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On Hospital Treatment for Crippled Children

BY SIR HENRY GAUVAIN M.D.*

PRESIDENT GEORGE H. SEDGEWICK: It is not often, gentlemen, that we have as our guest a member of the medical profession. They seem to fight shy of us for some reason or other. Our last guest in the medical line was our own Dr. Banting who spoke to the club a few years ago. But we do like to be able to honor occasionally the medical profession as far as we can do so by inviting them to visit us. They have a great tradition. It is a tradition of service and philanthropy, sometimes, even, of martyrdom. We remember that one of our own members, Dr. J. J. Mackenzie was a martyr to his service in the cause of medicine. And we are very glad to have with us Sir Henry Gauvain whom we honor not only for his connection with that great tradition, but for his own services and accomplishments and aims in his work in London, particularly in the service of crippled children in the Lord Mayor Treloar Hospital and his tuberculosis work in many hospitals in London. I have very much pleasure in introducing to you Sir Henry Gauvain.

SIR HENRY GAUVAIN: Mr. President and gentlemen, may I just say how very much I appreciate your hospitality and how grateful I am for the honor you are doing me in inviting me to address this famous club. I fear the subject on which I have to speak to you is not wildly exciting, but I know it will interest all men to whom the cause of suffer-

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ing childhood appeals. I have had a great privilege in coming to this great Dominion as the guest of the Canadian Medical Association and the Medical Tuberculous Association. I was met at Halifax and taken across this wonderful country right to Vancouver, stopping at most of the cities on the way, and I had the privilege of being the guest of Dr. Starr, whom I see here. And then I had to go to the States. Believe me, it is like coming home again to come back to Toronto. And, indeed, it was only a chance of fate that I did not make my own home here, because the day after I was appointed Medical Superintendent of the Treloar Cripples' Hospital I received an invitation to come to your University here in a medical capacity and but for the fact that I had signed on for Alton I would certainly have accepted the invitation. Perhaps my regret is a little more intensified when I hear from Dr. Starr that the gentleman is now earning an enormous sum of money—very much more than I could ever hope to attain.

I have had a wonderful time—experiences and adventures which could almost fill a book, but I must not stop to talk about them, although you may be interested to hear one or two little incidents. I was on the Great Lakes on one of your magnificent steamers when a delightful little thing happened. The slogan of the vessel was "The ship is yours." I enjoyed the singing they had and afterwards there was dancing and I was looking on perhaps a little wistfully when a lady came up and introduced herself as the social hostess and said, "would you not like to dance?" I admitted I would and she said, "There is a little lady here who is a real peach, and if you want a real nice girl I will introduce you." I was taken to the girl. Who do you think it was? My own wife! My wife was awfully touched with that compliment.

Then, sir, we went across the prairies and over the mountains and there had an adventure with a bear that might have been tragical but ended as a comedy. I must not tell you about that. On the way back I learned what I already knew, that the doctors of this country are tremendously admired. I was in the train smoking in one of those places where you smoke and a great big tall Western farmer

came in—a fine, jovial fellow and he entered into conversation and presently the conversation drifted to doctors and he said, "Say, we have got the best doctors in the whole world here." I said I felt that was so and he went on, "I'll tell you. A lady I know had something wrong with her throat and could not swallow and so she went to a doctor." I said, "Did the doctor cut her throat?" "Oh, no," he said, "The doctor said to her, 'Madam I want you to swallow this little tiny pill' and he gave her a little tiny pill. She swallowed it, but it got stuck in her throat and would not go any further. 'Can't you swallow any more?' asked the doctor and the lady said 'No.' Then the doctor said, 'You take this other little tiny pill and swallow it and when the second little pill reaches the first little pill you will be all right.' So she swallowed it and believe me, sir, when the second tiny pill reached the first tiny pill there was a terrific explosion and when the smoke and flames had cleared away she could have swallowed a cantaloupe." Well, my admiration for the medical profession in Canada went up one hundred per cent.

It was a great privilege to meet all these doctors. We stopped off and met them all. Dr. Routley had arranged for lectures to be given in all sort of districts and men came hundreds of miles to have a talk and enjoy a jolly evening afterwards.

