one; the men particularly received them with great joy.

"For my little 'un at home, nurse!"

Forms and couches had been arranged carefully about the room, so as to accommodate all who were able to come down.

Many walked in, some with the aid of sticks and crutches, some leaning on a kind strong arm. Children were carried down by the doctors or students, for everyone seemed eager to do all in their power to help make merry, and lastly came those who were unable to be raised from their beds; these were carried bodily upon their mattresses, and laid carefully on the couches or forms. When every available part of the room was filled, it presented a strange sight; it reminded one of the Pool of Bethesda, for there were the halt, the lame, and the blind, young and old, all more or less afflicted and suffering, assembled in a group round one centre-piece—the Christmas tree.

Quick hands soon stripped the branches of their treasures, each one receiving something. Perfect order was maintained throughout, no snatching or clamouring; their quiet and good behaviour was remarkable, considering the untutored rank to which the majority belonged.

When the tree was quite stripped the senior surgeon addressed a few kind words to the patients, and dismissed them with the wish that none would be the worse and many the better for their Christmas Day's entertainment.

It must not be supposed that those patients



who were unable to attend the gathering round the tree were forgotten. Business meanwhile had been going on gaily in the half-deserted wards. Bran pies and lucky tubs were handed round from bed to bed, so that even the most feeble shared in the distribution. Each patient, too, received some substantial present.

In one ward, for instance, each woman received a warm petticoat or jacket, while the men got knitted vests and socks, and each gift was accompanied with an illuminated text, bearing sweet words of comfort and peace.

Surely many a heart, hardened with the struggle and battle of life, must have been touched and softened on that day, while some, I sincerely trust, will carry away with them the remembrance of their Christmas in a hospital, which, doubtless, many had dreaded as much as I myself had done, but where they learned to understand a little of what is meant by "Peace on earth, goodwill towards men."

"To think so much should be done for the like of we!" exclaimed one old man with tears in his eyes. "Why, they seems to glory in waitin' on us, and fussin' us up!

But t'aint themselves as does it, it be the Lord in their hearts."

But was it not also a joy to us to make these weary ones joyful! Let any who doubt it just try the experiment on this coming Christmas Day. Let them give up their usual part in the family gathering and all the luxury of their rich homes, and go for once among their poor brethren—the sick and sad of our great city. Let them see the glad smiles light up the wan faces and hear the words of gratitude, and I, from my own experience, can tell what will be their answer to the question, "Did you spend a happy Christmas?"



## CHRISTMAS BELLS.

CHILDREN, I love to see you gay;  
Put not your holly wreaths away,  
Cease not your mirth and singing,  
Mine eyes are dim, and will o'erflow,  
And gentle Lilian wants to know  
"How is it tears can gather so,  
While Christmas bells are ringing?"

My lily flower, this holy night  
To your young hearts is wondrous bright,  
The blessed day-dawn bringing.  
You cannot tell through what a throng  
Of tender memories, sad and strong,  
Age listens to the angels' song,  
While Christmas bells are ringing.

To-night the moonlight floods the snow,  
As one glad eve, long years ago,  
When I (my young heart singing),  
Came to my fair new home a bride:  
Warm welcome glowed the bright fireside;  
Without, the moonlit snow lay wide,  
And Christmas bells were ringing.

Months fled; one night of storm and fear  
I watched for coming footsteps dear,  
Long hours no comfort bringing.  
Ah! God, it was a night of dread:  
Drowned in the swollen torrent's bed,  
Out in the wild, my love lay dead,  
And Christmas bells were ringing.

Child, never dream we cannot bear  
What God lays on us. To my care  
A baby life was clinging;  
A fairy thing with golden hair,  
And eyes like those which wait me there,  
Beyond yon starry ether, where  
The Christmas bells are ringing.

A little space, an eve of dole,  
The angel lent; the tender soul  
Its homeward flight was winging.  
The blue eyes closed upon my breast,  
I laid it softly as to rest—  
My birdie, in its cradle nest,  
And Christmas bells were ringing.

Child Lilian, when the joy peals break  
From roof and tower, for me they wake  
Heart memories closely clinging;  
I live my life's bright hours again,  
I gauge its depths of woe and pain  
(God-sent sweet one, so not in vain),  
While Christmas bells are ringing.

And still afar, through patient tears,  
Shines one bright hour, which these dim years  
Are ever nearer bringing.  
Sometimes I think (God's love is great)  
That I may reach the Golden Gate,  
Where my beloved my coming wait,  
While Christmas bells are ringing.