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# The Transfer of Typographic Printing Technology to Iran in the Early Qajar Period (1782-1861)

Akbar Khoshzad<sup>1</sup> and Gholam Hussein Moghaddam Heidari<sup>2</sup>

Translated by Esmail Yazdanpour

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## Introduction

Scholarship has largely viewed printing history in Iran through the lens of modernization and the Constitutional Revolution, focusing on printing technology as a means for disseminating ideas and promoting literacy rather than as an industrial process in its own

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<sup>1</sup> Doctoral student in History of Science, Research Institute of Humanities and Cultural Studies, Tehran, [khshzd@yahoo.com](mailto:khshzd@yahoo.com).

<sup>2</sup> Director of the Department of History of Science, Research Institute of Humanities and Cultural Studies, Tehran, [gmheidari@gmail.com](mailto:gmheidari@gmail.com).

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right. This article aims to examine the introduction of printing to Iran by focusing on how print technology was transferred and utilized in the early Qajar period, considering global developments in printing technology. Studying the earliest letterpress printed books in the early Qajar era sheds light on the broader topic of Iran's adoption of printing as an industry. Tracing the arrival of printing equipment illuminates the beginnings of Iran's engagement with this transitional technology.

## A Brief History of Publishing in Iran

Movable-type printing first arrived in Iran during the Safavid era in the seventeenth century, introduced by the Carmelite and Armenian Christian minorities.<sup>3</sup> Shah Abbas I asked the Carmelites to supply a printing press, but this wish was not fulfilled in his lifetime. A printing machine was indeed shipped from Rome in 1624 CE / 1033 AH, but for unknown reasons it did not reach Isfahan until December 1628 or January 1629 CE / 1038 AH, after Abbas' death.

According to the historian Taqizadeh, the Carmelites residing in Isfahan established a printing house in 1650 CE / 1060 AH near Mir Square to publish religious books in their monastery.<sup>4</sup> This press produced books in Arabic and Persian but ceased operations in subsequent years due to lack of Iranian interest, the dry climate, and other factors.

In the late sixteenth and early seventeenth centuries, during the reign of Shah Abbas I's grandson and successor Shah Safi (1629-1642 CE / 1040-1052 AH), a printing press using Armenian type was established. This press was set up in New Julfa by the Armenian archbishop Khachatur Kesaratsi (1590–1646 CE / 998–1056 AH). As one of the earliest ethnic/religious groups in the country with exposure to European ideas and

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<sup>3</sup> The Carmelites and Armenians were Christian sects present in Persia during the Safavid era. The Carmelites were a Catholic mendicant order dispatched from Rome to the Safavid court by the Vatican and European rulers to counter Ottoman influence (see Mustafa Zakiri, "Asnad-i Padriyan-i Karmili, Ayina-yi Mirath" [Documents of the Carmelite Fathers, The Mirror of Heritage], *Ayandeh* 4, nos. 2-3, Summer and Fall 2006: 336-347). The Armenian community in Persia followed their own independent Armenian Apostolic Church and had significant merchant ties with Europe.

<sup>4</sup> Hassan Taqizadeh, "Chapkhaneh va Rozname dar Iran" [Printing House and Newspapers in Iran], *Kaveh* 2, no. 5, 1959: 14-5.

knowledge, the Armenian community pioneered the new technology. This progress was possible due to the open and encouraging atmosphere Shah Abbas I fostered in New Julfa, where Armenians could freely work and exchange ideas with outside contacts. His encouragement and protection enabled their printing activities. Under Kesaratsi's guidance, Armenian students took on the challenging task of making their own paper and setting their alphabet in type. Through diligent teamwork, they achieved the momentous feat of printing Iran's first book in 1638 CE / 1048 AH – a 350-page edition of the Psalms. Its illustrations and adornments demonstrated the growing expertise of the printers. Though the technology had existed for centuries in Europe, the Armenian community's use of self-developed resources was a significant achievement. They succeeded without any formal instruction, a testament to their initiative and problem-solving abilities.<sup>5</sup> Regrettably, this pioneering press did not last long. Tavernier noted they struggled with low print quality, while resistance from scribes worried about losing work discouraged further publishing.<sup>6</sup> Furthermore, most Iranians spoke Persian, not Armenian, so the readership was limited. Most manuscripts were still copied by hand. However, this initial foray into print technology established an enduring legacy as the first attempt to introduce metal moveable-type printing to Iran. Their innovative spirit laid the early foundations for the technology to spread.

During the sixteenth- and seventeenth-century Safavid era, early attempts emerged to adopt Europe's new printing technology using movable metal type.<sup>7</sup> Both Shah Abbas I and his successor Abbas II displayed an interest in developing Persian print culture.<sup>8</sup> Under Abbas II's reign starting in 1632 CE / 1041 AH, attempts were made to

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<sup>5</sup> Mirza Ghulamhossein Saleh Shirazi, *Safarnameh* [Travelogue], introduced and edited by Ismail Raeen, Nashr-e Ruz, 1968, 262.

<sup>6</sup> Jean-Baptiste Tavernier, *Safarnamah-i Tawarniyah* [Tavernier's Travelogue], translated by Abu Torab Nuri, revised and edited by Hamid Shirani (Tehran: Kitabkhanah-i Sana'i wa Kitabfurushi-i Ta'id, Isfahan, 2nd edition, 1984), 597.

<sup>7</sup> Jean-Baptiste Chardin, *Safarnameh*, vol. 4, translated by Muhammad Abbasi (Tehran: Amirkabir, 1956), 1711.

<sup>8</sup> Chardin, *Safarnameh*, 1956, 269.

establish printing houses in Iran, aided by European expertise and growing diplomatic ties. However, Abbas II's death in 1666 CE / 1076 AH and the subsequent lack of interest from his successor Sultan Husayn impeded progress on importing printing.<sup>9</sup>

Transporting the heavy Gutenberg-style wooden printing presses posed major logistical obstacles. Carrying easily damaged presses weighing hundreds of pounds over Iran's rugged terrain was a major challenge. Reaching Isfahan, the Safavid capital deep inland, required either arduous overland Caucasus routes or maritime links from Persian Gulf ports. Safavid Persia lacked quality roads, relying primarily on pack animals for transport, as recorded in European travel accounts. Operating the complex presses also called for skilled technicians from abroad, adding costs.

According to Chardin, Safavid elites exhibited a range of attitudes towards European innovations such as printing. However, despite ongoing European contacts through merchants and embassies, no major state-led attempts were made to import printing equipment after Sultan Husayn's reign. Manuscript production using traditional scribal methods remained the primary means of document creation in Persia throughout the 1600s CE / 1010s AH. Not until the eighteenth century CE under the Afsharid and Qajar dynasties was printing reintroduced.