Well, I have been asked to say something about the needs and care of crippled children. Gentlemen, you are lucky here because you don't see cripples nearly so much as we do in England. But there are plenty of them and if you were to go to some of the back blocks on the prairies, miles from anywhere, you would see in some places sick and crippled children, perhaps confined to the house, unable to go out, little withered flowers, unable to receive aid. That I felt sure would be a sad sight to all humane men. The same sort of condition prevailed in England. There were means for treating children crippled by tuberculosis when it was sufficiently serious to justify an immediate operation. But these cases are long cases. It takes a long time to straighten a curved spine and our hospitals could not keep children all that time just the same as your acute hospitals

could not keep them either. Room had to be made for other cases. Sir William Treloar, at that time Lord Mayor of London, decided to do something. He already had some idea of their needs because many years earlier he had heard Dickens read his Christmas Carol and he was much affected by hearing the description of tiny Tim. He had a hamper fund, which received royal recognition and is still existing, and every crippled child who is indigent can receive a hamper of good things at Christmas and get a little joy. That taught him a little of the needs, but he felt that much more should be done and when he was Lord Mayor he appealed for money. Again he was helped by the King and Queen and raised a sum of £60,000. At that time there was a hospital in Hampshire lying derelict. It had been built by the Daily Mail during the South African war and in 1907, the need no longer existing, it was shut down and Sir William was fortunate in having a suitable place handed over lock, stock and barrel by the Government. That is where we started. We had many anxious talks about how to do the work and we decided on a thing that had not been thought of before. The problem of crippling is not wholly a medical one and no matter what a doctor can do he cannot do all that is required for the crippled child, particularly those who require lengthy treatment. They really need not only to be treated but to have their deformities corrected and during the long time required, often strapped down on hard boards and in all sorts of curious positions, their morale will suffer if something is not done. We decided they should be educated and they are educated while receiving treatment. And then after they go out, or sometimes before they go out for there are some of the cripples whose deformities orthopedic treatment will not correct, we established for these a special branch called the College and there the crippled boys are taught and educated; taught in trades suitable for their limitations. At the end of three years' training they become craftsmen and we are able to get them employment and convert them into self-supporting citizens. I think you will agree that is very desirable.

It is not enough to cure the cripple of his illness. Very much more than that can be done. You know that one has

a responsibility in accepting a child from its parents, perhaps curing the disease, but leaving him sadly crippled. It must be a great sorrow to the parents and a great unhappiness to leave that dependent child. Therefore it is very necessary to train them and meet their needs to the utmost. And that is what we are endeavoring to do. I think Shakespeare says: "Oh, no! The apprehension of the good gives but a greater feeling to the worse. Fell sorrow's tooth doth never rankle more than when it bites, but lingers in the sore."

That is true of crippled children, not to be able to go back and live in the capacity of a wage earner. That is our effort in England. We have 400 beds for the children and they remain for a considerable period of time. Over here I was immensely impressed with the wonderful work your doctors are doing. But this side of the cripple is the social side, one they cannot do unless you give them that help and financial support that is needed and I know it only means that the warm-hearted citizens of this country when they are told of the real needs will be ready with the help that is required.

I was in Vancouver the other day, in B.C., and had a letter from a parent to see if I could do anything for a little girl, who had been operated on successfully but could not be kept on, as they wanted the beds for acute cases. This poor woman and husband had sold their house and things and had come to the end of their resources. I can assure you it was a great happiness to be able to tell them that I was to have the honor that day of opening the Queen Alexandra Solarium where such cases would be received and educated and trained, and I hope such institutions will be founded throughout Canada. It is only necessary for the need of such work to be pointed out for it to be done. You have the doctors—none better in the world, and I am proud to meet so many of them; proud to see Dr. Banting who has achieved international fame.

I won't weary you with the technicalities. Now, what about the so-called sun cure? I will tell you about it as far as it regards surgical tuberculosis. First of all the sun cure is not a cure for surgical tuberculosis. May I make that quite clear because all sorts of exaggerated statements have been made which are bound to react badly. The sun treat-

ment is a very great help in the treatment of chronic tuberculous cripples and I feel that we as doctors should use every possible means to help out patients. And if the sun treatment will help let us employ it. It does help and we do employ it. So far as surgical tuberculosis is concerned we may describe the effect of sunlight in three ways. First there is the effect on the mind; secondly the effect on the surface of the body and thirdly the remote effect on disease right inside the body.

As to the effect on the mind: When we send children to Alton and Ayling Island they are kept in quarantine for a period to see they don't introduce infectious disease, and they are gradually accustomed to the open air and the process of hardening takes place. The head teacher goes to see each child and at the end of the quarantine period the child is transferred to that ward best suited for it educationally as well as medically. We employ twenty whole-time teachers who do nothing but teach the children. They have no nursing to do. Every child gets taught, even the little tiny ones, strapped down and perhaps unable to lift their heads at all. They cannot lift their heads so the lesson goes to them. They are lowered on pulleys so they can see the lesson and get instruction. The happiness this brings to the children is almost pathetic. It occupies time and keeps up the morale. When they get out of the observation ward they are started on the sun treatment. To begin with the legs are exposed for five minutes three or four times an hour, until the whole body can be exposed to the influence of the sunlight and open air. It takes two weeks before they are fit for full exposure. Gradually they are exposed for longer periods to the health giving rays of the sun.

