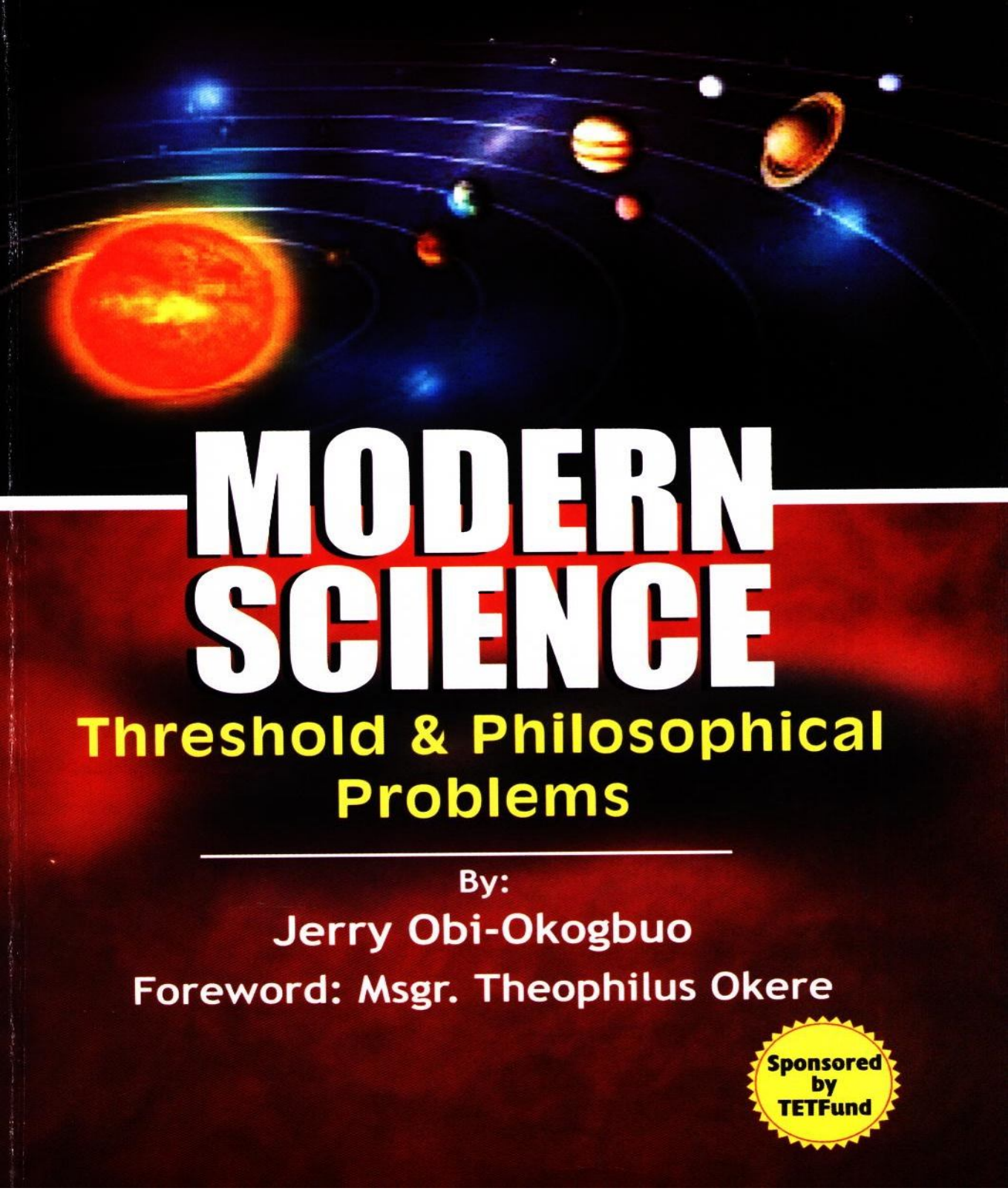

CHAPTER 11

SCIENTISM

The nineteenth century was characterized by the explosion of scientific knowledge. Several disciplines achieved scientific status by this time. Physics and chemistry were particularly significant in developing at this time.

Physics was famed by the development of electricity and heat. In 1800, Volta developed the first electric battery. This ensured the production of continuous current. Later the individual efforts of Hans Christian Oersted, Andre Marie Ampere, Michael Faraday and George Simon Ohm came together into a body of theory which made possible the linking of magnetism and electric current bringing about electromagnetism. The application that followed led to electric lamp (1820), telegraphy (1836), and industrial electrolysis, (1837). In the later part of the century, Maxwell synthesized optics and electromagnetism. The application that followed brought about wireless telegraphy.

The theoretical study of heat and its applications brought about thermodynamics. Watt's steam engine of 1770 resulted from the tradition of *techne* not *theory*. The theoretical study of heat in the nineteenth century enabled engineer Sadi Carnot to formulate his famous principle: "the efficiency of an idealized engine depends only on the temperature of its hottest and coldest parts and not on the substance which drives the mechanism." This led to the greater improvement of machine-engine efficiency. Thermodynamics is based on one fundamental unifying concept, energy. Energy could be derived from mechanical work, heat, electricity, light, etc. The unification of physics under energy appears the greatest achievement of the nineteenth-century science.