The period following the fall of the Safavid dynasty saw some limited printing activity. Several pamphlets in Latin and Arabic were produced, along with materials printed to promote Christianity during the Afsharid rule in the early eighteenth century. John Pinkerton and Jonas Hanway, who traveled to Iran during the era of Nader Shah Afshar (1688–1747 CE / 1100–1160 AH), mentioned pamphlets printed and published in Latin and Arabic.<sup>10</sup> The Portuguese printer Pedro Teixeira recounted the awe expressed by the Persian elite on viewing a printed book in the early seventeenth century. Under the Zand dynasty, a Persian-English dictionary was printed in 1780 CE / 1194 AH in

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<sup>9</sup> Chardin, 1956, 363-8.

<sup>10</sup> Hussein Mahbubi Ardakani, *Tarikh-i Mu'assisat-i Tamadduni-i Jadid dar Iran* [History of New Civil Institutions in Iran], vol. 1 (Tehran, 1991), 211.

British-controlled India, as large-scale printing capabilities did not yet exist in Iran. Beyond the possible use of small, portable presses by Christian missionary groups traveling within Iran, solid evidence of established print shops or printed works within the country is lacking for this period. However, some Persian books were printed in Europe and India during these transitional eras. In 1784 CE / 1198 AH, during the final years of Zand rule, one printing press was recorded as arriving in the port of Bushehr on Iran's southern coast. Its eventual fate and use are unknown.

The introduction of printing to Iran therefore lagged behind other regions, despite Persians' well-known love of books. Following the decline of the Safavids in the early eighteenth century, only sparse references to early printing activities can be found. This is perhaps surprising given the central role books played in Iranian culture, seen in the thriving production and circulation of manuscripts. Geo-political disruptions, religious reluctance and limited trade links likely delayed the spread of printing to Islamic Persian society compared to other regions. While manuscript production continued to meet demand, printing had still not taken root in Iran itself at this time, unlike the thriving industry in Europe.<sup>11</sup>

Early Iranian encounters with printing were therefore tenuous and indirect, centered on its minority Christian communities. Yet these sparse beginnings planted the seeds for the gradual emergence of print technology in Iran over the coming century. Printing and publishing as a permanent, nationally supported industry became fully established under the Qajar dynasty in the early nineteenth century.

## Industrial Revolution and Printing Technology

The arrival of printing technology in Iran was largely enabled by major industrial changes happening in Europe at this time. During the 1800s CE / 1210s AH, improvements to printing stemmed from the broader Industrial Revolution. Key issues holding back printing were addressed through new inventions. For example, printers gained access to

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<sup>11</sup> Hamid Molana, *Sir-e Ertebatat-e Ejtema'i dar Iran* [Course of Social Communications in Iran] (Tehran: National Public Libraries Institution, 1979), 29.

smaller, more portable presses that could easily be transported on ships and wagons. Better transportation infrastructure made moving technology between places much easier. The methods for casting the alphabets used in languages like Arabic and Persian were also improved. All these advances paralleled Europe's rapid industrialization and helped spread printing worldwide. The ability to print texts in various scripts directly supported uptake of the new technology in Iran, the Middle East and South Asia. New manufacturing techniques emerged too. Printers began using movable metal type pieces that could be arranged and reused quickly. Around 1800 CE / 1214 AH, machines were created to automate paper production. Thus, industrialization drove tremendous upgrades to printing from simple presses through mass-production capabilities. This revolutionized printed communication globally. Iran and neighboring regions particularly benefited as their writing systems became printable abroad and translatable at home. The exchange of ideals and ideas could now cross borders through the medium of print.

In 1800 CE / 1214 AH, Charles Stanhope invented the first metal hand press, replacing wood and lead type. His durable steel characters withstood high-volume printing. Composition became quicker and publishers increased output to serve growing literacy worldwide. Adopted globally, the metal press represented the beginning of industrialized printing. Production surged to satisfy mass demand. In Iran, importing this technology accelerated book publishing through cheaper technologies. Metal printing laid the foundations for widespread culture and learning through print. Thus, Stanhope's metal press innovations directly catalyzed Iran's own publication and communications revolution.

Between 1800-1830 CE / 1214-1244 AH, numerous versions of Stanhope's hand press were manufactured. These presses were cast in foundries using iron molds. A key advantage of the new hand press was that its iron parts were easily assembled. Unlike Gutenberg's large, heavy wooden press, Stanhope's device was small, light, and portable. Mass production lowered printing costs significantly. With proliferation of the new presses, old models were phased out, especially after Friedrich Koenig invented the

steam-powered press in 1812 CE / 1226 AH, greatly boosting printing's economic viability.<sup>12</sup>

The new hand press had several important features. It was simple and fast to use; it needed fewer and lower-skilled workers. Printing could now be done in workshops with just two semi-skilled laborers to ink the type and to pull the lever (although typesetting still required trained workers). The Stanhope press, measuring around 120 cm in height and 75 cm in width, printed 250 copies an hour. The new presses, with their solid cast iron body and minimal moving parts, were also much more robust and less prone to damage, making them easier and cheaper to ship. The new metal presses quickly reached countries outside Europe, such as India, Iran and Egypt.<sup>13</sup>

The new hand press could easily be dismantled for transport by ship or overland using pack animals. The highly durable cast iron parts were easy to reassemble. This proved very useful for countries like Iran that previously had little experience with printing. In such countries, the new hand presses were considered a technological breakthrough.<sup>14</sup> The first printing press established in Iran was one of the small, portable Stanhope press models.<sup>15</sup> However, even this small, simple and affordable press was useless without typefaces for the local alphabet. Although Arabic movable type was first cast in Europe around 1514 CE / 920 AH, it remained scarce and expensive for centuries, only accessible to some missionaries.

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<sup>12</sup> Richard-Gabriel Rummonds, *Nineteenth-Century Printing Practices and the Iron Handpress* (New Castle: Oak Knoll Press, 2004), 30.

<sup>13</sup> Charles Knight, *The English Cyclopaedia* Vol. 4 (London: Bradbury and Evans, 1867), 764.

<sup>14</sup> Nile Green, "Persian Print and the Stanhope Revolution," *Comparative Studies of South Asia, Africa and the Middle East* 30, no. 3 (2010): 473-90.

<sup>15</sup> Mirza Hossein Golpaigani, *Tarikh-e Chap va Chapkhaneh dar Iran* [History of Printing and Printing Houses in Iran] (Nashr Golshan, 1999), 12.

## The Arrival of the Printing Press in Early Qajar Iran

The introduction of printing technology and equipment to Qajar Iran was part of Crown Prince Abbas Mirza's broader efforts to import new technologies and knowledge.

As Fath Ali Shah's fourth son and heir apparent, Abbas Mirza (1789-1833 CE / 1204-1249 AH) faced powerful rivals at court. Tensions escalated when Abbas Mirza suffered defeat in the first period of the Iran-Russia war and his opponents in Tehran accused him of colluding with the Russians.<sup>16</sup>

Abbas Mirza displayed remarkable enthusiasm for documenting and publicizing his role in the Russo-Persian wars. This is evident in two major works published under his supervision, *Fathnameh* and *Ma'ather Soltaniyeh*.

