

CONTRIBUTIONS OF MUSLIM TURKS TO GEOGRAPHY

Dr. N. AKMAL AYYUBĪ

Institute of Islamic Studies,
Aligarh Muslim University,
Aligarh (U.P.)

Islam gave a new civilization to the Turks who were always great admirers of sciences. The last words of Sultan Osman to his son Orhan —“Be the supporter of the faith and the protector of the sciences ”— was religiously observed. Turks also became faithful of those nations who had contributed in various fields of sciences and like the Arabs ¹ they have distinguished themselves in the science of geography. They have a definite stage in the history of this branch of knowledge and their contents are amazingly vast. Their effects are also far-reaching but their contributions are not well known to scholars as it should be.

Geography is a science which deals with the areal differentiation of the earth's surface as shown in the character, arrangement, and interrelations over the world of such elements as climate, elevations, soil, vegetation, population, land use, industries, national and political entities, and of the unit areas formed by the complex of these individual elements ². Turkish interest in geographical matters was no doubt partly due to the environments in which the Turks were brought up. They were bound to have a knowledge of the fixed stars, the movements of the planets along with the other heavenly bodies and the changes of weather for the purposes of travel over the vast expanses of the mountains, plateaus and deserts, whether for purposes of wars or peaceful migrations. They had to move, accompanied by their precious flocks and herds, from time to time in search of fresh and better pastures. It

¹ For details see my articles on “*Arab and geography*” and “*Muslim contributions to Cartography*” both published in *Al-Islam of Karachi*, Vol. 11, No. 8 (April 15, 1954) pp. 58-59 and Vol. 11, No. 12 (June 15, 1954) pp. 94-96 respectively.

² *The Random House Dictionary of the English Language*, Delhi, 1972, p. 552.

was also necessary for them to acquire the knowledge of plants and wild animals. Under these circumstances; at an early stage, the science of geography became as a subject of interest among the Turks. The institution of the Holy Pilgrimage (*Hajj*), the orientation of the mosques towards Makkah and the need for ascertaining the direction of the Kābeh at the time of prayers also gave religious impetus to the Muslim Turks for the study of geography. Wars and invasions, political and administrative requirements of expanding Turkish world, as well as migrations from one place to another, also helped in creating further interest in the science of geography which received a new impetus also.

The Uigur Turks of Central Asia who were advanced and enjoyed a very high level of culture and civilization had shown a great interest in geographical matters even during the ancient period. It is said that an Uigur Turkish work deals with the movements of the stars in relations to the sun³ and another Uigur Turkish work describes the revolutions of the stars⁴. But one of the earliest Turkish geographer is Mahmud Kashghar. He is a well-known lexicographer but had drawn a world map on linguistic basis. Giving prominence to the Turkish-speaking regions, he had placed Kashghar at the centre of the world with other regions receding to the periphery⁵. It is an unusual and circular world map⁶ which was drawn by him for this masterpiece work entitled *Divanu Lughat-it-Turk*⁷. The book is a remarkable dictionary of the language of the Turks which does not only give an extensive Turkish vocabulary from the 11th century but illustrates the usage of words with quotations from many pieces of literature of the Turks. All meanings of the Turkish words are given in Arabic; and the arrangement of words is in such a peculiar order that the finding of any particular word is difficult for any person not thoroughly familiar with the entire contents. His work, completed in 1073 A.D., is important not only from the point of view of Turkish language and literature, but from the point of view of the history of Turkish culture as well. His map of the world is beautifully coloured which is reproduced

³ Turkish Architecture, translated by Prof. Dr. Ahmet Edip Uysal, Ankara, 1965, 2 .

⁴ Ibid.

⁵ S. Maqbul Ahmad, *Kharita in New Encyclopaedia of Islam*, Vol. II, p. 1080.

⁶ *History of Cartography*, edited by R.A. Skelton, London, 1964, p. 209.

