CHAPTER XII

THE BARBARISM OF "SPECIALISATION"

MY thesis was that XIXth-Century civilisation has automatically produced the mass-man. It will be well not to close the general exposition without analysing, in a particular case, the mechanism of that production. In this way, by taking concrete form, the thesis gains in persuasive force.

This civilisation of the XIXth Century, I said, may be summed up in the two great dimensions: liberal democracy and technicism. Let us take for the moment only the latter. Modern technicism springs from the union between capitalism and experimental science. Not all technicism is scientific. That which made the stone axe in the Chelian period was lacking in science, and yet a technique was created.

China reached a high degree of technique without in the least suspecting the existence of physics. It is only modern European technique that has a scientific basis, from which it derives its specific character, its possibility of limitless progress.

All other techniques- Mesopotamian, Egyptian, Greek, Roman, Oriental- reach up to a point of development beyond which they cannot proceed, and hardly do they reach it when they commence to display a lamentable retrogression.

This marvellous Western technique has made possible the proliferation of the European species. Recall the fact from which this essay took its departure and which, as I said, contains in germ all these present considerations. From the Vith Century to 1800, Europe never succeeds in reaching a population greater than 180 millions. From 1800 to 1914 it rises to more than 460 millions. The jump is unparalleled in our history. There can be no doubt that it is technicism- in combination with liberal democracy- which has engendered mass-man in the quantitative sense of the expression. But these pages have attempted to show that it is also responsible for the existence of mass-man in the qualitative and pejorative sense of the term.

By mass- as I pointed out at the start- is not to be specially understood the workers; it does not indicate a social class, but a kind of man to be found to-day in all social classes, who consequently represents our age, in which he is the predominant, ruling power. We are now about to find abundant evidence for this.

Who is it that exercises social power to-day? Who imposes the forms of his own mind on the period? Without a doubt, the man of the middle class. Which group, within that middle class, is considered the superior, the aristocracy of the present? Without a doubt, the technician: engineer, doctor, financier, teacher, and so on. Who, inside the group of technicians, represents it at its best and purest? Again, without a doubt, the man of science. If an astral personage were to visit Europe to-day and, for the purpose of forming judgment on it, inquire as to the type of man by which it would prefer to be judged, there is no doubt that Europe, pleasantly assured of a favourable judgment, would point to her men of science.

Of course, our astral personage would not inquire for exceptional individuals, but would seek the generic type of "man of science," the high-point of European humanity.

And now it turns out that the actual scientific man is the prototype of the mass-man. Not by chance, not through the individual failings of each particular man of science, but because science itself- the root of our civilisation- automatically converts him into mass-man, makes of him a primitive, a modern barbarian.

The fact is well known; it has made itself clear over and over again; but only when fitted into its place in the organism of this thesis does it take on its full meaning and its evident seriousness.

Experimental science is initiated towards the end of the XVIth Century (Galileo), it is definitely constituted at the close of the XVIIth (Newton), and it begins to develop in the middle of the XVIIIth. The development of anything is not the same as its constitution; it is subject to different conditions. Thus, the constitution of physics, the collective name of the experimental sciences, rendered necessary an effort towards unification. Such was the work of Newton and other men of his time. But the development of physics introduced a task opposite in character to unification. In order to progress, science demanded specialisation, not in herself, but in men of science. Science is not specialist. If it were, it would ipso facto cease to be true. Not even empirical science, taken in its integrity, can be true if separated from mathematics, from logic, from philosophy. But scientific work does, necessarily, require to be specialised.

It would be of great interest, and of greater utility than at first sight appears, to draw up the history of physical and biological sciences, indicating the process of increasing specialisation in the work of investigators. It would then be seen how, generation after generation, the scientist has been gradually restricted and confined into narrower fields of mental occupation. But this is not the

important point that such a history would show, but rather the reverse side of the matter: how in each generation the scientist, through having to reduce the sphere of his labour, was progressively losing contact with other branches of science, with that integral interpretation of the universe which is the only thing deserving the names of science, culture, European civilisation.

Specialisation commences precisely at a period which gives to civilised man the title "encyclopaedic." The XIXth Century starts on its course under the direction of beings who lived "encyclopaedically," though their production has already some tinge of specialism. In the following generation, the balance is upset and specialism begins to dislodge integral culture from the individual scientist. When by 1890 a third generation assumes intellectual command in Europe we meet with a type of scientist unparalleled in history. He is one who, out of all that has to be known in order to be a man of judgment, is only acquainted with one science, and even of that one only knows the small corner in which he is an active investigator.

He even proclaims it as a virtue that he takes no cognisance of what lies outside the narrow territory specially cultivated by himself, and gives the name of "dilettantism" to any curiosity for the general scheme of knowledge.

