

attention to the fact that light, and more definitely the light of the sun, had a remarkably stimulating influence upon his spiritual forces and his power to carry out the university labour.

Soon after he had obtained his degree, therefore, he started several series of researches in order to confirm this observation of his, namely, the salutary influence of light upon all parts of organic life. He fully succeeded.

In the first place, he stated that the light of the sun or of any other light similar to it (carbon arc-light especially) had an obviously beneficial effect upon the healthy body as well as upon a body affected by many different kinds of disorders, and especially by tuberculosis.

In the second place, he stated that the light's rays, especially if they were concentrated, had strong bactericidal power. Moreover, he stated that this power was strongest with the blue and violet and ultra violet rays.

This observation made him start his classical researches on the treatment of tuberculosis of the skin, and especially on the treatment of lupus, with concentrated light. First he used the light of the sun; but in our climate this is, for obvious reasons, a most discouraging task. Then he took up the treatment with a carbon arc-light, which is very similar in its composition to that of the sun. Here he succeeded extremely well, and this treatment has, since that time, remained the classical treatment of lupus, superior to all other.

Still, he had many difficulties to overcome. If strongly concentrated, the light was inclined to give a serious and very unpleasant burn of the skin. This was prevented partly by interposing a chamber, a column of water, between the concentrated rays and the skin, partly by cooling the skin itself by sending a current of cool water through a compressor placed directly upon the spot to be treated. This compressor had also another object, namely, to remove the red blood from the skin. The red cells of the blood absorbed many of the rays, and especially the most efficient rays, the blue and violet ones.

But he had one more great difficulty to combat. The optics of his instrument for concentration of the light were originally made of glass. But this substance absorbs very many of the blue and violet rays. Therefore he replaced it by quartz, and this modification improved the result of the treatment considerably.

It was a great help to Finsen that he had exceptionally good technical faculties, which enabled him to construct all his instruments himself.

This was a chief reason why he almost always came rapidly to the right result in his experiments.

A great number of attempts have been made all over the world to improve the model of his lamps, but even after twenty-five years his model remains unaltered as he first constructed it in 1900. This one thing proves his genius.

As to the practical use of the lamps I shall not enter into any details. I shall simply state that a

single treatment of one area takes as a rule two hours, and produces a reaction most like that of a slight burn. After ten to fourteen days this reaction disappears, and then the treatment is repeated. Such a treatment must be repeated at least four to five times, and sometimes more.

The percentage of cases of lupus definitely healed with this treatment was originally about 60 per cent., but during the last years this has increased up to 85 per cent., due (1) to an earlier starting of the treatment; (2) to a better technique; and (3) to supplementing the local treatment with general light baths, as you will see in some other departments of the Institute.

The great advantage of the Finsen treatment is not only the high percentage of cures, but also the beautiful results as to the scars. The disfiguration is much less than that of any other treatment of lupus.

During the last ten years the treatment with general light baths (coal arc-lamps) has been used very much, and especially for tuberculosis. The forms of tuberculosis most suitable for this treatment are tuberculosis of the skin, the glands, the bones, and the joints. The results have been surprisingly good. To give detailed figures is rather difficult, as the figures differ considerably from one localisation of the disorder to another. Especially in children the treatment has proved to be of very great value.

The Institute was started as quite a small one by Niels Finsen in 1896.

But it has grown up rapidly. It comprises now a great laboratory for scientific researches.

A skin department of 90 beds.

A surgical department of 70 beds.

A department for diseases of the ear, the nose, and the throat of 16 beds.

An internal department of 45 beds.

The number of doctors working in the Institute amounts to 20.

The number of nurses to 175 persons.

The annual expenditure of the Institute amounts to £90,000, most of which is given by the State.

All treatment of tuberculosis in Denmark is practically gratis. The result of this has been that we have the lowest mortality for that disease in the world—3.8 per cent. out of 100 cases of death. In 1880 it was 25 per cent.

These splendid results of Finsen are based directly upon the ground created by a sick and feeble but still always hard-working man during twelve short years. He died in 1904, immediately after he had received the Nobel Prize for his work, being the second medical man to obtain that honour. Of the prize money the greater part was given by him to this Institute, where his heart and his soul had been for many years, and to which he had previously given almost all his energy. He had a most charming and stimulating character. Therefore he attracted to his Institute a long series of well-qualified young doctors, who have all esteemed it a great honour to follow up and develop the ideas of the master.

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