⁷ It was published by *Türk Dil Kurumu* of Ankara in 1940. The *History of Cartography* of Leo Bagrow which was revised and enlarged by R.A. Skelton and was published in 1964 in London also has its plate but it is only black and white.

in original by Besim Atalay in the second volume of the modern Turkish translation of this dictionary. The Turkish settlements, their neighbouring countries and peoples are all prominently shown. A considerable portion of Central Asia as well as China and North Africa are also included but little beyond the Volga in the west. This is perhaps due to this fact that it was drawn before the Turks began to move to their west. This work also covers geographical descriptions of various places such as cities, mountains, rivers, etc.

The geographical literature produced in Turkish language by West Asian Turks was in the beginning on cosmography in the style of Books of Marvels which treat of the wonders of creation. Very famous among this type of Turkish works are the *Durr-i Meknûn* and *Acaibu'l Mahlukât* of Yazijioghlu Ahmad Bijan (d. 1456) who was the brother of the well-known Ottoman poet of early period named Yazijioghlu Mehmed (d. 1453)⁸. The latter work is merely an abridged translation of Qazwini's famous Arabic work of the same name in which more emphasis is given to "wonders" than the scientific knowledge. The *Acaibu'l-Mahlukât* of Qazwini was translated several times into Turkish⁹ along with the other books on cosmography like *Haridat al-Acaib* of Ibn al-Wardi (d. 1457). This type of literature was liked too much by the Turks and some translators of such works like 'Ali bin 'Abd al-Rahman and others have added new materials to their translations. The extracts of *Takwim al-Buldân* of Abu'l-Fista was also rendered in Turkish by Sipahuzade Mehmed bin 'Ali (d. 1588) who has also produced a new Arabic edition of the same book with the materials arranged in alphabetical order along with his own additions. He is also translator of *Kanun al-Mas'udi* and other works of Arabic language. Mehmed bin Omer bin Bayezid bin 'Aşık (b. 1555) is also a famous translator of the earlier geographical works. His *Menâ-azîr al-'Awalim* which was completed in 1598 consists of two parts. The first part deals with the "world above", that is, heaven and celestial bodies and the second part describes "world below," that is the earth and its inhabitants. The book contains geographical materials on oceans, island, lakes, rivers, springs, mountains, cities etc. which are basically translation of medieval Arabic geographical works of Ibn Khurrdazbheh, Ibn al-Cavzi, Yâkut, Kazwîni, Hamdullah Mustawfi and Ibn al-Nardi but with supplements of the translator's knowledge on Anatolia, Rumelia, Hungary. Minerals, plants,

⁸ E.J.W. Gibb, *A History of Ottoman Poetry*, Vol. I, London, 1958, p. 392.

⁹ First translation was done by Rukn al-Din Ahmad.

animals, etc. are also discussed in this book but the most prominent Turkish geographer is Muhiddin Piri Reis (d. 962 A.H./ 1554 A.D.) who had also produced original works in the fields of marine geography and navigation. He was nephew of the famous naval hero and admiral Kemal Reis and himself a Turkish admiral. He knew every corner of the Mediterranean Sea and was the commander of the Turkish fleet blockading the harbour of Alexandria at the time of the invasion of Egypt by the Ottoman Sultan Selim Yavuz. He was also interested in the science of cartography and had completed a map of the world in 1513 A.D. His world map was drawn on a gazelle hide in two parts, of which only the western part is preserved in Topkapı Museum of İstanbul. This portion which is 90 x 65 centimetres in size, depicts the eastern regions of America and the western parts of Africa, Portugal, Spain and the Atlantic Ocean. It includes various coloured pictures, numerous illustrations and relevant notes on the countries, their peoples, animals and plants. This map which is a portolans¹⁰, has a mathematical basis and Piri Reis had used some twenty maps in constructing it, eight of which were new maps of Mappa Mundi¹¹. Four of them were drawn by Portuguese explorers, an Indian one in Arabic and one which was the lost map of Christopher Columbus¹² recording the discoveries made by him during his three voyages. Like the other contemporary maps, it has no lines of longitude or latitude. Nevertheless, we can see two rose-compasses, one in the north and the other in the south. Each of the roses is divided into 32 parts and the division lines are extended beyond the rose frames. Each wind-rose is equal to one sea mile, as is shown in the measurements on the area near the wind-roses¹³. He had drawn the mountains in outlines and the rivers are marked with thick lines. The rocky regions are indicated with black, the sandy and shallow water reddish dots and the rocky parts in the sea which cannot be seen by sailors with crosses. This is, in the words of Prof. Dr. Afetinan, one of the oldest and yet most perfect map of America, drawn by a Turkish admiral¹⁴.

