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APPROACH TO THE PRE-CANCEROUS STATE

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I must ask for a certain indulgence because I had rather short notice to contribute to to-night's proceedings, and since the notice was given I have been exceedingly hard pressed and have not had time to prepare my remarks as I would have wished. Nevertheless, I hope that what I have to say will prove in certain respects worth while and interesting.

In the first place I should like to call attention to the work of Professor Otto Warburg in Berlin, the publication of which no doubt a number of you have already seen in the *Triangle* of July, 1956.

I think the gist of Warburg's work is as follows. In dealing with tissue cultures, from malignant and non-malignant tissues, he has demonstrated that the malignant tissue cultures are distinguished from the non-malignant, which may be growing quite as rapidly, by the fact that their respiration has been damaged and their energy is obtained by glycolysis. That is the first fundamental observation, which was made first a good many decades ago but which has become much clearer as a result of more recent research.

Warburg's demonstration is that in the development of malignant tendencies under the experimental conditions of tissue cultures, a damage takes place in the first instance to the respiration of the cells and this damage is irreversible. If, for instance, a rapidly growing tissue culture is starved of oxygen for quite a short period of time and then the oxygen supply is returned, it has lost to the extent of 50 per cent. its ability to use

the oxygen. There is a strange irreversible loss of respiration in tissue cultures starved of oxygen, whether starved of it in the nutrient fluids or by oxygen poisons, such as urethane and so on. This, in Professor Warburg's understanding, is the fundamental crisis in the development of malignancy. But the tissues in that state of depressed respiration are not *ipso facto* malignant.

He has gone on to demonstrate how it takes a considerable number of generations of cells to build up the glycolytic method of energy production in the cell to a level sufficient to bring about frank malignancy. His researches indicate that there is first damage or destruction of the respiration and that is succeeded after a latent period by generation after generation of cells which build up the alternative glycolytic function of energy production.

Warburg points out also that the two forms of energy production in the cell are distinguishable morphologically, as well as in the sheer biochemical mechanisms. The respiratory function in the cell is attached to the mitochondria, which can be separated as distinct autonomous entities within the cell, and in the destruction of the respiratory function the damage falls on the mitochondria within the cell. In the course of the degradation of the cell into the malignant condition there is a morphological de-differentiation. That is to say, the differentiated type of cell, or specialized type of tissue, regresses to an undifferentiated cell and the "dedifferentiation" goes right to the inner morphology of the cell. The mitochondria get destroyed and the cell reverts to the condition which, in embryology, is characteristic of only the very earliest cells. The earliest cells have the glycolytic energy production. I will read you his own words which I think put the position in a nutshell.

"Cancer cells arise from normal cells in two phases. The first is the irreversible damage to respiration. In the same way as there are many remote causes of plague—heat, insects, rats—but only one common cause, the plague bacillus, there are also many remote causes of cancer—tar, radiations, arsenic, pressure, urethane, cigarettes—but only one common cause into which all the others merge, the irreversible injury to respiration.

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a second phase, the development of cancer—a long struggle for existence by the injured cells, in which some of them die from lack of energy while others succeed in replacing the lost energy of glycolysis, the highly differentiated cells are transformed into undifferentiated cells of uncontrolled growth—cancer cells.

These results do not deserve the pretentious title of a theory. They are merely facts. It is not a theory but a fact that respiration in the cancer cell is inadequate; it is not a theory but a fact that glycolysis increases during the latent period; and it is not a theory but a fact that the energy of glycolysis is morphologically inferior to that of respiration."

On a quite different level and in a quite different way, I should like to call attention, side by side with this, to the work of Kasper Blond in the book, "The Liver and Cancer". It is a tiresome, irritating and somewhat annoying book, as it suggests itself, but one I think which all the same is full of extremely suggestive observations and correlations of observations. I think it can be said that what he is drawing attention to is that the vast majority of cancers in human beings develop in the portal circulation. One must qualify that by saying his notion of the portal circulation is expanded rather considerably over what is normally taught in anatomy. Through the anastomosis between the portal and systemic circulations he envisages a far wider play of the portal circulation through the body than is normally accepted, and the flow of blood in this portal circulation is often retrograde in direction. Many of the strange effects in the distribution of carcinoma he interprets by this view of the portal circulation.