What happens is that, enclosed within the narrow limits of his visual field, he does actually succeed in discovering new facts and advancing the progress of the science which he hardly knows, and incidentally the encyclopedia of thought of which he is conscientiously ignorant. How has such a thing been possible, how is it still possible? For it is necessary to insist upon this extraordinary but undeniable fact: experimental science has progressed thanks in great part to the work of men astoundingly mediocre, and even less than mediocre. That is to say, modern science, the root and symbol of our actual civilisation, finds a place for- the intellectually commonplace man and allows him to work therein with success. The reason of this lies in what is at the same time the great advantage and the gravest peril of the new science, and of the civilisation directed and represented by it, namely, mechanisation. A fair amount of the things that have to be done in physics or in biology is mechanical work of the mind which can be done by anyone, or almost anyone. For the purpose of innumerable investigations it is possible to divide science into small sections, to enclose oneself in one of these, and to leave out of consideration all the rest. The solidity and exactitude of the methods allow of this temporary but quite real disarticulation of knowledge. The work is done under one of these methods as with a machine, and in order

to obtain quite abundant results it is not even necessary to have rigorous notions of their meaning and foundations.

In this way the majority of scientists help the general advance of science while shut up in the narrow cell of their laboratory, like the bee in the cell of its hive, or the turnspit in its wheel.

But this creates an extraordinarily strange type of man. The investigator who has discovered a new fact of Nature must necessarily experience a feeling of power and self-assurance . With a certain apparent justice he will look upon himself as "a man who knows." And in fact there is in him a portion of something which, added to many other portions not existing in him, does really constitute knowledge. This is the true inner nature of the specialist, who in the first years of this century has reached the wildest stage of exaggeration. The specialist "knows" very well his own tiny corner of the universe; he is radically ignorant of all the rest.

Here we have a precise example of this strange new man, whom I have attempted to define, from both of his two opposite aspects. I have said that he was a hu product unparalleled in history. The specialist serves as a striking concrete example of the species, making clear to us the radical nature of the novelty. For, previously, men could be divided simply into the learned and the ignorant, those more or less the one, and those more or less the other. But your specialist cannot be brought in under either of these two categories. He is not learned , for he is formally ignorant of all that does not enter into his speciality; but neither is he ignorant, because he is "a scientist," and "knows" very well his own tiny portion of the universe. We shall have to say that he is a learned ignoramus, which is a very serious matter, as it implies that he is a person who is ignorant, not in the fashion of the ignorant man, but with an the petulance of one who is learned in his own special line.

And such in fact is the behaviour of the specialist. In politics, in art, in social usages, in the other sciences, he will adopt the attitude of primitive, ignorant man; but he will adopt them forcefully and with self-sufficiency, and will not admit ofthis is the paradox-specialists in those matters. By specialising him, civilisation has made him hermetic and self-satisfied within his limitations; but this very inner feeling of dominance and worth will induce him to wish to predominate outside his speciality. The result is that even in this case, representing a maximum of qualification in man-specialisation- and therefore the thing most opposed to the mass-man, the result is that he will behave in almost all spheres of life as does the unqualified, the mass-man.

This is no mere wild statement. Anyone who wishes can observe the stupidity of thought, judgment, and action shown to-day in

politics, art, religion, and the general problems of life and the world by the "men of science," and of course, behind them, the doctors, engineers, financiers, teachers, and so on. That state of "not listening," of not submitting to higher courts of appeal which I have repeatedly put forward as characteristic of the mass-man, reaches its height precisely in these partially qualified men. They symbolise, and to a great extent constitute, the actual dominion of the masses, and their barbarism is the most immediate cause of European demoralisation. Furthermore, they afford the clearest, most striking example of how the civilisation of the last century, abandoned to its own devices, has brought about this rebirth of primitivism and barbarism.

The most immediate result of this unbalanced specialisation has been that today, when there are more "scientists" than ever, there are much less "cultured" men than, for example, about 1750. And the worst is that with these turnspits of science not even the real progress of science itself is assured. For science needs from time to time, as a necessary regulator of its own advance, a labour of reconstitution, and, as I have said, this demands an effort towards unification, which grows more and more difficult, involving, as it does, ever-vaster regions of the world of knowledge. Newton was able to found his system of physics without knowing much philosophy, but Einstein needed to saturate himself with Kant and Mach before he could reach his own keen synthesis. Kant and Mach- the names are mere symbols of the enormous mass of philosophic and psychological thought which has influenced Einstein- have served to liberate the mind of the latter and leave the way open for his innovation. But Einstein is not sufficient. Physics is entering on the gravest crisis of its history, and can only be saved by a new "Encyclopaedia" more systematic than the first.

The specialisation, then, that has made possible the progress of experimental science during a century, is approaching a stage where it can no longer continue its advance unless a new generation undertakes to provide it with a more powerful form of turnspit.

But if the specialist is ignorant of the inner philosophy of the science he cultivates, he is much more radically ignorant of the historical conditions requisite for its continuation; that is to say: how society and the heart of man are to be organised in order that there may continue to be investigators. The decrease in scientific vocations noted in recent years, to which I have alluded, is an anxious symptom for anyone who has a clear idea of what civilisation is, an idea generally lacking to the typical "scientist," the high-point of our present civilisation. He also believes that

civilisation is there in just the same way as the earth's crust and the forest primeval.