Where are we Heading?

(Continued from page 3.)

Northern England ores rich in iron and coalbeds were discovered in close proximity, and this potential wealth was intensively exploited.

Those of you who have seen or read the play, *Milestones*, will have noted there a simplified version of this epoch: in that play we pass from the generation of wooden ships to that of iron ships, and finally to the generation which constructed its vessels of steel. In this period enormous wealth was suddenly accumulated, as we know incidentally quite without reference to the happiness and welfare of many of those who made its accumulation possible. It has been said that capital is the cement that binds a civilisation together. Now at the time of which I am speaking there was so much of this cement that some of it had to be exported to other countries, with results that on occasion were quite unpredictable. For example, vast quantities were sent to the Argentine: the consequences of this we have heard discussed frequently enough in recent times in connection with the Ottawa Conference. Another example: Pola was an Austrian port on the Adriatic, and by the aid of British cement a shipbuilding yard was established there. During the war, instead of building ships to carry figs and dates about the Mediterranean, the Polanese manufactured submarines, which managed to sink some 200 million pounds worth of British shipping.

The Great War had come. The European civilisation which was now in part built up by scientific discovery, was almost to destroy itself by science. In the early years of the present century English scientific work had become definitely inferior in quality and quantity to that of our German neighbours. We were to become specially aware of this during the early part of the war.

Out of that intensification of scientific activity forced upon us in those years arose the Department of Industrial and Scientific Research, which has continued in times of peace. To-day this is extraordinarily well organised, and the output of work under its direction is very considerable. Thus one section deals with building research, and has carried out all manner of investigations on roofing-tiles, concrete bricks, stone preservation, mortars and the like. In engineering various problems connected with iron and steel and other metals have been examined. The fuel research section deals with all questions related to fuels, e.g., the recent work on the oil-coal mixture to replace oil as a fuel in ships. The Forest Products Research Board has carried out many investigations on wood and timber.

The food research is of special importance to us in New Zealand: all matters connected with refrigeration and cold storage, whether of meat or fruit, are the subject of minute scientific control. At the same time agricultural research is being carried out in various institutions and experimental stations. I have said enough, I think, to indicate how closely our modern civilisation is bound up with science, and that the authorities in Great Britain are well aware of this.

I shall now proceed to make reference to another great civilisation which has flourished in our time. In America the problem has been different from that in industrial England, because there the civilisation has partly developed through the exploitation of a great new land, rich in natural resources. At the beginning there was settlement on the eastern seaboard, a fertile country containing in places great mineral wealth.

I mentioned, you remember, the play, *Milestones*, as indicating the rise of the machine age in England: in the same way the very excellent novel, *The Three Black Pennies*, by Hergesheimer, deals with three generations of the corresponding period in Pennsylvania. With the railway American civilisation advanced rapidly westward to the fertile tract about Chicago, known as the Middle West, and then beyond the deserts of Arizona and New Mexico to the rich Californian coast. In the process a considerable amount of surplus European population was absorbed. Even the desert country has been utilised in part and made fertile by irrigation. All this was possible by an application of engineering science, and a civilisation of intense potential wealth has been constructed.

Like England, America has been fully aware of the importance of science, and there also are many organisations for the industrial and commercial applications of scientific discovery. But the saturation point had been reached, and this civilisation, like others, was so organised that it could not even absorb its own working population in economic activities. This check in the power of expansion in America has been regarded as one of the significant causes of the present world depression. The tide of emigration, which for the last century had set westward across the Atlantic now turned, and many are migrating from America to Soviet Russia.

I have already referred to the metaphorical use of the word cement. This newest of all civilisations is cementless; or at all events it employs cement simply for its own constructional purpose, and not as material for competition among its individual members. More perhaps than any other civilisation, this Soviet culture insists on the paramount importance of science for the development and fulfilment of its aims, and it is gradually building up a vast network of inter-related scientific organisation.

A recent book, *A Scientist Among the Soviets*, by Julian Huxley, gives us a strange insight into present-day Russia. By chance it happens that I knew Huxley as an undergraduate, and was thus early impressed by his very great ability; now he is regarded as one of the leading English biologists. In reading his book one notes first of all that he is the trained, scientific observer, impartially examining or correlating facts, and drawing the inevitable conclusions. He relates that Soviet Russia is preparing to increase expenditure on pure scientific research to a scale far beyond that attempted in any capital and country. He points out that in other countries there has always been a serious lag in the application of science to practice, due partly to ignorance or prejudice, and partly to the expense of testing out laboratory results on a large scale. In Russia the liaison between science and practice is organised so as to get over this difficulty as far as possible.