The development of chemistry in this century was also rapid and significant. Before the nineteenth century, the concept of "vital force", held back the development. In 1828 however, Woehler produced synthetic urea. This singular feat of producing urea without animal kidney broke down the concept of "vital force". In 1860, Marceline Berthelot produced synthetic acetylene from carbon and hydrogen. By so doing, he demonstrated that there is only one chemistry. With these developments chemistry, soon after, became a major industrial activity with a flourishing branch in metallurgy.

The tremendous success of science and technology and the progress and achievements due to them induced an atmosphere of general well-being and a kind of mythical or uncritical confidence in the limitless power of science to instigate progress in all field. This almost mythical and surely uncritical confidence is called scientism, the scientifically undemonstrated confidence, especially associated with the nineteenth century that science is capable of solving all problems, theoretical or practical, in religion, ethics and politics as in the natural sciences. An action was valued to the extent it was scientific; that is, an action was devalued if it was not scientific. Scientism is dogmatic. It is fiducial since its thesis is scientifically undemonstrated and indeed undemonstrable. It is naïve and uncritical amounting to a mythical knowledge to provide answers to every puzzle and provide solution to every practical difficulty. Scientism takes science as the sole appropriate way to see things; hence Mautner defines it as: "The belief that the methods of the natural sciences are applicable in all inquiry, especially in the human and social sciences"[1]

Scientism reached its peak in the twilights of the nineteenth century and the dawning years of the twentieth century. It has close affinity with positivism which intimately influenced it. August Comte, an avowed positivist, is one of the prominent theoreticians of scientism.

Comte made positivism current through his *Cours de Philosophie Positive* (1842). He must have adopted the term from his teacher Henri Compt de Saint-Simon. Saint-Simon is reputed as the father of positivism and is believed to have used the term first. In using the term Saint-Simon meant to extend the methods of natural science to philosophy. Positivism was influenced by two main philosophical sources: English Empiricism and Enlightenment. There are three main brands of positivism: social positivism with Auguste Comte and John Stuart Mill as the main advocates; evolutionary positivism with Charles Lyell and Charles Darwin as the godfathers; and critical positivism (or empiriocriticism) with Ernst Mach and Richard Avenarious as the Chief theoreticians. There are later developments like neo-positivism or logical positivism with A.J. Ayer, Wittgenstein and Rudolf Carnap featuring prominently. These brands of positivism have their nuances as regards their tenets. Explaining these is not our concern here. Our concern is to show the affinity between scientism and positivism and this is clearly shown in the general theses of classical positivism as articulated by Nicola Abbagnano:

> The characteristic theses of positivism are that science is the only valid knowledge and facts the only possible objects of knowledge; that philosophy is to find the general principles common to all the sciences and to use these principles as guides to human conduct and as the basis of social organization. Positivism consequently denies the existence or intelligibility of forces or substances that go beyond facts and the laws ascertained by science. It opposes any kind of metaphysics and, in general any procedure of investigation that is not reducible to scientific method.[2]

Compare these theses of positivism with those of scientism as given by Ernest Renan and Berthelot, two most zealous exponents of scientism. They hold that science is the only viable authority and that only it can establish authentic truth and provide a new conception of human destiny. To science belongs the material, intellectual and moral organization and direction of society. Science ensures unending progress of society making it ever more virtuous. Experiment is the sole way to unravel the secrets of nature. Miracles are rejected; and God is rendered obsolete and doubtful.

The nineteenth century, consequently, witnessed the ascendancy of atheism. Ludwig Feuerbach espoused an anthropological atheism. The objective was to substitute man for God. Karl Marx espoused a socio-political atheism. He predicted the disappearance of all religion at the emergence of classless society. Marxism is well known for its insistence on the scientific nature of its theory. Frederick Nietzsche espoused a radical atheism. He denied the possibility of even thinking about God. He declared God dead.

Pere Thuillier summed the theses of scientism in three propositions thus:

- Science is the sole authentic knowledge and consequently the best.
- Science provides answers to all theoretical questions, solves all practical difficulties; provided they are formulated in rational terms.
- It is appropriate to entrust to technocrats (science specialists or scientists) the organization and direction of all human affair.

All these brought about a regime of "concordism", the attempt to bolster religious truths by a reliance on scientific truths.

The nineteenth century Church was awed by the ideology of scientism. In reaction she condemned all liberal ideas and developed a deep mistrust of science. To combat scientism, the Church distinguished between what she called "true" and

"false" sciences. True sciences agree with dogma and the Bible. On that basis, the Church combated "false" science leaving "true" science to flourish.

In spite of criticisms, scientism is subtly espoused even till today. All contemporary attempts to present science as supreme, as self-evident and as such without any need of proof, as very fruitful and so infallible, are in the tradition of scientism – though simulated one can say.

REFERENCES

[1]Thomas Mautner (ed.) *Dictionary of Philosophy*, England: Penguin Books, 1999, P.511

[2]Nicolo Abbagnano, "Positivism", *The Encyclopedia of Philosophy*, Paul Edwards (ed.) Vol. 6. London: 1972, P.414