He also regards the circulation within that portal circulation, or the areas within it of stagnation and congestion and so on, as being determined by the liver into which it drains—a somewhat difficult view, and, frankly, I am not sure in what way it should be taken. The statistical facts he brings forward and the way in which he brings them out are, to say the least, stimulating and for me they do make for the first time some rhyme and reason for the malignant distribution in children as compared with adults. The distribution in children is determined by the placental circulation, and this gives a certain

rhyme and reason to the difference in distribution which I think is well worthy of considerable study.

If one puts these two entirely different levels of work of these two men side by side, it is perhaps comprehensible that what Blond is referring to in terms of toxins from the liver or the digestion could well be related to Warburg's terms. That is, stagnation is producing areas of anoxaemia and these areas are, in the sense of Warburg, producing a respiratory depression and the areas are then exposed to a regression to the malignant state. It would seem to me that in some way as this one might, from the level of cell studies and these statistical and organ studies, as it were, of Blond, begin to build a bridge towards an understanding of the development of cancers. To me this whole phenomenon of regression, as I said when I last spoke on this subject, seems of the greatest importance.

I should now like to refer to something else. In neither of these contributions is one really dealing with entirely human levels but with the physiological levels of this subject, and it seems to me that in discussing cancer one has to grapple with it as a development in the life history of an actual individual. The danger of the statistical studies or any other analytical studies in the scientific sense is that in dealing with them one forgets the actual individual patients in whom the conditions develop.

I should like to put side by side with what I have just been saying from the physiological level the following considerations. There is a danger when one tries to describe diseases in relation to an age, when, for example, one talks of cancer being related to modern civilization. Men such as Professor Haddow are, quite rightly, ready to jump severely on people who are prepared to attribute the incidence of cancer to being a by-product of civilization. It is pointed out that cancer always existed for people reaching the age at which to-day cancer tends to develop. But it remains a fact that it is part of the pattern of present-day civilization that people do live longer. One cannot simply dissociate greater longevity to-day from the rest of the pattern of our civilization. To-day in the Western world people on average live longer than people did in probably any previous time in civilization. Therefore, it belongs to the pattern of

present-day civilization that people now die of cancer much more often than before. We need not get involved in arguments as to the causation of greater longevity, but the fact remains that in the whole pattern of the civilization in which we live the two things hang together.

It seems to me that the particular crisis which is involved in the development of cancer is the crisis of menopause, in the same way as it may be said that the crisis which is involved in the development of, say, tuberculosis is the crisis of adolescence. The difficulty is that in referring to "the crisis of menopause" one's words will be taken in the most strictly defined sense and as meaning the crisis at the end of the menstrual periods in women. I am not referring to that; I am referring more to the crisis of middle-age as defined by the psychology of Jung; the crisis that occurs when one has reached the limits of one's mature adult life, when in a sense one can go in the external world no further and has got to turn back to one's own inner existence increasingly with age. It is a psychological crisis which Jung has done more to illuminate than probably any other psychiatrist. It is the crisis in which the physical cessation of the periods is only one particularly obvious outer manifestation. It seems to me that the danger of cancer develops in the life of the individual in association with this crisis and the change of life, when the ascending arc of life reaches its zenith or non-tide and one must develop a new orientation for the future.

It may be asked, why, therefore, do people in the twenties or earlier get cancer? In biology nothing has a sharp beginning or a sharp end and things have their echo before as well as after them. I am suggesting that in that elastic sense, because these events have their premonitory sounds as well as those which follow them, and because of the way in which it seems to me both psychologically and biologically one has to train oneself to think, the crisis which shows itself in a development of cancer is associated with a failure to achieve the spiritual transition to the second half of life.

Can one build a bridge at all between these two sides? It is not easy, but with a little patience one can make some pro-

gress. I should like now to bring forward in outline some case histories, though only a few because time is limited and one cannot endure too many such anecdotes. These cases were treated with *Iscador*.