*Fathnameh* [The Book of Victory], also known by the alternative title *Jihadieh*, is a meticulously detailed historical account of the first Russo-Persian war, which concluded in 1813. It offers an extensive and detailed examination of the war, including its various outcomes and consequences. Despite experiencing defeat in the initial stages of the conflict, Abbas Mirza actively engaged in documenting the war, placing a spotlight on his own actions and experiences.

The second significant work, Abd al-Razzaq Donboli's *Ma'ather Soltaniyeh* [Royal Records], sheds light on the early period of Qajar Iran, leading up to the Gulistan Treaty of 1813 CE / 1228 AH.<sup>17</sup> This extensive account provides valuable insights into political and military developments during that era. Abbas Mirza's strong interest in publishing such a work further underscores his determination to showcase his own contribution and achievements.

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<sup>16</sup> Mirza Fazlullah Khawari Shirazi, *Tarikh-e Zulfarnain* [History of Alexander the Great], edited by Naser Afsharfard, 2 vols. (Tehran: Library and Museum Organization of Islamic Consultative Assembly, 2001), 1/435, 363.

<sup>17</sup> Abd al-Razzagh Maftoon Donboli, *Mafatih al-Sultaniyyah* [Keys of Sultaniyeh], corrected by Gholamhossein Zargarinzhad (Tehran: Entesharat-e Roznameh-ye Iran, 2004).



By actively promoting the publication of these books, Abbas Mirza aimed to shape the narrative surrounding the Russo-Persian wars, ensuring that his own perspective and exploits were thoroughly documented and widely disseminated. These publications not only served as historical records but also served to bolster his reputation and underpin his legacy within the Qajar dynasty. Abbas Mirza recognized the significance of these works as tools for preserving his image and securing his place in history.

As discussed, the two central figures identified with introducing printing to Qajar Iran are Mirza Saleh Shirazi and Mirza Zayn al-Abidin Tabrizi. Mirza Saleh returned from studying in England in 1815 CE / 1230 AH, bringing a printing press. The following year, Mirza Zayn traveled to Russia to learn printing methods, later establishing Iran's inaugural press in Tabriz. In addition to Mirza Saleh and Mirza Zayn, some sources mention a European named Edward Burgess, said to have been hired by Abbas Mirza to establish a modern printing house and to teach printing.<sup>18</sup> However, not much is known about Burgess' actual activities.

## Mirza Saleh Shirazi's Overseas Printing Education

During the Russo-Persian wars, Crown Prince Abbas Mirza sent several students abroad, especially to England, to learn about new sciences and military matters. One of these students was Mirza Saleh Shirazi, who went to England with four other pupils. In addition to supervising the delegation, he was tasked with studying European languages, sciences, and anything else that could benefit Iran. During his four-year stay in Europe, he kept a travelogue chronicling important events of that time. His journey went through Russia *en route* to England, and his memoir discussed Peter the Great's reforms.<sup>19</sup> Mirza Saleh Shirazi presented Russia's modernization as a model for Iran.

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<sup>18</sup> Fereydon Adamiyat, *Amir Kabir va Iran* [Amir Kabir and Iran] (Tehran: Amirkabir, 1975), 374; Muhammad Ali Tarbiyat, "Tarikh-e Matba' va Matbu'at-e Iran" [History of Printing House and Publications in Iran], *Ta'lim va Tarbiyat* [Education and Training] 4, no. 11, 1933: 379.

<sup>19</sup> Mirza Saleh Shirazi, *Tarikh-e Safar-e Haji Khalil Khan va Muhammad Nabi Khan be Hindiistan* [History of the Travel of Haji Khalil Khan and Muhammad Nabi Khan to India] (Tehran: Kavir, 2000), 138-9.

Mirza Saleh's extended time in England also allowed him to grasp the secret of European power. Unlike Russia, which was a recipient of knowledge and technology, he saw England as the primary source of learning. Among the technologies that attracted his attention was printing.

Well before Mirza Saleh, however, another Qajar envoy had discovered European advances in printing. In 1809 CE / 1224 AH, Mirza Abolhassan Khan Ilchi's travelogue described England's mass-produced banknotes, produced by two hundred printers. Ilchi admired the efficient organization and mechanization enabling such large-scale printing.<sup>20</sup> For Ilchi in 1809 and Saleh a few years later, visiting industrial Europe profoundly impacted their perceptions of printing's potential. Once exposed to burgeoning print economies abroad, these Persian emissaries sought to import the infrastructure of print. Ilchi's wide-eyed account foreshadowed Saleh's own realization that, properly harnessed, the power of print could transform societies. Through elites like Ilchi, Saleh and Abbas Mirza, awareness of typography permeated Qajar Iran.

During his travels from 1815 to 1819 CE / 1230 to 1234 AH, Mirza Saleh Shirazi primarily visited prominent printing houses in England to gain insights into European printing practices. As post-Gutenberg innovations like stereotyping and steam power transformed Europe's industrializing printers, Saleh explored this cutting edge. His arrival coincided with the British East India Company's explosion of Orientalist publications, including works of Persian poetry.

In this vibrant setting, Mirza Saleh formed friendships with distinguished linguist-diplomats including John Shakespeare (1774-1851), a lecturer in Oriental literature at the East India Company's military school who also served as his English tutor. Prior to that, Saleh held the position of translator for Sir Gore Ouseley (1770-1844), the British ambassador to Iran, and his brother, Sir William Ouseley (1767-1842). Saleh actively

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<sup>20</sup> Mirza Abolhassan Khan Ilchi, *Hayratnameh* [The Book of Wonder], edited by Hassan Moraslvand (Tehran: Rasa, 1985), 148-9.

participated in the publication of the Oriental Collections and, on his return to Iran, was employed at the Persian printing house.

During Ouseley's diplomatic mission to Iran, Saleh collaborated closely with William Price,<sup>21</sup> the secretary of the British embassy and a dedicated researcher employed by the East India Company. Through his association with Sir William Ouseley, who maintained a fruitful partnership with the British Bible Society, Saleh was introduced to its esteemed publisher Richard Watts (1768-1844).

In 1819 CE / 1234 AH, Saleh worked alongside Watts for six months, helping produce Bibles for distribution abroad. His invaluable contribution played a pivotal role in ensuring the successful publication of significant religious texts.<sup>22</sup>

Richard Watts was a skilled typesetter and printer, publishing many texts for the British and Foreign Bible Society. Watts had printed translations of the New Testament in Persian, Arabic, Hindi and Syriac. Works from his press included a Hindi New Testament using Persian movable type and an Arabic translation of the Psalms. These editions circulating in 1819 likely relied on Watts' foreign assistants like Mirza Saleh, since Watts lacked the requisite language expertise. Surrounded by printed sheets in various Asian languages, Saleh acquired firsthand typesetting experience.

