IN reviewing the 1926 meeting of the British Association for the Advancement of Science, Professor Julian Huxley, grandson of the great Professor Thomas E. Huxley, laid particular stress as to the marked tendency in the addresses and discussion to apply the method of science to political, social and economic problems and at the same time to adopt "a humanistic scale of values", or, in other words, to apply to the solution of such problems the principles of "scientific humanism."

Professor Huxley is not the only prominent exponent of this "scientific humanism". In a new book *Science and the Modern World*, described by many philosophical critics as "epoch-making", Professor A. N. Whitehead repeatedly speaks of the same scientific movement, attaches to it great significance, and connects it with his own important doctrine of "organic mechanism".

What, let us ask, is scientific humanism and what organic mechanism? What is novel and vital in either of these doctrines or attitudes? What are their respective contributions to the stock of modern ideas, scientific and philosophical?

Let Professor Julian Huxley furnish a few introductory remarks to the attempt at interpretation and comment that is to follow. He wrote:

"Broadly speaking, there exist two main competing Weltausschauungen in current thought—that which, however, modified, is a survival of the religious-philosophical outlook of the later Middle Ages, and another more realist system of which different partial manifestations have been the humanism of the Renaissance, the rationalism of the eighteenth century, and the modern scientific outlook. However, it is only in very recent years that this system could become even approximately complete. Before Darwin it could not take in the realm of living things; before the rise of
psychology it could not link up with the study of mind; before the rise of anthropology and sociology, human behaviour and human institutions were beyond its grasp. The Renaissance humanism was incomplete because it took little account of Science; the eighteenth-century rationalism had not yet understood the limitations of reason; and the scientific philosophy of the late nineteenth century was seeking to compress all phenomena into the categories prescribed by physics and chemistry.

The new, the realistic and humanist system of thought, we are assured, takes into due account both the limitations and the highest potentialities of the human spirit. Its humanism is not sentimental or arbitrary, but strictly scientific, while its science is not dry, narrow, thin, prosaic, but rich, warm, humanistic.

These are large claims, and they should not be accepted without adequate support.

In the first place, it appears, scientific humanism and organic mechanism are at war with the old so-called "scientific materialism" and take the position that spiritual and religious values are as real and vital as the values recognized by the exact sciences. Professor Whitehead says, for example, that "In regard to the aesthetic needs of civilized society the reactions of science have so far been unfortunate. Its materialistic basis has directed attention to things as opposed to values. This misplaced emphasis coalesced with the abstractions of political economy, which are in fact the abstractions in terms of which commercial life is carried on. Ultimate values were excluded."

As to religion, science has been either openly hostile or indifferent toward it, yet Professor Whitehead says "the fact of the religious vision, and its history of persistent expansion, is our one ground for optimism. Apart from it human life is a flash of occasional enjoyment lighting up a mass of pain and misery, a bagatelle of transient experience".

Finally, as to appreciation of beauty and of the variety and richness of value, Professor Whitehead writes:

"There is something between the gross specialized values of the practical man and the thin specialized values of the mere scholar. . . . When you understand all about the sun and all about the atmosphere and all about the rotation of the earth, you may still miss the radiance of the sunset. There is no substitute for the direct perception of the concrete achievement of a thing in its actuality. We want concrete fact with a high light thrown on what is relevant to its preciousness."
We are told by Professor Whitehead expressly and by implication, in a hundred different variations, that the man of science and the rationalists and skeptics of the 19th century were too materialistic, too narrow, too cold and too contemptuous of religion, of aesthetics, of philosophy and of the humanities.

It is permissible at this point to ask on what evidence such sweeping assertions as these can possibly be based. Certainly Darwin, Huxley, Spencer, Tyndall, Wallace, Haeckel, Lyell, Comte, Harrison and the philosophic utilitarians were not hostile or indifferent to philosophy, art, moral values and even to sincere religious speculation. None of the thinkers named were "materialists"; they knew and insisted that matter and spirit are merely convenient words descriptive of unknown if not unknowable entities. If they were agnostics, it was because they did not care to pretend to the possession of knowledge they did not have, or to use words without definite meanings. They never dreamt of disputing the necessity of high lights on concrete facts if the high lights were available. They never denied the importance of research and reflection in the hope of obtaining high lights. They never sinned against the beauty, the preciousness, the significance of things in all their ascertainable actuality.

Still, if they missed something vital that was or is knowable or known, or at least, accessible, it is but just to emphasize that fact and to correct their incomplete and erroneous ideas or generalizations.