But if Huxley is a trained scientist, he is a human being also. He is aware that a vast experiment is being made with a great race of people in a mighty country, incredibly rich in undeveloped natural resources. He is deeply interested, and in amidst his observations he stops on occasions to wonder and speculate: What, now that the first Five-Year Plan is almost completed, what will be the state of affairs at the end of the second Five-Year Plan, or in twenty years' time, or in thirty years from now?

It is interesting, I think, that a scientist should be human like this, and I am going now to tell you about another scientist, a young man from New Zealand, the most brilliant student I have ever had at the university, who has been to Russia on two expeditions, the first with a body of English scientists on a soil commission, and then alone by special invitation from the director in charge of a large fruitgrowing area in South Russia. In the first Five Year Plan, as you know, the chief emphasis was placed on the basic or heavy industries, and the people incidentally had to suffer in consequence considerable deprivation. The second Five Year Plan involves the establishment of various minor industries, and of these fruit growing is one. The total output of fruit is going to be increased by 1200 or 1500 per cent., it is claimed. But I am not going to bother you with any details like this; I want simply to read to you a portion of my young friend's letter, in which he conveys a feeling of the country he was visiting. Some of you will know the old Russia as described in the plays and short stories of Tchekov, and in the novels of Turgeneff. In fact from the modern novels about Russia we get perhaps after all the best idea of what is happening to their civilisation. It will be suggested by the wise, of course, that one must beware of propaganda, especially as we live in an age where propaganda has been so scientifically exploited. But if one thing is clear, it is this: bad propaganda makes bad art; on the other hand if we are dealing with a good work of art it is impossible to tell where the propaganda begins and the art leaves off. One simply does not know. Thus a novel called *Three Pairs of Silk Stockings* was highly praised both by the conservative "Morning Post" and by the socialist "New Leader": each claimed that it was propaganda for its own side.

But I return to my young scientist. He spent some time in Kiev, enjoying himself there, swimming in the River Dnieper, sun-bathing on its sandy banks among its healthy-looking young people, going in the evening to the open-air "Proletarian Concerts." "I should like to tell you more about Kiev," he writes, "its dusty cobbled streets, with here and there some new straight paved ones; the grassy lane that leads to Vilenski's house on the outskirts; the beautiful deciduous forests beyond the Agricultural Academy, in gently undulating country with little lakes; the crowds of happy white-dressed people thronging up and down the main street at night; the dozens of new co-operative or municipal shops, selling groceries, fruit and vegetables, sports ware and wireless sets, shoes and clothes.

"When we left we went first to Mleev. Our arrival seemed to me at the time extraordinarily romantic, almost dreamlike. After sleeping in the train we set off over lumpy roads under a sky of amazing stars; we were travelling along a wide flat valley with distant gentle hills silhouetted like the blackcloth for a Russian play. Every now and then we passed a greyish-white thatched cottage or saw a procession of broad windmills on the horizon. We turned through a big white gate at last, and found a room in a vague white house where we fell asleep. It was that, framing it in sleep, which has made the memory so dreamlike.

"I was taken through the laboratories (it is a place about the size of Rothamstead, simply for horticultural research) and also examined soil profiles in the field. A similar programme at the other station I visited; along with it we engulfed great quantities of fruit—water-melons, pears, apples, plums. And we were always loaded up with fruit, sometimes also with bread and cheese and other provisions for the journey, when we left. We agreed that so must have travelled scholars on pilgrimages in mediæval times. It was pleasant to feel that nomad hospitality and know that the spirit of the wandering scholars was not dead."

Much, as you know, has been written and talked about Soviet Russia, some of it over-flattering and some of it unfairly hostile. In the end perhaps their civilisation is not so vastly different from our own: I mean, they are human beings just as we are, with griefs and sorrows, joys and illusions, just as we may have them too.

"Artistry in Opposite Sexes"

is the title of a special recorded programme to be presented from 4YA On Monday, October 31.