The first case is that of a woman whom I saw six or seven years ago when she was nearing menopause. She was 46 and came to me because she had an extremely large gastric ulcer about 2 inches long. She had also extremely severe mastopathy in the breast, with some very hard, large lumps. The ulcer was so large that the question arose of whether one ought to do an operation. Her refusal of surgical intervention encouraged one to see what could be done without it. I began treating her and within a very short time her gastric symptoms subsided and in the course of time her breast became completely clear of the mastopathy. In the meantime I did a capillary filter paper test on the blood according to Kaelin's method to see whether there was a tendency to cancer or whether the condition was pre-cancerous or cancerous. As far as I could ascertain from the result of the test the condition was a dangerous and pre-cancerous one. I have made a succession of tests from that time until now. The quality of them has improved and the patient has undergone a very remarkable improvement. She has passed menopause and has adapted herself to it extremely well. I cannot prove she would have got cancer, one never can in such a case, but she herself was at the time and remains convinced that *the* remedy which affects her beneficially and changes her whole attitude to life is *Iscador*. From the moment I started giving it to her the change in her condition was absolutely obvious to everyone who knew her.

The next case is that of a man of 46 who was extremely active and successful in business. He was one of these very rapid workers who never seem to have a doubt or hesitation in their mind as to what should be done and whose decisions are so well adapted to the business needs of the moment. He came to me because he was disturbed because he was losing this gift. He was finding himself uncertain, lacking in energy and interest, with mind wandering and queer feelings of giddiness and so on. For a time I treated him simply with the ordi-

nary homœopathic remedies after a certain amount of discussion with him upon the nature of the symptoms and the problems of adjustment at the age of 46 to a rather different tempo of life. Throughout he was very co-operative and most intelligent and understanding. He did not improve as much as expected and so I did one of these tests on his blood. I was then convinced he was in a pre-cancerous state and I started treating him with *Iscador*. Within three or four weeks he was telling me he was, for the first time in 18 months, entirely feeling himself again, and able to cope, and with a much better and deeper understanding of the problems of life than he had before falling ill. His wife and business associates confirmed the change in his condition and, so far as I can tell, there was a satisfactory progress in events.

Most of the cases I am referring to are of patients with symptoms of tiredness, a certain depression, a certain lack of former active interest and without any very definite and marked symptoms—the sort of condition which it seems to me is to-day extremely common and very difficult in the ordinary way to treat. Not all patients with such symptoms do I find to be pre-cancerous, but a considerable number I do.

The next case is that of a man of only 27 or 28, who was sent to me by his employer because he had a very great fear of cancer. He was feeling unwell and finding his work extremely tedious. He was depressed and, as is said, introverted. Because of his fear of cancer, which I have come increasingly to regard as a serious symptom in many cases, I carried out a test on his blood and formed the opinion he was in a pre-cancerous condition. I treated him and I think the results were satisfactory. He felt much better and quickly lost the fear of cancer and both his employer and family were surprised at the complete difference in his general manner and feeling of well-being. He gained in weight the $\frac{3}{4}$ stone he had lost and now feels fully restored to strength and vigour.

One has to find out in the phenomena observed in the capillary tests where the forces of shape and form in the blood became disturbed. What takes place before the development of cancer, as Warburg shows, is that the form, the morpho-

logical side of things has been overthrown. The cell has fallen out of that differentiation which the form of the whole organism has brought about in the embryological condition. The emotional side of things is, I think, what Blond in his work has neglected in putting all the emphasis on the liver in the cause of the congestions in the portal circulations. He has neglected the dramatic and immediate effect on the portal circulation which emotions produce. I do not think one can go as far as saying the liver produces the cause when one has observed the effect on the portal circulation and the rest of the circulation of the emotions. Strong emotions sustained over a long time, particularly those such as frustration, indignation and anger, so common in modern life and so much part of our modern civilization, produce the exact conditions which Blond indicates.