Mirza Saleh's training at Watts' burgeoning missionary press represented a seminal moment in the globalization of typography. For the young Qajar state, Saleh's apprenticeship in print technology brought about pivotal change in disseminating modern book culture.<sup>23</sup>

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<sup>21</sup> William Price (c. 1780 – 1830), a distinguished Orientalist scholar, journeyed to Iran in 1810 as Ambassador Sir Gore Ouseley's secretary, writing a captivating account of his travels. Following his Iranian sojourn, Price set up a printing press adorned with Persian script at his home near Worcester. He printed a collection of his own writings as well as contributions from fellow authors. His travelogue *The British Embassy's Journal in Iran* is of exceptional significance, recording his meticulous exploration of Iranian dialects and in-depth analysis of the ancient cuneiform inscriptions found in Bisotun.

<sup>22</sup> William Ouseley, *Travels in Various Countries of the East, More Particularly Persia* (London: Rodwell and Martin, 1823), vol. 3.

<sup>23</sup> Green, "Persian Print and the Stanhope Revolution," 2010, 147.

Returning to Abbas Mirza's court in 1819, Saleh eagerly propagated his newfound mastery of print technology. Saleh's printing proposals came as Iran emerged from political instability, supported by Abbas Mirza's reformist zeal. Backed by the heir apparent, Saleh helped establish an Iranian printing industry in Tabriz and Tehran. The 1830s CE / 1250s AH saw rapid expansion of Persian lithography, while Saleh introduced seminal metal type technologies. His transformative experiences of 1815 to 1819 CE / 1230 to 1234 AH sparked Iran's engagement with global print culture. Setting up the first Iranian press, Saleh heralded information exchanges empowering sovereignty and scholarly discourse.

Mirza Saleh's travelogue describes the state of printing technology in Europe in the 1810s. He describes how months before his departure from England in 1819, with help from Watts, he was able to purchase a small printing machine and acquire Persian printing letters at a modest cost. The device he acquired was in all likelihood a Stanhope printing press, standing approximately one meter in height. Its compact size was of great importance in transporting it to Iran. Mirza Saleh had also seen the large Fourdrinier<sup>24</sup> paper-making machine but it was not feasible to transport it to Iran at that time. He only brought a manual printing press and a telescope back with him to Iran.

Mirza Saleh described studying manual printing at the Watts workshop as follows:

I pondered the idea that in addition to my studies, if I could bring something useful from that realm [England] to Iran that could serve the government, it might be beneficial. The thought of bringing printing and the industry of Basma [newspapers] had been on my mind for a long time. A few days later, in London, I met Colonel Khan [Major Darcy, an officer in Abbas Mirza's army] and informed him of the situation. He approved of this matter and after that, I saw Mr. Dance [Watts], the name given to the printing master, which means they print the Bible in Persian,

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<sup>24</sup> The Fourdrinier machine was registered in England in 1803 by the Fourdrinier brothers, Henry and Sealy. The new technology involved drying paper pulp on a rolling wire mesh belt to create a thin layer. This layer of paper is then further dried and smoothed by heavy steam-heated rollers. The technology is still in use: some modern machines are ninety meters in length.

Hindi, Syriac, Arabic, and other foreign languages. I went to his workshop every day for two hours, learning the art of printing from beginning to end.<sup>25</sup>

Mirza Saleh and his companions set off for Iran in early March 1819 CE / 1234 AH, traveling overland but sending their belongings and cargo, including the manual printing press, via the maritime route to Trabzon. Mirza Saleh's travelogue mentioned that customs officials in Trabzon port demanded additional fees for handling the cargo despite its non-commercial nature. The cargo then had to be transported by pack animals through the mountainous region of Anatolia and Rum to Tabriz in northwestern Iran.<sup>26</sup> According to Colonel Drouville,<sup>27</sup> who had traveled to Iran in 1812-1813,

Persia lacks major roads and carriages are unknown; only camels and mules are used for transport. However, in recent years, a real arsenal drawn by horses has replaced the previous weak artillery known as zombareks,<sup>28</sup> and they have focused on repairing and developing highways.<sup>29</sup>

Choosing a small portable device seemed logical for such a route. Two decades later, American missionaries intended to send a printing press to Nestorian Christians in the city of Urmia via the same route. This printing press, probably a large Gutenberg type, was prepared in 1837 CE / 1253 AH by the Reverend Joseph Jewett, the Bible Society's editor of foreign-language publications in London. However, it proved too cumbersome to transport through the Anatolian mountains, and it was returned from Trabzon to

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<sup>25</sup> Saleh Shirazi, *Safarnameh* [Travelogue], 1968, 375, 384.

<sup>26</sup> Shirazi, *Safarnameh*, 1968, 452-6.

<sup>27</sup> Colonel Gaspard Drouville was a French officer who was part of General Claude Matthieu Gardane's mission to Iran. The Gardane Mission was a diplomatic and military undertaking by Napoleon in 1807-1809, aiming to form an alliance with Persia against Russia and Britain. The Treaty of Finkenstein formalized the alliance. However, the mission was not successful due to various political and military factors, including changing alliances in the Napoleonic Wars. After the failure of the mission, Colonel Drouville chose to stay in Iran and was employed privately by the Iranian government. His role and contributions during this period are not well documented, but it is clear that he had a significant impact on Iranian-French relations during this tumultuous period.

<sup>28</sup> Zombareks were small cannons that could be fired by artillerymen riding camels, and by extension, the soldiers themselves (translator's note).

<sup>29</sup> Gaspard Drouville, *Safarnameh* [Voyage en Perse fait en 1812 et 1813], trans. Javad Mahyee, 2nd edition (Tehran: Guttenberg, 1969), 11.

Istanbul.<sup>30</sup> Three years later, in 1840 CE / 1256 AH, a small portable device was sent to Urmia instead.<sup>31</sup> Justin Perkins, the first American missionary in Iran, wrote in his memoirs about the establishment of a printing house in Urmia in these terms:

The newly established and imported printing house is small and specifically designed for our mission so that we can easily transport it to the mountainous areas of these regions. Our printing house must be such that it can be transported by horse and cart.<sup>32</sup>

After returning to Iran, Mirza Saleh held a series of important positions, including Iran's ambassador to England, the head of the administrative system, and a ministry. Accordingly, he did not find an opportunity to launch his own press until 1828 CE / 1243 AH.<sup>33</sup>

## Mirza Zayn al-Abidin Tabrizi: Establishing Iran's First Typographic Printing Press in Tabriz

Before Mirza Saleh's undertaking, another printing press was transported to Iran and put to use in Tabriz: in 1816, Abbas Mirza sent Mirza Zayn al-Abidin Tabrizi to St. Petersburg. In 1817, he relocated his printing press from St. Petersburg to Tabriz (Etemad al-Saltanah, 1540).