¹⁰ *Portolano* is a term used for all such maps or charts showing the position of points for navigation and is based on the idea of the earth being flat.

¹¹ *Mappa Mundi* is a term used the map of the world.

¹² He was Italian navigator in Spanish service and discover of America in 1492. He died in 1506 A.D.

¹³ Prof. Dr. Afetinan, *The oldest map of America*, Ankara, 1954, p. 27.

¹⁴ *Ibid.*

Piri Reis had also drawn a second world map in 1528 A.D. of which only the portion depicting the western hemisphere is preserved in Topkapı Museum of İstanbul. Its size is 68 x 69 centimeters. It is in colour and has ornamental figures on the margins of the map with explanatory notes. The preserved portion shows the northern part of the Atlantic Ocean and the newly discovered regions of North and Central America. It has four wind-roses and the tropic of cancer is also shown which was not in his first map are bigger than the first. The drawing of the coastlines shows greater improvement in technique and also close resemblance to the modern conception of these areas. The stony and rocky sections are given special care. Dr. Sevim Tekeli has pointed out that a comparison of the two maps shows that Piri Reis had followed the new discoveries very closely¹⁵. In his drawing of maps, Piri Reis had shown only the parts of the world that have been already discovered and had left the unexplored area blank saying that they were as yet unknown. It is also said that he drew maps of the Indian Ocean and the China Sea but none of these seem to have survived.

The book of Piri Reis on marine geography is entitled *Kitab-i Bahriya* which contains 209 chapters with 215 maps, charts and pictures to give exact account of the coasts and islands of the Mediterranean and the Black Sea along with a description of the seas. It is said that his models were Italian portolans charts and other navigational handbooks whose major part have disappeared. Basically the book is a kind of guide of navigation and is based on his personal observations. He gathered all previous informations on the subject but added to it other practical knowledge necessary for sailors on the most important coastal routes, and drew large maps for every chapter. In this way the book came out not only as a mere guide book, but also it became the greatest contemporary portolans with the most advanced technique of cartography. His *Kitab-i Bahriya* was first dedicated to the Ottoman Sultan Selim I in 1521 A.D. but after his death, Piri Reis prepared a second version with many additional maps, a modified and revised text and a poetical preface of newly 1200 verses in Turkish language on the lore of the sea and the sailor which he presented in 1525 A.D. to Ottoman Sultan Süleyman. His own ideas about cartography are recorded in his preface of the book in which he says that a map is a skin on which the shape of the sea and winds are drawn and making maps requires profound knowledge and specification and the slightest error in drawing a map makes the map useless. He has also said

¹⁵ *Dictionary of Scientific Biography*, New York, 1974, X, pp. 616-9.

that he had made use of all the known maps including those on the Chinese Seas and the Indian Ocean which were unknown in the Western World at that time.

Piri Reis was one of the most outstanding scholars of his time. Besides his native tongue, he knew Greek, Italian, Spanish and even Portuguese and he had acknowledged his debt to various works in these languages in drawing his maps of the world¹⁶. Experts are of the opinion that the maps drawn by Piri Reis were superior to those made in Europe at the time, in both content and technique¹⁷.

One more important book on marine geography and navigation entitled *Kitab al-Muhit fī 'ilm al-aflāk va'l-ahbār* was written by Seydi 'Ali Reis who is commonly called Katib-i Rumi (d. 1562 A.D.). It was completed in 1554 A.D. and is based on the personal experiences of the author as well as of other Arabian sailors. It is like a guide book which deals with Indian Ocean and the African coasts. His other book on geography is *Mirat al-Memalik* which covers India, Afghanistan, Central Asia and Persia and is based on his travels, adventures and his personal observations. The book is the description of his journey to India and, after the unsuccessful Ottoman naval expedition against the Portuguese in the Indian Ocean, his return to the Ottoman Sultan's court in Edirne. *Mirat-i Kaynat* is also his important book. It is said that Katib-i Rumi had drawn several maps for his books but his survived texts are without maps. Yet another Turkish work on marine geography is *Kitab Bahr al-aswad va'l-abyad* (*Book of the Black and White Seas*) written by Sayyid Nuh.