We turn, accordingly, to Professor Whitehead's positive doctrine, to his "alternative philosophy of science in which organism takes the place of matter." Here it is in a nutshell.

Science is becoming the study of organisms. There are plenty organisms in nature which are incapable of further analysis. A primary organism is the emergence of some particular pattern in the unity of a real event. Of course, the conception of an organism includes the concept of the interaction of organisms. The event has an intrinsic and extrinsic quality; the event is something in itself and at the same time it is related to, and modified by, other events. Value emerges by reason of the various entities constitutive of the event and their togetherness, while the importance of the value of an event depends on the property called endurance or reiteration. There is a pattern in the event regarded as a totality and there is a pattern in each part of the event. No value can be ascribed to the underlying activity; it
is found only in the matter of fact events of the real world. Ideal situations are devoid of intrinsic value, but are valuable as elements in purpose.

"An individual entity, whose own life-history is a part within the life-history of some larger, deeper, more complete pattern, is liable to have aspects of that pattern dominating its own being, and to experience modifications of that larger pattern reflected in itself as modifications of its own being."

For example, the individual in society is a real entity related to other entities and modified by them. He may feel the reactions of the other entities, and of the social organism as a whole, as a modification of his own being. His value arises out of his own particular personality and quality, and qualities as acted upon by other personalities and as reacting to them and to himself. There is a pattern of human conduct which is at once individual and social. The value of a given moral action or omission is concrete, not abstract, yet we can think of ideal situations as mirrors of a purpose. We cannot improve individual conduct or social relations unless we have a pattern to guide us, and that pattern cannot be imposed from without.

These propositions are very abstract and difficult, but the difficulty is due more to Dr. Whitehead's style than to the quality and character of his ideas. What he mans to stress throughout the argument is the existence of purpose and pattern in and behind events, so that neither cosmic nor human existence is a result of mere chance. It follows that if we wish to live up to the purpose and pattern, we must understand events in their intrinsic as well as extrinsic relations, and as part of other events. Value is nonexistent apart from organic patterns, enduring, recurrent patterns. Science may isolate and study only this or that aspect of the organic mechanism, but it must not overlook the essential pattern, the organism, in and behind the aspects.

What are the implications of the doctrine thus summarized, and what legitimate deductions are to be drawn therefrom?

One of the most important deductions is that the search for values cannot be left to the sciences alone, but must be participated in by philosophy and by religion. Another deduction is that there is no conflict between human ethics and cosmic ethics, and that our ideals and our noblest conceptions are as real and valid as the things dealt with by the physicists, chemists and biologists. Talk of lower and higher elements in human nature is contrary
to the doctrine of organic mechanism. Evolution for man, is the increasing manifestation of an original pattern and the ever more successful adaptation to the social environment. Materialism, says Professor Whitehead, somehow suggested struggle for existence, selfishness, aggression, division, indifference to the weak and unfortunate. Organic mechanism suggests co-operation, sympathy, solidarity, pursuit of the common good and of visions of moral beauty and harmony.

It is interesting to glance at Dr. Whitehead's definitions of religion and God as arrived at from the standpoint of his philosophy or organic mechanism. "Religion," he writes, "is the vision of something which stands beyond, behind and between the passing flux of immediate things; something which is real and yet waiting to be realized; something which is a remote possibility and yet the greatest of present facts; something that gives meaning to all that passes, and yet eludes apprehension; something whose possession is the final good and yet is beyond all reach; something which is the ultimate ideal and yet the hopeless quest."

"Religion is the reaction of human nature to its search for God. . . . The immediate reaction of human nature to the religious vision is worship. . . . That vision claims nothing but worship, and worship is a surrender to the claim for assimilation, urged with the motive force of mutual love. . . . That religion is strong which in its ritual and its modes of thought evokes an apprehension of the commanding vision."

And what have the exponents of organic mechanism and scientific humanism discovered in their search for God? Professor Whitehead objects to the paying of "metaphysical compliments" to God. If, he says, God is conceived as the foundation of all ultimate activity, then the fatal difficulty presents itself that such a God is the origin of evil as well as of good. The supreme ruler of a drama is responsible for the weaknesses of the drama as well as for its merits. No; God is to be conceived as "the ultimate Limitation", "the ultimate or rationality". God is not concrete, but he is the ground for concrete actuality; the nature of God is the ground for rationality. He is the supreme ground for limitation and for value; it is within his nature to divide the good from the evil and to establish reason within her proper dominions.