The production of Persian books in Russia did not flourish to the same extent as in India,<sup>34</sup> Abbas Mirza opted to import printing presses with Persian script from Russia rather than India in the wake of new diplomatic relations with Russia following the Treaty

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<sup>30</sup> Hamid Hajianpour and Musa Khamushi, "Misyunargan-i Amrika'i wa Fa'aliyat dar Miyan-i Nasturiyan-i Urmia wa Rustaha-yi Atraf-i An" [American Missionaries and Their Activities Among the Nestorians of Urmia and Surrounding Villages], *Jistarha-yi Tarikhi* [Historical Inquiries] 7, no. 2, Fall and Winter 2016: 19-44.

<sup>31</sup> Taqizadeh, "Chapkhaneh va Rozname dar Iran", 1959: 14-5.

<sup>32</sup> Justin Perkins, *A Residence of Eight Years in Persia among the Nestorian Christians* (New York: Allen, Morrill and Wardwell, 1843), 205.

<sup>33</sup> Olimpiada Pavlona Schteglava, *Tarikh-e Chap-e Sangidar Iran* [History of Lithography in Iran], translated by Parvin Monzavi (Tehran: Moeen, 2009), 42.

<sup>34</sup> Mirza Salih Shirazi, *Tarikh-i Sifarat-i Hajji Khalil Khan wa Muhammad Nabi Khan bih Hindustan* [History of the Embassy of Haji Khalil Khan and Muhammad Nabi Khan to India], (Tehran: Kavir, 2000), 5-167.

of Gulistan,<sup>35</sup> when the political climate made it possible for Zayn al-Abidin to travel to Russia. Politics played a role in technology transfer, as did Russia's geographical proximity to Iran.

Printing technology in Russia was not well advanced: even the basic raw materials for printing had to be imported to St. Petersburg from elsewhere in Europe. Their type was also crude and rough. It quickly became clear from the first and second printings of the *Fathnameh* [Book of Victory] that Mirza Zayn al-Abidin's type was of better quality and was likely the work of specialists in letterpress printing from India and England. The press Mirza Zayn al-Abidin brought with him to Iran was probably not Russian-made, because no reports of printing press manufacture are known in Russia at this time. The press must therefore have been procured from elsewhere in Europe. According to Mirza Saleh's account, under Alexander I, the Russians were still importing this technology.<sup>36</sup> As such, Russia played an intermediary role in the emergence of printing in Iran as the conduit for technology transfer.

A close study of the format of the books printed by Mirza Zayn al-Abidin in Tabriz suggests he used a small metal plate letterpress, which aligns with Mirza Golpaigani's statement that the earliest presses in Tabriz and Tehran measured around 40 to 60 centimeters.<sup>37</sup> The small size of the books indicates that the first printing devices brought to Iran were small metal presses, not types with larger plates such as the large Columbian presses. Mirza Golpaigani also refers to a newer press brought by an Armenian merchant

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<sup>35</sup> The Gulistan Treaty was signed on 24 October 1813 between Qajar Iran and the Russian Empire, concluding the first Russo-Persian War that had begun in 1804. Under the terms of the treaty, Iran ceded control of several territories in the Caucasus region to Russia, including Baku, Shirvan, and parts of Talish and Georgia. This marked Russia's ascendancy over Qajar Iran in the Caucasus and solidified its position in the region. Historically, the Gulistan Treaty is seen as a humiliating defeat for Qajar Iran and a blow to Persian pride (translator's note).

<sup>36</sup> Saleh Shirazi, *Safarnameh*, 1968, 148.

<sup>37</sup> Golpaigani, *Tarikh-e Chap va Chapkhaneh dar Iran*, 1999, 12.

to Isfahan in 1843 CE/ 1259 AH. It bore an eagle emblem, making it an American-style Columbian hand press manufactured in London.<sup>38</sup>

Not much is known about Mirza Zayn al-Abidin Tabrizi. Seyyed Hassan Taqizadeh, an expert on printing, introduced him based on an account by Albert Houtum-Schindler<sup>39</sup> as follows.

In the year 1233 AH [1818 CE], a man named Agha Zayn al-Abidin Tabrizi brought modest printing house equipment and typography devices, meaning letterpress printing, to Tabriz. Under the protection of Abbas Mirza Nayeb al-Saltaneh, who was the ruler of Azerbaijan at that time, he established a small printing house and after some time completed a book called *Fathnameh*. This was the first book printed in Arabic letters in Iran.<sup>40</sup>

According to Taqizadeh, Edward Brown's account of the founding of the first printing house in Iran<sup>41</sup> was a translation of Mohammad Ali Tarbiyat's text, consistent with Houtum-Schindler's version. It has also been said that before Mirza Saleh returned to Iran, Abbas Mirza had ordered several printing devices from Russia. He also sent Mirza Zayn al-Abidin Tabrizi to St. Petersburg to learn printing techniques and ink-making. Four years later when he returned, he brought a printing press and some printing equipment and supplies including Arabic lead typefaces. Thus, the first printing house was established in Tabriz and the first Persian book in Iran was published there.<sup>42</sup>

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<sup>38</sup> Golpaigani, 1999, 9, 12.

<sup>39</sup> Albert Houtum-Schindler (1835-1900) was an Austrian engineer and diplomat who was involved in early telegraph projects in nineteenth-century Iran. As part of Austria's efforts to develop Iran's infrastructure, Houtum-Schindler led a mission from 1878-1879 to survey the route for a proposed telegraph line between Tehran and Mashhad (Taqizadeh, 1959: 14). During his travels in Iran in 1878-1879, he documented the presence of printing presses. He published his account in the early 1880s. While he was no doubt a peripheral witness, Houtum-Schindler's writings preserved what is considered the first detailed description of the introduction of print technology to Iran through Tabriz in the early nineteenth century (note expanded by the translator).

<sup>40</sup> Taqizadeh, 1959: 11.

<sup>41</sup> Edward Brown, *Tarikh-e Matbu'at va Adabiyat-e Iran dar Dore Mashruteh* [History of Press and Literature in Iran during the Constitutional Period] (Tehran: Kanon-e Ma'refat, 1957).

<sup>42</sup> Taqizadeh, 1959: 11-12.



No information is available about Mirza Zayn al-Abedin Tabrizi's travel route to and from Russia, but we know that in 1828 CE / 1244 AH, Khusrow Mirza's journey took place overland, from Tabriz to Sofian, Nakhchivan, Iravan, Tbilisi and then to St. Petersburg. It is very likely that Mirza Zayn al-Abedin Tabrizi took the same route.<sup>43</sup> Mirza Zayn al-Abedin was likely already familiar with printing technology before being sent to Russia. This was probably why Abbas Mirza chose him for this mission. After Mirza Zayn al-Abedin established a printing house in his hometown, Tabriz became the center of Iran's printing activities.

