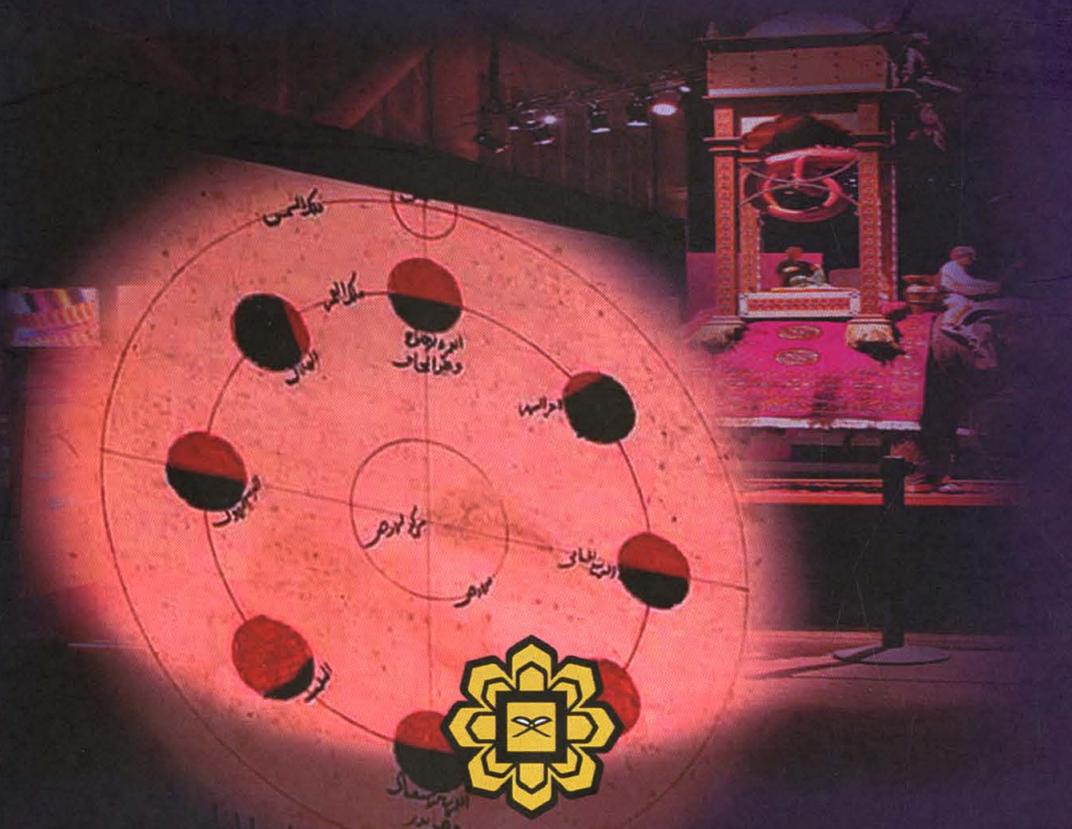


Contributions of Muslim Scientists to Medicine and Related Sciences

Abdi O. Shuriye
Raihan Othman



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CHAPTER ONE

AL-MAJUSI CONTRIBUTION IN THE UNDERSTANDING OF THE CARDIOVASCULAR SYSTEM AND BLOOD CIRCULATION

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1.1 INTRODUCTION

The objective of this chapter is to represent Al-Majusi contributions in cardiovascular system and blood circulation. The chapter refers to the main treatise entitled *Kitab Kamil Sina'ah Tibiyah*, (The Complete Medical Art), written by Ali Ibn Abbas Al-Majusi, and other articles on cardiovascular system and blood circulation. The science of the heart and circulatory system took scientists centuries to comprehend and develop, providing us at the end, with what we know today. The chapter therefore, is an attempt to show how Al-Majusi rectified certain concepts adapted by his predecessors on the same subject. Ali Ibn Abbas Al-Majusi was a Persian physician and psychologist (925-994 C.) He was born in Ahvaz, Iran and The Complete Book of the Medical Art (*Kitab Kamel Al-Sinaá Al-Tibiyah*) is his major work on the subject.

1.2 HISTORICAL TIME LINE

- 1- The Hippocrates (460-370 B.C.) believed that the blood was continuously being produced by the two central organs, the liver and the spleen, it is transferred then to the heart to be cooled or warmed by the air entering the lungs and heart (Farzaneh et al., 2008).
- 2- Aristotle (384-322 B.C.) who gave the name of Aorta to the main artery. He also suggested that the heart has three cavities (ventricle), which Al-Majusi refuted in his book as seen in the next section (Farzaneh et al., 2008).
- 3- Galen (129 C.E) who was the first stating that arteries carry blood rather than air. He also stated that blood flows from the right ventricle to the left ventricle through invisible pores in the septum that separates them (Farzaneh et al., 2008).
- 4- Al-Razi (865-925 C.E): who described arteries, veins and the circulation of the blood. He discussed about the orifices and the valves and agreed with Galen about the pores in the septum (Farzaneh et al., 2008).
- 5- Al-Majusi (925-994 C.E): he gave clear and details description of the heart anatomy, veins and arteries. He refuted some misconceptions such as the existence of a third chamber. He also ignored the idea of invisible pores in the septum in his writing. He was the first to investigate on the capillary system (Farzaneh et al., 2008).
- 6- Ibn Al-Nafis (1210-1285 C.E.): the discoverer of the pulmonary cycle. He stated that septum is thick and solid and there are no pores in it (Farzaneh et al., 2008).