The most important and comprehensive geographical work produced by the Turks is *Cihannuma* of Mustafa ibn 'Abdallah, better known as Katib Chelibi and Chelebi and Haji Khalifa (1017/1608 – 1067 A.H./1656 A.D.). He is very famous for his great encyclopaedia *Kashf-uz-zunun* which is a history of Ottoman literature written in Arabic and has preserved long excerpts from works which have not otherwise survived. His biographical encyclopaedia of famous personalities entitled *Sullam al-Vusul* and his history of the Ottoman Turkish navy entitled *Tuhfat al-Kibār fī Asfar al-Bihār* are still used as reference books and sources. He was one of the most learned and accomplished writers as well as a famous scholar. Besides being perfect master of the language of Persia and Arabia, he was well skilled in French, Italian

¹⁶ Prof. Dr. Afetinan, *The oldest map of America*, p. 15.

¹⁷ *Turkish Architecture*, translated by Prof. Dr. Ahmet Edip Uysal, p. 20.

and Latin; and he translated several works from these languages. He is also the author of several other excellent geographical works but his *Cihannuma* is the most remarkable book. It contains very valuable information on the geography of Anatolia, Syria, Iraq, Egypt and European Turkey. It is said that he began it twice and twice it remained uncompleted. His first version of *Cihannuma* consists of maps finely drawn by the author on the margins of the book, devoting one map to each *sanjak* or *vilayet*. The second version of *Cihannuma* was printed in 1145 A.H./1732 A.D. by İbrahim Müteferrika (1674 A.D. — 1744 A.D.) who established the first printing press in İstanbul in 1140 A.H./1728 A.D. This book was the eleventh product of his press and contains full-page maps which constitutes the transition from the medieval oriental to the modern European point of view. It is also said that these maps are in the style of contemporary European cartography but with inverse orientation i.e., north at the bottom. To the best of my knowledge he took existing Muslim and European materials and reshaped it in his own way. Many persons later copied him, but all the credit must go to him as its designer and architect. He had also translated into Turkish language the Atlas Minor of Gerhard Mercator which was edited by Godocus Hondius and to which the translator gave the title *Levāmi 'al-nur fī zulūmāt-i Atlas Minor*.

The major Turkish work in the field of travel description with geographical facts is *Tarih-i seyyah* better known as *Seyahat Name* of Evliya bin Dervish Muhemmed Zilli usually called Evliya Chelibi (1611 A.D. — 1678 A.D.). It is a unique work in ten volumes which is based on his travels of every part of the Ottoman Empire and its neighbouring countries. His travels lasted for about forty years (1631—1670 A.D.) but his work is more than a description of the travels. He has recorded a vast quantity of observations on culture folklore with examples of the phrases of the various languages, geography and description of the remarkable buildings, beautiful cities and landscapes. Other Turkish writers have also written travel descriptions but some of the productions stimulated by annual Holy Pilgrimage (*Haj*) are remarkable from the point of view of geography. Among these the *Manasik al-haj* of Mehemmed Edib (1193 A.H./1779 A.D.) is very detailed.

'Ali ibn Ahmad ibn Muhammad al-sharqi who wrote his work in 1551 A.D. in Turkish language also contains an interesting world map which reminds us of al-Biruni. Mustafa Resmi also draw a remarkable map of the Black Sea in 1785 A.D. which is hand-painted on silk. But a considerable step forward was the printing of a modern atlas with extensive commentary in 1218 A.H./1803 A.D. in the newly founded State Printing Press of İstanbul under the title of *Jadid Atlas Terjumesi*.

Turkish contributions to geography including cartography is very significant and its contents are vast and it has a definite place in the history of geography. It is also a fact that the Turks are mostly influenced by the Arabs but have not followed slavishly. Turkish geographers especially cartographers have made some very significant contributions and they may be said, in the words of Prof. S. Maqbul Ahmed ¹⁸, to have formed a bridge between mediæval Islamic and modern cartography.

¹⁸ *New Encyclopaedia of Islam*, Vol. IV, p. 1082.