What is the effect? If you look at these children you will be struck with their animated appearance, their happiness, vivacity, alertness. If you go to a town hospital where a child is in bed with closed windows his muscles tend to droop and weaken and he becomes a little irritable. If you saw the open air children you would hardly believe they were ill children at all. They look full of the joy of life, and that happiness is a most essential feature as it has a tonic effect on the mind. I might mention some interesting

observations we made with tuberculars. Dr. McRae worked out a mental intelligence test in the London physically defective schools and then he came and worked out our children. To our astonishment we found that for an average age of ten our children were mentally one year in advance of the London children. Having gone carefully into the matter, by a process of elimination, we found that this could only be attributed to the action of light. I think that is an interesting and important fact. It has a bearing not only on crippled children but on all children. I think that is one of the reasons that summer holidays are so good, when you let them be wise holidays out in the sunlight, and given proper sun hats, seeing that you don't overheat. Particularly useful I can conceive it to be in the case of sub-normal children.

Now to come to the action of light on their bodies. Light, that is ultra-violet light, has the power of killing germs exposed to it and ultra-violet light occurs in sunlight. But this ultra-violet light has little power of penetration. It cannot go through the thickness of the human skin. It won't go through ordinary glass—only quartz. Indeed, I don't know whether you have ever seen a tubercle bacillus, but if you can imagine one lying on the top of the other the ultra-violet light has so little power of penetration that it will slay the top bacillus, but the bacillus underneath would remain protected and survive. That is to give you an idea of its small penetration power. But it is very useful in the treatment of superficial tuberculous conditions. The lethal effect is considerable and it has proved to be, perhaps the best treatment we know for healing that distressing condition, *lupus vulgaris*, an eating away condition of the face which is, happily, not common here.

What about the deeper effect? It seems astonishing that ultra-violet light that will not penetrate the thickness of the skin should have a profound effect in the depths of the body. It does nevertheless. You may have heard of the work of Dr. Hess in New York—one of the pioneers in the light treatment for rickets. Children on unsuitable diet and kept in closed rooms are liable to develop rickets and get deformed. With an X-ray photograph you can see the rickety joints. Expose the child to sunlight and the disease

will be healed. There will be a tremendous change taking place in the bones and joints and you will get healthy bones and yet the light cannot get to the joints. You may feed the children on an unsuitable diet, but by exposing them to the light you will prevent rickets.

Then again light has been shown to have a profound effect on the power of the blood to destroy organisms. If you expose the skin sufficient to get just slight erythema you will increase—or in the majority of cases you will increase—the killing power of the blood against germs. That can be measured in the laboratory. The blood takes on some new property and is able to destroy organisms more readily than before. Another interesting thing is this: If you take a little blood and irradiate that blood with ultra-violet light that blood has no increased property. It must be via the tissue. There are thousands of these interesting problems and doubtless a lot remains to be discovered. Sonne, the great Danish scientist, showed that rays of light were absorbed in the blood stream and converted into heat. If you irradiate the surface of the arm, by a thermopile, an electric means of estimating temperatures, you can ascertain that the blood coming from that irradiated area may have a temperature of 115 degrees and yet the general body temperature hardly rises. It is a local heating and when the blood gets into the body it is cooled down rapidly, just as water in the radiator of a car, and the general temperature is not raised; and that has a profound effect on certain forms of disease and is a great help.

There are lots of other ways in which light assists. There are also ways in which it is bad. I don't think the sun treatment or the artificial light treatment should be given except under medical and expert advice. There is undoubtedly danger in it. I am certain a great deal of harm can be done if given carelessly or unscientifically.

And when we think of the value of this light we should remember that we ought to conserve that light. Here, standing up I can look out across the city and lake and island and I can see the sunlight streaming through. But over the city I see smoke clouds. Those are screening off these health-giving rays from the children and, therefore,

smoke is not only unpleasant to look at and unpleasant to the nose and to the body, but it is actually screening off these valuable rays of light. In England now we are tackling the smoke nuisance and trying to arrange for more perfect combustion of coal so that light will not be cut off. I hope I have not been too technical, and I thank you very much for the kind way in which you have received me.