

Contributions of Muslim Scientists to Medicine and Related Sciences

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Contents

| <u>TITLE</u> | |
|--|-----|
| Preface | v |
| Acknowledgment | vi |
| Lists of Contributors | vii |
| Introduction | 1 |
| Chapter 1 Al-Majusi Contribution in the Understanding of the Cardiovascular System and Blood Circulation | 3 |
| Chapter 2 Al-Majusi: The Pioneer in Obstetrics | 7 |
| Chapter 3 Al-Razi Works and Contributions in Neurological Sciences | 12 |
| Chapter 4 Ar-Razi on Gout | 19 |
| Chapter 5 Ali Bin Isa Al-Kahhal: Pioneer in Ophthalmology | 25 |
| Chapter 6 Al-Majusi's Treatment of Physical Diseases Using Drug Therapy and Surgical Manipulation | 30 |
| Chapter 7 Al-Razi's Understanding and Curing of Smallpox and Measles | 35 |
| Chapter 8 Al-Razi's Contribution to the Study of Nexus between Human Mind and Body | 39 |
| Chapter 9 Abu Zayd Ahmed Ibn Sahl Al-Balkhi on Medical Psychology | 45 |
| Chapter 10 Contributions of Ashraf Ali Thanwi to Mental Disease Treatment | 49 |
| Chapter 11 Ibn Zuhr on Diseases and Treatments | 54 |
| Chapter 12 Ibn Al-Jazzar on Fever | 59 |
| Chapter 13 Ibn Al-Khatib and his Theory of Contagion | 64 |
| Chapter 14 Ibn Al-Nafis Contribution in Urology Progress Practices | 67 |
| Chapter 15 Ibn Al-Quff on Preventive Medicine | 72 |
| Chapter 16 Ibn Sina on Aromatherapy | 76 |
| Chapter 17 Studies in Gynaecology in Zad Al-Musafir Wa Qut Al-Hadir of Abu Jaafar Ibn Al-Jazzar | 81 |
| Chapter 18 Contributions of Ibn-Sina in Pharmaceutical Sciences | 88 |
| Chapter 19 The Contribution of Ibn Al-Baitar in Medicine | 94 |
| Chapter 20 The Contribution of Saghir Akhtar in Pharmaceutical Science | 99 |
| Chapter 21 The Glorious Contribution of Ibn Al-Quff on Cardiology and Embryology as Well as Other Surgical Matters | 104 |
| Chapter 22 Success Journey of Mehmet Oz in Cardiothoracic Surgery | 109 |

| | | |
|------------|---|-----|
| Chapter 23 | Abu Al-Qasim Al-Zahrawi's Contribution to Neurosurgery | 115 |
| Chapter 24 | Al-Zahrawi Method on Inflammatory Swellings and Tumours Surgery | 120 |
| Chapter 25 | Oculist's Contributions to Cataract Operation | 126 |
| Chapter 26 | Al-Zahrawi Contribution to Medical Instruments | 131 |
| Chapter 27 | Al-Zahrawi's Explanation on Bone Fractures and Its Surgical and Non-Surgical Treatments | 137 |
| Chapter 28 | Inhalation and Oral Anesthetics: Views of Selected Muslim Physicians | 144 |

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).