Some sources have mistakenly referred to Mirza Ja'far Namini as the founder of the first printing house in Tabriz. The Leningrad [now Saint Petersburg] section of the Institute of Oriental Studies library and the British Museum both hold printed copies of Saadi's undated *Golestan*, published by Mirza Ja'far. However, the *Journal Asiatique* reported the publication of *Golestan* in 1821.<sup>44</sup> Therefore, the beginning of his activity was around 1821 CE / 1237 AH. We know that in 1824 CE / 1240 AH, on Abbas Mirza's orders, Mirza Ja'far was sent to St. Petersburg to learn lithographic printing.<sup>45</sup> Apparently Mirza Ja'far republished *Golestan* [The Gulistan of Saadi in the same year, 1824 CE / 1240 AH].<sup>46</sup>

## Characteristics of the First Printed Book in Iran

The first printed book in Iran was *Fathnameh*, published in Tabriz in 1818 CE / 1233 AH. It was an account by Mirza Eesa Ghaem Maqam of the first Russo-Persian war ending

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<sup>43</sup> Mustafa Khan Afshar, *Safarnamah-i Khusraw Mirza bih Patrasburg wa Tarikh-i Zindagi-i 'Abbas Mirza Na'ib al-Saltana* [The Travelogue of Khusraw Mirza to St. Petersburg and the Biography of Abbas Mirza the Crown Prince], researched by Muhammad Golbon (Tehran: Kitabkhana-yi Mustowfi, 1970), 144-55; Muhammad Ali Jamalzadeh, *Ganj-e Shayegan* [Treasure of Shayegan] (Tehran: Kaviani, 1956), 45.

<sup>44</sup> Schteglöva, *Tarikh-e Chap-e Sangidar Iran*, 2009, 51.

<sup>45</sup> Ulrich Marzolph, *Bist Maqale darbaare Tarikh-e Chap-e Sangidar dar Iran* [Twenty Articles about the History of Lithography in Iran] (Tehran: Atf, 2015), 610-61.

<sup>46</sup> Tarbiyat, "Tarikh-e Matba' va Matbu'at-e Iran", 1933: 659.

with the Gulistan Treaty in 1813.<sup>47</sup> The work was typeset by Muhammad Ali bin Haji Muhammad Hussein Ashtiani using imported Arabic lead typefaces.<sup>48</sup> Mirza Zayn al-Abidin Tabrizi reprinted it a year later in 1819 CE / 1234 AH with more refined fonts.<sup>49</sup>

The crude quality of Zayn al-Abidin's printing equipment and materials is evident from these early works. His printing house set type by hand using Arabic characters cast in lead arranged in trays, then printed the pages using manual metal presses, likely a Stanhope design. The ink was a sooty black mix typical of the time, personally prepared by Zayn al-Abidin. The paper was imported from China.<sup>50</sup>

Since local Persian typefaces were unavailable before twentieth-century type foundries, Arabic script was adapted. Fathnameh lacked four specific Persian letters, so Zayn al-Abidin improvised with Arabic type.<sup>51</sup> Printed books bore the hallmarks of traditional Persian bookbinding, likely commissioned separately by purchasers.<sup>52</sup>

Strikingly, Zayn al-Abidin's earliest books lacked title pages, page numbers, chapter headings, and other common conventions found in European books. Printing details, such as the date and place of publication, were included at the end of the book, similar to manuscript traditions. Despite the introduction of novel typesetting techniques, the overall appearance and layout of the books closely resembled traditional handwritten manuscripts, at least during the first decade of printing in Iran.<sup>53</sup> This trend continued well into the nineteenth century, until the 1830s CE / 1240s AH, when

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<sup>47</sup> Mirza Eesa Qa'im Maqam, *Risalah-yi Jihadiyah* [Treatise on Jihad], researched by Majid Gholami Jaliseh (Qom: 'Atf, 2014), 2-10.

<sup>48</sup> Golpaigani, 1999, 11.

<sup>49</sup> Tarbiyat, 1933: 659.

<sup>50</sup> Golpaigani, 1999, 12.

<sup>51</sup> Golpaigani, 1999, 11.

<sup>52</sup> Marzolph, *Bist Maqale darbaare Tarikh-e Chap-e Sangi dar Iran*, 2015, 517.

<sup>53</sup> Mohammad Javad Ahmadiania, "Tarrahi-e Huruf dar Resalah-ye Jihadiyeh" [Type Design in Treatise of Jihad], *Quarterly Journal of National and Library Studies and Information Organization* 25, no. 3 (Autumn 2014): 130-50.

lithography revolutionized Persian printing by enabling the mass production of calligraphic books.

## The Spread of Typographic Printing in Iran

Around six years after printing began in Tabriz (in 1823-1824 CE / 1239 AH), Mirza Zayn al-Abidin Tabrizi was summoned to Tehran, but his printing house in Tabriz remained active for another ten years. The printing house was managed by Molla Muhammad Baqir Tabrizi, one of Mirza Zayn al-Abidin's disciples, who published several books and treatises during this decade.<sup>54</sup> Mirza Zayn al-Abidin brought the device he had acquired from Russia to Tehran and likely made use of the press and typefaces brought to Tabriz by Mirza Saleh, since the typeface and sizes of books printed in Tabriz changed after Zayn al-Abidin left for Tehran. It can be inferred that the typeface of subsequent printed books was the same prepared for Mirza Saleh by Watts, as it appears more mature and legible.

The second printed book from Tabriz was *Ma'ather Soltaniyeh* [Royal Records] by Abd al-Razzaq Donboli (pen name Maftoon), chronicling Fath Ali Shah Qajar's reign from his accession in 1797 CE / 1212 AH to 1825 CE / 1241 AH. This book was printed in 1825 CE / 1241 AH by Muhammad Baqir Tabrizi. *Abwab al-Jinan* [The Doors to Paradise] was the third book, printed in Tabriz by Khalil Tabrizi, another disciple of Mirza Zayn al-Abidin. Ali bin Muhammad Hussain Tabrizi's *Ta'lim Nameh dar Amal Ableh Kobi* [The Book of Instructions for Smallpox Inoculation], with original text alongside sections translated from Dr. William Cormick, was the fourth printed work from Tabriz, in 1829 CE / 1245 AH. Saadi's *Golestan* was also printed after these, apparently the last book published this way in Tabriz. These books were typeset and printed using lead type and manual presses. The printing house in Tabriz was called Basmah Khanah Dar al-Saltanah Tabriz [The Tabriz Sultanate Publishing House]. Mirza Zayn al-Abidin also played a pivotal role in shaping the cultural landscape of both Tabriz and Tehran by teaching the craft of publishing. Another printing house called Dar al-Tiba'ah Doulati [State Publishing House]

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<sup>54</sup> Golpaigani, 1999, 13.

was established in Tabriz.<sup>55</sup> The Tabriz printing house appears to have closed in around 1834 CE / 1250 AH, shortly after Abbas Mirza died in 1833 CE / 1249 AH.