There are a thousand gaps in what I have said. I am not trying to make a complete story; I am only trying in the study of cancer to bring the whole human being into the problem. The great difficulty in dealing with the problem of cancer theoretically and scientifically seems to be that there is such an overwhelming flood of facts and knowledge and bits and pieces of empirical information that it is becoming almost impossible to grapple with it in a comprehensive form and picture which relates to reality. One certainly will not be able to do so if one leaves out things which have to do with the human being and his emotion, his experience and the phase of life in which they happened. The facts that are relevant to the problem at the middle of the 20th century are monumental in number and it seems to me that they need to be grappled with together not in some cause-and-effect way but by means of a common picture as a whole.

DISCUSSION

DR. BENJAMIN asked what was meant by "mitochondria".

DR. TWENTYMAN said that inside the cell there were small bodies called the mitochondria. Apparently each of them had an autonomous life of its own. They had even been called viruses. They might be said to be to the cell what the organs were to man.

DR. STRINGNER said that he wanted to thank Dr. Twentyman for an extremely stimulating talk. On the question of relative anoxæmia or the lower respiratory rate in the cell, they had been given the views of the author of the article referred to, but what was Dr. Twentyman's own opinion? There was no evidence apparently that the sufferer of chronic cyanotic heart disease was especially prone to develop cancer, even at a late age. Although one heard of cancer developing at a very early age in infants, was there any evidence that in such cases there had been a particularly high degree of oxygen deprivation at any stage?

DR. TWENTYMAN replied that Warburg was convinced that intermittent oxygen starvation was probably the commonest cause of the developments in man. It had been demonstrated that x-rays would destroy the mitochondria and therefore destroy the respiratory function. It seemed certain that the cellular stage, when the complete cancer developed, should be regarded as the very last stage in a long pre-disposed condition, during which the physician should if possible have made a diagnosis and given treatment. The work of Vannier and his whole approach were of extreme help and value, but really it related to another side of the story.

DR. FRASER KERR thanked Dr. Twentyman for not having written his remarks beforehand, because, as a result, it had been relatively easy for them to follow him down all the roads he had explored.

The subject was one that interested Dr. Fraser Kerr vastly before 1939. Some of them might remember one of Dr. Tyler's cases for which she used a remedy, named Diketol, which came at the time from America. An extremely rigid diet for the patient was insisted upon because the remedy was an oxygen catalyst. It proved completely successful for a patient with a cancerous bladder, and other patients given it died free of pain. It surely showed a high degree of success when a patient, having retained normal mental and bodily functions, asked five minutes before dying "Have I got cancer?"

The work of Warburg seemed to agree entirely with that of Blond. The two men were going towards the same objective.

Diketal was not used nowadays because it was so difficult to get food not contaminated with sulphur and chlorine and sulphur.

DR. THOMPSON WALKER also wanted to thank Dr. Twentyman for a very stimulating paper. Could anything more be said about the capillary test? Was it simple, could it be done at home, and how specific was it? Was it indicative of diseases other than cancer?

DR. TWENTYMAN replied that he had not gone into the question of the test more fully because that would have meant a considerable digression. The technique involved was not difficult; the task of deducing the results required much experience. Dr. Kaelin first worked it out.

Dr. Twentyman, in illustrating on the blackboard the method of carrying out the test, said a cylinder was made out of filter paper, which must be of a certain grade, and it stood in a small dish in which was put 2 c.c. of blood diluted with distilled water. The blood rose up the filter paper and dried. Fairly stable humidity and temperature were required. Distilled water and solutions of viscum then rose up the paper. "Gestures" were formed on the paper by the blood line as it was carried up and by experience one learnt which of them were significant. They not only gave indications of cancer but also of other diseases as well.

The process was time-consuming and it was not practical for a physician to try to carry out the test while he was busy looking after patients and it was as well to have someone else to handle them.

THE PRESIDENT thanked Dr. Twentyman. The report had been most interesting and the broad pattern of what had been said was appreciated. The correlation with the menopausal condition was of interest because in many people there arose a period of stagnation in spiritual emotions which might be paralleled by a stagnation in the bodily processes. That was something that had been dealt with at some length by an American psychiatrist.

—*The British Homœopathic Journal*, April, '57