Professor Whitehead adds that "what further can be known
about God must be sought in the region of particular experiences, and therefore rests on an empirical basis”.

But how can particular experiences and empirical facts help us to understand the ultimate irrationality and the ultimate limitation? How can things interpreted by reason and logic throw any light on the nature of God, for which “no reason can be given?” And why talk of good and evil in connection with irrationality?

We fear that Professor Whitehead is not clear in his own mind on the subject of the scientific conception of God. He seems to contradict himself in recognizing an empirical basis for something that cannot be grasped and conceived, or in talking of ultimate ideals at the end of a hopeless quest. Hopeless quests lead nowhere.

We confess we are unable to perceive any advantage in Dr. Whitehead’s definition of God over the older definition of an unknowable, incomprehensible, inscrutable power whence all things proceed. We confess, further, that the “value” of the Whitehead definition from any ethical or social point of view is negligible, if not actually negative. It is impossible to worship Dr. Whitehead’s God, impossible to imagine his relation to nature or the relation of nature to him—or it. One cannot worship or pray to an abstract metaphysical formula. Frankly, once you give up the naive, anthropomorphic notion of God—the supreme ruler of all things, the creator of all things, the cause of all things, the final arbiter of all things, then the conception or theory of God is shorn of all moral and practical value. We may assume a purpose and meaning in nature and a source of that purpose and meaning. We can form no notion of the purpose or of its source, though as metaphysical abstractions both may serve dialectic ends. But worship, prayer, communion, and the like imply a totally different notion of God, and it is idle to attempt a denial of that fact.

On the other hand, what is there in what is now often sneered at as “Nineteenth century rationalism” or “Naive agnosticism” that stands in the way of full acceptance by the agnostics and free-thinkers of scientific humanism? To reject Dr. Whitehead’s conception of God is not necessarily to embrace a crude, narrow mechanical theory of the universe. One may reject both mechanism and vitalism on the simple, common-sense ground that neither term really means anything. Neither alleged conception explains
reason, instinct, morality, altruism, self-sacrifice, ideals of great men, noble deeds of common and simple men. Scientific humanism, to be scientific, must be based on observed facts, not on metaphysical abstractions or strained subtleties. To say that science is "reverting" to humanism is to misrepresent the situation. At no time has true science been anti-humanistic. It was sheer and egregious misapprehension to impute the evolutionists, for example, the belief in a ruthless struggle for existence, or in a cold, unimaginative, unsympathetic commercialism. The ethics of the evolutionary thinkers and the philosophical utilitarians were never lower than the ethics of the theologians or the metaphysicians.

It is true, however, that some men of science are today taking a deeper and greater active interest in religion and in philosophy than did all their predecessors. This is a healthy tendency, since both religion and philosophy have everything to gain, and nothing to lose from such interest, and since men of science are bound qua men of science,—to determine whether or not religion and philosophy pursue scientific methods and have something more than baseless fancies and guesses to offer to humanity.

After all, religious thinkers must deal with religious experiences and religious phenomena, and must deal with such precisely as men of science deal with the phenomena and experience of the physical world. You can talk about "mysteries" for another millennium without advancing by one inch the cause of religion. Advancement is possible only where the facts are better studied, where the body of facts is constantly increased by new observations and where theories are formed carefully to account for the known facts. If, in addition to science, we can enrich ourselves by developing a scientific religion and a scientific philosophy, so much the better for humanity. Meantime it is important to recognize the truth that humanity, beauty, moral progress are not dependent upon any particular religious conception, but are quite compatible with agnosticism and a suspension of judgment concerning the origin, significance and value of certain sentiments and emotions called religious. We may change terms and interpretations without changing a single fact or ignoring a single bit of evidence.

There is, alas, reason to fear that the new humanitarians and the exponents of the theory of organic mechanism have not taken the pains to re-read and restudy the views of the thinkers of
the 19th century. This, in truth, is the irritating and great difficulty with most writers on religion and philosophy. They fight windmills; they set up little straw figures and proceed to knock them down; they imagine opinions and debit their opponents with them in order to refute those opinions with an air of virtuous triumph. There is something new and perhaps valuable in organic mechanism, but that something is not epoch-making or revolutionary. As to scientific humanism, it seems to be nothing but an alluring phrase that represents no novel or positive idea. Humanism is scientific and science can be and has been an instrument of goodness and beauty. Science can be used destructively by predatory and malicious men, but so can common sense. There would be little hope for civilization and progress if science were not humanistic.