## Printing in Tehran

In 1825 CE / 1239 AH, Mirza Zayn al-Abedin Tabrizi was summoned to Tehran by Fath Ali Shah's order to establish the Dar al-Khilafah Printing House. According to Abdulrazagh Donboli, at that time books printed in Tabriz were also present in Tehran, and merchants from other cities would also buy copies. This indicates that a distribution network had formed.<sup>56</sup>

Under the supervision of Manuchehr Khan Gorji Motamed al-Doleh, an accomplished manager with significant influence due to his proximity to the court, Mirza Zayn al-Abedin focused on establishing the Dar al-Khelafah Printing House. It printed a collection of books known as Motamedi Print.<sup>57</sup> In 1821-1829 CE / 1240-1244 AH, seventeen works were printed at the Motamedi printing house in Tehran, including the *Motamedi Quran*, the first copy of the Quran printed in lead type, in 1863 CE / 1279 AH. Other works included *Haq ul-Yaqin* [Certainty of the Truth] and *Zad-ol-Ma'ad* [Provisions for the Hereafter] by Majlesi, *Esharat-ol-Osool* [Indications of the Foundations] by Karbasi and *Moharegh-ol-Ghuloob* [The Burner of Hearts] by Naraghi, all of them widely recognized as authoritative Islamic texts, signifying the active engagement of religious groups with publishing industry.<sup>58</sup>

The number of state printing houses in Tehran gradually increased: after a while Manuchehr Khan Gorji consolidated them under his supervision. The Iranian state printing house took shape, operating until the early reign of Nasser al-Din Shah in 1849 CE / 1264 AH. The lead letterpress printing house in Tehran closed in 1843 CE / 1261 AH

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<sup>55</sup> Schteglava, *Tarikh-e Chap-e Sangidar Iran* [The History of Lithographic Printing in Iran], 2009, 51.

<sup>56</sup> Donboli, *Mafatih al-Sultaniyyah*, 2004, 2-10.

<sup>57</sup> The name "Motamedi print" doubtless referred to the family who ran the print workshop (translator's note).

<sup>58</sup> Shahla Babazadeh, *Tarikh-e Chap dar Iran* [History of Printing in Iran] (Tahoori, 1999), 18-9.

or 1844 CE / 1262 AH, as the new technology of lithography had superseded letterpress printing for several decades.<sup>59</sup>

## Printing in Iranian Cities

After Tabriz and Tehran, Isfahan in central Iran became the third city to have a printing house. In 1831-1832CE/1246-1247 AH, thirteen years after Tabriz and six years after Tehran, three books were printed in Isfahan by Abdolrazagh Esfahani with the help of his brother Agha Mohammad Khalil: *Resaleh Hosseiniyeh* [The Hosseiniyeh Treatise] in 1831 CE / 1246 AH, *Vajizeh va So'al va Javab* [Outline and Question & Answer] in 1832 CE / 1247 AH.<sup>60</sup>

Urumiyeh, near Tabriz in north-western Iran, was the fourth city to adopt letterpress printing. During the reign of Nasser al-Din Shah, Christian missionary societies established schools and used print to propagate their faith. The Nestorian Christians in Urumiyeh set up a printing house in 1839 CE / 1256 AH, printing books in several languages using Syriac, Latin, and later Arabic-Persian lead type. The first American missionary, Justin Perkins, settled in Urumiyeh in 1833. At that time, some 30,000 Armenians, Chaldeans and Nestorian Christians lived in Urumiyeh and Azerbaijan. In addition to building a hospital and school, Perkins established the first printing house in 1840. His initiatives in Urumiyeh were welcomed, and some secretaries and students worked at his printing house and learned the skill. He wrote in his memoirs:

Feb. 25 [1840]. I learn that the Persians are not entire strangers to the art of printing. A press which operated at Tabréez for several years, printing the Korân, was sometime ago transferred to Tehrân. A lithographic press is now in use, in this city, and books are bound here very well. The owner of this press was once ambassador to England, and speaks our language. Several months since, he invited the Rev. Wm. Glen, of the Scottish Missionary Society, then at Astrakhân, to remove to Tabréez, presenting as an inducement, the reasonable rate at which he would

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<sup>59</sup> Taqizadeh, 1959: 12.

<sup>60</sup> Babazadeh, *Tarikh-e Chap dar Iran*, 1999, 19-45.

print Christian books. His object was, doubtless, mercenary; but all this shows that the light of Europe is fast breaking in upon Persia.<sup>61</sup>

Among the first works he printed was an almanac by an Urumiyeh astronomer:

In November 1840/12 Ramedan 1256 our printer Mr. Breath returned from America bringing our small portable printing house. In November/26 Ramedan we started printing some Syriac prayer texts. The Muslims of the city were also pleased about the arrival of the printing house. The astronomer of Orumiyeh came to our office and asked us to print his calendar for the year 1857/1257 CE. On 20 November/5 Shawwal we began printing the Psalms in ancient Syriac.<sup>62</sup>

Initially Breath used letters brought from England for printing books, but he later made two sets of letters by hand.<sup>63</sup> Perkins wrote about the enthusiasm for printing technology in Urumiyeh:

Nov. 21 [1840]. We put our press in operation, by printing, on small scraps, a few copies of the Lord's prayer, in the ancient Syriac, merely to gratify the curiosity of the natives who had never before witnessed printing. The "Press" is now the lion here. Numbers call daily to see it. The Nestorians are inexpressibly delighted with it, alike as a curiosity and as holding out a pledge of opening a new era upon their people; while the Muhammedans, equally pleased with the novelty, inquire with interest, "are you not going to make books for us also?" "We have no Persian type," is the reply by which we waive this inquiry; but how long they will rest satisfied to have us work the press for the exclusive benefit of their Nestorian subjects, is a point that justly creates in us a degree of solicitude. We may at length find it expedient to print some in Persian for the Muhammedans, while we do so much for the native Christians.<sup>64</sup>

In 1842, two years after establishing the first printing house in Orumiyeh, a huge number of Perkins' missionary books were distributed across Azerbaijan.

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<sup>61</sup> Justin Perkins, *A Residence of Eight Years in Persia among the Nestorian Christians with Notices of the Muhammedans* (Andover, MA.: Allen, Morrill & Wardwell, 1843), 205.

<sup>62</sup> As cited in Taqizadeh, 1959: 13-14, back translated.

<sup>63</sup> Hamid Hajianpour and Mosi Khamooshi. "Missiunerhaye Amrikayi va Fa'aliyate Anha dar Miyan-e Nastuarian-e Urumia" [American Missionaries and their Activities among the Nestorians in Urmia], *Historical Research* 7, no. 2 (2016): 14.

<sup>64</sup> Perkins, *A Residence of Eight Years in Persia*, 1843, 444.

