

## Opinion

## THE CONTRIBUTION OF IRANIAN SCIENTISTS TO WORLD CIVILIZATION

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A picture Avicenna; painted by Morteza Katouzian, a well-known Iranian painter.

**H**istory of science reveals the progress of civilization in different nations. Research on the history of science discloses the achievements of scientists to acquire knowledge and delve into the reality of the world of being. In the Global Voices essay series of the *Science* magazine, researchers from around the world are invited to provide a regional view of the scientific enterprise.

In an article entitled “Science in the Arab World: Vision of Glories Beyond” (in *Science*,

June 3<sup>rd</sup>, 2005, Volume 308, page 1416 – 1417), Dr. Wasim Maziak is charged with the task of describing the challenges facing the Arab world in their quest to accomplish scientific prosperity. Dr. Maziak has stated that “one of the knowledge shocks that ignited the Renaissance was delivered by Ibn-Sina (Avicenna 980 to 1037 AD), whose *Kitab Al-Shifa* (‘the book of healing’) introduced the medieval Europe to the principles of logic and their use to gain knowledge”.<sup>1</sup> Dr. Maziak has accurately described many of the obstacles that have led to the decline of scientific achievements in the Arab world.

There is a failure in Dr. Maziak’s analysis by calling Razi, Ibn-Sina, and Khawrazmi as Arab scientists. This false statement only widens the gap between the Middle-East and the western world. There could be no doubt on the fact that Razi (Rhazes), Ibn-Sina (Avicenna), and Khawrazmi (Khwarizmi) were Iranian (Persian) and not Arab scientists. Dr. Maziak’s sincere attempt to lump these scientists under the label of Arab-Islamic scholars is unfortunately flawed for a couple of reasons; a very important point is that, the Arabic language was the *lingua franca* of these scientists<sup>2</sup> era and allowed for the free exchange of scientific knowledge from Greece and Rome to Iran, India, and even to places as far as China. There is no doubt that for this reason, scientists were writing in Arabic, while not being Arab, like in the present time, all scientists write in English. One could argue that it is as offensive to Iranians, as it would be to the English, if everyone claimed Sir Isaac Newton was a Frenchman. Not that there is anything wrong with being French, Arab, or from any other nations, but the incorrect label abolishes a significant part of Iranian contribution to the advancement of science.

Professor Manfred Ullmann of Tubingen pointed out that “Islamic medicine is a medical system, which was introduced into Arab countries

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in the ninth century AD and was practiced throughout the Middle Ages and right up to modern times. This system is widely known under the term “Arabian Medicine,” but many doctors, among them some of the most outstanding like Al-Razi (Rhazes), Al-Majusi (Haly Abbas), and Ibn-Sina (Avicenna) were Persians, not Arabs.”<sup>3</sup>

Mohammad Bin Musa Al-Khawrazmi, mathematician, astronomer, and geographer, was born around 770 AD in a small town located in the South of the river Oxius in Khawrazm—a town in the Khorasan Province of Iran at that time. It is widely agreed that Avicenna was born in Afshana of Bukhara City of Iran (now part of Uzbekistan). He grew up and studied in Iran. Avicenna never stepped a foot out of Iran. He was not only a physician, but was also a poet and philosopher who, apart from practicing medicine and writing his books both in Persian and Arabic, became a Vazir (Vizier)—a Cabinet member in Amir Shamsud Dawala’s government of Iran. Avicenna has written some of his books in Persian. Among these books is *Daneshnameh-e Alaii*. He, who is also known as Sheik Al-Ra’ees (means “master of masters”), wrote this book in Isfahan between 1022 and 1036 AD in the name of Ala Al-Doleh Kakuyeh.<sup>4</sup> This book contains some interesting points and original Persian words, and is a summary of his best-known books on wisdom and philosophy containing discussions on logics, divinity, natural sciences (physics), geometry, astronomy, and music. The Persian treatise on sphygmology, which was definitely written by Avicenna, was published in 1939 by Sayed-Mohammad Meshkat.<sup>4</sup> The Persian treatise *Me’radjeh* (Ascension) is written by Avicenna. In the above-mentioned few Persian works, Avicenna has coined and used certain words, which have played an important role in the Persian literature. If Avicenna was not Iranian, it would not have been possible for him to write even one sentence in Persian at that time or become a Vazir in an Iranian dynasty.

These points have been emphasized by several science historians.<sup>5</sup> Avicenna’s Persian heritage, including his Persian language and his Persian works, are well-described in Professor Muntner’s analyses and reports on Persian medicine and its relation to the Jewish and other medical sciences.<sup>6</sup> Adding the prefix “Al-” to the names of scientists or books does not make them Arabic in origin. Al-Razi (Rhazes, 864 – 930 AD) is also Persian, born at Rayy, South of Tehran, Iran.<sup>7, 8</sup> Razi did most of

his seminal works in the city of Rayy and finally died in Rayy after his return from Baghdad.

The collaboration of the middle-eastern world of science and politics requires a clear understanding of history. Lumping these scientists into narrow label of “Arab-Islamic” is historically inaccurate. This label does not appreciate the rich diversity of eastern scholars who have contributed to science in an era where science was essentially non-existent in the western world and later invaluable to its Renaissance.<sup>9</sup> We need to educate the western world and ourselves before we can move forward.

At present, having a look at any of encyclopedias<sup>10</sup> will clarify that scientists such as Razi, Avicenna, and Khawrazmi were born, grew-up, and educated in Iran. These and other scientists have written their books and treatises in Arabic, since it was the accepted language for scientific communication in that era. Our failure to clearly separate the origin of scientists and their historic nationality will ultimately contribute to the confusion that currently exists in the western world, predominantly in the United States, that we are all Arabs.

There are so much evidence supporting the contribution of Iranian scientists to medicine of the Arab world. Under the topic of “the origin of Bimaristans in Islamic Medical History,” it is written that “The word ‘*bimaristan*’ is of Persian origin and means hospital, with ‘*bimar*’ meaning disease and ‘*stan*’ meaning location or place; hence, location or place of disease.”<sup>11</sup> The author of this treatise was an Arab, who still has not learned that in Persian, the word ‘*bimar*’ stands for ‘patient’ and not ‘disease’. Based on the existing evidence, such as that mentioned above, one can consider the extent of contribution of Iranian scientists to medical sciences in the Islamic world to be significant and no one should call all of those scientists Arab.

Finally, it is very interesting to note that Dr. Maziak blamed the editorial staff of the *Science* magazine for his mistake and in response to letters to the editor wrote:

“I did not indicate or mean to imply that early scholars of the golden era were all Arabs or Muslims. The figure legend referring to Avicenna as an Arab scientist and philosopher was inserted by the editorial staff, and I did not pay attention to this mistake, when I revised the final version.”<sup>12</sup> I would like to conclude by one quote from another letter to the editor of *Science*: “Although the

genuinely sincere attempts by Dr. Maziak to offset contemporary ignorance of and/or bias against the important role played by Asian and the middle-eastern scientists is to be commented, his misrepresentation of the history of science does not help.<sup>13</sup>

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