In Hamadan, in western Iran, *Resaleh Sowmiyeh* [The Fasting Treatise] by Akhund Mulla Mohammad Hosein was printed with lead type. Sheikh Agha Bozorg Tehrani's *Al-Dhari'ah* [The Essence/Precious Thing] noted the date of this treatise as 1834 CE / 1249 AH in Hamadan.<sup>65</sup>

Several other cities across the country welcomed printing as the century progressed. Understandably, the provinces were not at the same cultural level, and their industrial, economic and communication status influenced their cultural standing. Cities that were gateways for travelers and goods were quicker than others to become familiar with developments abroad. The impact of modernity was unequal: the Tabriz route had Caucasian and Ottoman overtones, Anzali was influenced by Russia, Bushehr bore traces of English and Indian influence, while Kermanshah was shaped by its Ottoman and Arabic connections. As travels increased towards the end of the Qajar era, these influences grew.<sup>66</sup>

Printing houses were also established in other major cities such as Shiraz, Isfahan, Orumiyyeh, Mashhad, Rasht, Ardabil, Yazd, Qazvin, Goros (now Bijar), and Kashan. Iran's geography and infrastructure shaped the spread of print, with limitations in overland transport being a key barrier. The most important commercial cities of Iran at that time were, in order, Tehran, Isfahan, Shiraz, Tabriz and Mashhad. The bulk of Iran's international trade took place through these cities and along the main transport routes.<sup>67</sup> These cities were mostly located in central Iran, and all goods had to be transported to them through mountainous routes on unfavorable roads. The seat of the Crown Prince, Tabriz was an exception, being located in the northern border regions of Iran, near Russia.

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<sup>65</sup> Homa Afrasiabi, "Ghadimitarin Kataab-e Chap-e Sorbi dar Hamadan" [The Oldest Lead-Printed Book in Hamedan], *Payam Baharestan* 2, Autumn and Winter 2008, nos. 1-2: 655-9.

<sup>66</sup> Abdulhussein Azarnag, "Tarikh-e Nashr-e Ketab dar Iran" [History of Book Publishing in Iran], *Bukhara* 70, Spring and Summer 2009: 191-2.

<sup>67</sup> Ahmad Ashraf, *Mavan'e Tarikhi-e Roshd-e Sarmayedaari dar Iran-e Dore Qajar* [Historical Barriers to the Growth of Capitalism in Qajar Iran] (Tehran: Zamineh, 1980), 27-8.

## Challenges of Letterpress Printing in Early Transfer to Iran

Letterpress printing was transferred to Iran at a time when print technology was evolving worldwide, and still faced fundamental challenges in Iran. First, economic factors must be considered. The technology required tools and parts not available in Iran, which increased the cost of transfer and setup. Lead type wore down over time and had to be replaced with new type, but Iran had no type foundries. Importing new type was time-consuming, expensive, and inefficient. After a while, the printing houses would face disruptions and eventually close down. There was also a need for skilled printers, and with the lack of an educational system at that time, skilled replacements were few. This explains why during the reign of Abbas Mirza, individuals were sent to Russia several times to learn and transfer printing equipment.

In addition, printed letters did not appeal aesthetically to Iranians fond of calligraphy. For this reason, three decades after the transfer of letterpress to Iran, it was replaced by lithography, which had simpler technology and was more compatible with Iranian aesthetic tastes. Lithography thrived in Iran for half a century. Finally, as technology improved further and Iran built new international relations, letterpress was again transferred to Iran in the late nineteenth century, in the closing years of the Qajar era. Throughout this period, Iran remained an importer of printing equipment, Persian type, and associated technologies like specialized paper and ink for printing.

## Conclusion

The transfer of printing technology to Iran in the early Qajar period depended on several key factors, the most important of which was political will. Abbas Mirza decided to import printing technology from Russia for several reasons. After being defeated in the first war with Russia, he emphasized the need to acquire new military technology. He also needed propaganda to defend himself against political rivals at court. The publication of the first two books, *Fathnameh* and *Ma'ather Sultaniyyeh*, about the first war with Russia, confirms this reasoning.



Abbas Mirza's priority in importing print technology to Iran was publishing works about his own actions, and secondly acquiring knowledge in military and other technology. But why Russia, the country Iran was at war with? Aside from the proximity to Russia, which enabled the swift transfer of printing technology to the Tabriz Dar al-Saltaneh, Abbas Mirza's seat of power, new diplomatic relations with Russia after the Gulistan Treaty were significant. Despite his defeat by Russia, Abbas Mirza enjoyed Russia's support according to article four of the Gulistan Treaty.<sup>68</sup> After the Gulistan Treaty, he established significant relations with Russia, dispatching students to Europe via Russia and importing letterpress technology in 1817 and lithography in 1825.

The second factor was the small portable metal printing press. The production of this new technology in early nineteenth-century Europe was an important factor in transferring print technology to Iran. The new press invented during Europe's Industrial Revolution reached Iran and other countries as a result of mass production. Muslim regions like Egypt and the Ottoman Empire also received it concurrently with Iran. Aside from Iranian Armenians who were successful merchants connected to Europe and managed to build a press similar to Gutenberg's in Iran during the Safavid era, Iranians had no access to Gutenberg's invention. Gutenberg presses were very large, extremely expensive, hard to ship, and required skilled workers. Mass production and the spread of small printing technology in the world coincided with the perceived need for the new technology domestically.

Geographic factors were equally as influential as political issues in spreading print technology. In the early nineteenth century, printing technology spread via port cities. Looking at major print centers, the importance of geography in technology transfer is clear. Port cities like Istanbul and Calcutta are examples, while cities with thriving printing houses like Lucknow and Kanpur were connected to Calcutta by favorable roads. Similarly, Cairo and Baghdad benefited from navigable rivers. In Qajar Iran, ports were far from the political and commercial centers of Iran, Tehran and Tabriz, and the poor

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<sup>68</sup> Khavari Shirazi, *Tarikh-e Zulqarnain* [History of the Two Centuries] (Tehran: Ministry of Culture and Islamic Guidance, 2001), 363.

condition of the roads meant transporting heavy equipment from the major ports on the Persian Gulf and Caspian Sea was a lengthy and hazardous undertaking. This was an important factor in the underdevelopment of printing in Iran. Geography and machinery interact in producing technological products. For this reason, technology transfer to Iran during Abbas Mirza's reign was limited to portable ware like hand presses and small weapons.

Furthermore, Iran's ports, unlike Bombay, Cairo and Istanbul, had limited interaction with European countries. Anzali, the most important Iranian port on the Caspian Sea, only interacted with Russia, especially after the Gulistan and Turkmenchay Treaties gave Russia exclusive shipping rights on the Caspian Sea. Bushehr, the most important southern port, mostly had commercial ties with British India and the British East India Company. Meanwhile, the most important trading cities at that time were Tehran, Isfahan, Shiraz, Tabriz and Mashhad, which were all distant from ports and connected through unfavorable mountainous routes. Political security and stability also impacted the transfer of cultural goods: due to political instability in the late Safavid to Fath Ali Shah periods, no serious effort was made to transfer printing equipment. Printing technology was also initially transferred by direct order of the Crown Prince, and as Iranians became familiar with it, the private sector also came to play a role in its transfer.