

*Full Length Research Paper*

# Revisiting history of Gafat: Was emperor Tewodros's military reform an attempt at "translative adaptation" of western technology?

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Gafat is now a desolate spot located a few kilometers Northeast of Dabra Tabor, capital of South Gondar. Some one hundred and fifty years ago, it was a busy village. It was there that Emperor Tewodros II (1855 to 1868) set up his foundry to produce modern arms. Gafat did witness the production of many mortars including the largest one named "Sebastopol." The purpose of this study is to evaluate the modernization policy of Emperor Tewodros. The paper also tries to explain why that technology failed to take root in Ethiopia. The author has examined both primary and secondary sources to conduct a historical investigation on Tewodros's attempts at modernization. The author has also paid personal visits to the Gafat village twice. During the second visit in September 2015, he managed to locate the place where the blast furnace was set up to produce mortars. In addition, attempts have been made to critically evaluate and reinterpret available documents. The main findings of this paper show that Tewodros was trying to implement "translative" adaptation of western technology in order to modernize his army. However, the objective condition of the country at the time did not allow the realization of Tewodros's dreams.

**Key words:** Gafat, craftsmen, military technology, missionaries, mortars, modernization.

## INTRODUCTION

One hundred and sixty years ago, a minor chief from Quara came to the foreground of the Ethiopian political stage after out-braving the major regional rulers in a series of battles that culminated in his coronation as Emperor of Ethiopia. That was Tewodros II, one of the "towering figures" of the nineteenth century, who is best remembered for his heroic efforts to end the divisive politics of the *Zemene Mesafint* (the Era of the Princes)

and unite Ethiopia under a strong central government (Pankhurst, 1990: 233; Bahru, 1998: 150; Abir, 1968: 183; Marcus, 1994: 68). His unification policy was interwoven with another equally appealing reform-modernization. Among other things, Tewodros attempted to abolish slavery and the slave trade, polygamy, as well as robbery. He was also determined to introduce land and religious reforms. Above all, Tewodros set out to

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introduce European technology to Ethiopia so as to put the country on an equal footing with European powers (Rubenson, 1976: 178; Crummey, 1972: 119-120). Mainly due to the internal instability and the external threat from Egypt, Tewodros gave precedence to his military reform over other issues. His overriding concern was, therefore, the creation of a well organized, highly disciplined and better-armed standing national army (Bahru, 2002: 28, 32; Rubenson, 1966: 62; Pankhurst, 1990: 127).

In fact, Tewodros's desire for military technology is said to have been begun in 1848 soon after his unfortunate engagement with the Egyptian invading army at Debarqi. In the first instance, he attempted to produce explosives by hollowing out logs and stuffing them with gunpowder (Bahru, 1991: 33; Rubenson, 1966: 62). That he hollowed out a canoe from a log as a first step to establish a small navy in Lake Tana is another self-evident ingenuity of Tewodros (Blanc, 1970: 147, 164). Tewodros decided to augment his single-handed efforts of military technology by employing foreign artisans as early as 1855. His strong need for foreign technicians coincided with the influx of European missionaries. Among the missionaries, the Protestants had been given some sort of training in craftsmanship in addition to their theological instruction. That made them fit for the production of arms Tewodros decided to commence (Crummey, 119-120; Bahru, 2002: 38; Marcus, 1994: 69). Hoping to capitalize on their essential skills, Tewodros eagerly awaited for the arrival of Protestant missionaries from the Chrischona Institute of Basle, Switzerland, sent by Samuel Gobat, the then Anglican Bishop in Jerusalem. Tewodros is said to have received from the missionaries scriptures as gifts. He was not, however, impressed with the gifts. On one occasion, he told John Bell, his British confidant, that "he would have been more pleased with a box of English gunpowder" than with those religious books (Pankhurst, 127).

### The Gafat Arms Foundry

Tewodros settled the missionaries at Gafat, a place near his capital, Debre Tabor. They were later joined by additional missionaries and adventurers. The first settlers at Gafat included the missionaries from the Chrischona Institute (M. Flad, C. Bender, G. Kienzlen, K. Saalmuller and T. Waldmeier) as well as adventurers like Jaquin and Bourgaud, both French artisans, and Moritz Hall, a Polish-Jew soldier (*Ibid.*, 127-128; Rubenson, 1976: 179). Gafat Village, photo was taken by the author, September 2015 (Figure 1). Tewodros established amicable relation with these Europeans. The latter were allowed to open a school at Gafat to teach reading and writing as well as technical skills to young Ethiopians. In addition, they were engaged in the production of metal tools, the construction of roads and the repairing of old rifles (Crummey, 1970:

127-128; Myatt, 1870: 36; Blanc, 1970: 37). Tewodros who had unflinching determination to build an invincible artillery power regarded those skills of Europeans as a light at the end of the tunnel towards the realization of his dreams. In 1861, therefore he ordered those Europeans at Gafat to establish a foundry (Blanc, 37; Pankhurst, 128). Ironically the missionaries who had come to proselytize "ended up being commandeered to manufacture weapons ... by a Christian Sovereign [Tewodros] who wanted from the Europeans their science, not their religion." (Bahru, 2002: 34). For those European artisans Tewodros's exigent demand was a tough nut to crack. Henry Dufton, who came to Ethiopia in 1862, has left us a graphic description about the difficulty of Europeans to get along with the emperor's order: ... things went on smoothly for some time, until one day an order came from his Majesty to the effect that he wished them at once to commence the construction of mortars and bombshells. The order came up on them like the bursting of a bomb itself, for none of them had ever had an idea...to undertake work of that description. They of course demurred, informing the king that ...they were totally unprepared to enter into an engagement of that description... (Dufton, 1867: 83-84).

They told the emperor that they had neither the knowledge nor the capability to manufacture cannons and mortars. They had even advised him to import them from Europe. None the less, Tewodros remained unconvinced. He went on insisting Europeans to give him a helping hand in the production of modern weapons locally (Dufton, 1867: Blanc, 37-38). Realizing that further resistance would bring about the enmity of the Emperor, the missionaries agreed to begin the project through trial and error. It was soon found out that some of them like Moritz Hall, Bourgaud and Jaquin had some technical know-how in iron-casting. The latter had even expressed his readiness to undertake the production of a mortar in collaboration with his companions (Dufton, 84-85; Pankhurst, 128; Crummey, 132). The installations of the bellows and the establishment of the blast furnace were accomplished without much difficulty. With respect to those first trials and tribulations, Theophilus Waldmeier, a member of the workforce, recorded:

*... after much time and many efforts, the day for pouring arrived. A great crowd stood around the furnace awaiting the happy result while the others worked the bellows with great speed... M. Jaquin soon noticed that the work had failed, for the furnace ... had melted before the iron reached melting point. The Frenchman began to lament and weep; he went half-mad ... and finally asked for the king's permission to leave (Pankhurst, 128).*

Although, the missionaries expressed their inability to carry on the work grounding their difficulty on ignorance, Tewodros urged them to try again. He is said to have remarked: "If you are my friends try. If God allows it to



**Figure 1.** Gafat Village. Source: Author (September, 2015).

succeed, it will be well. If not, it will be well" (*Ibid.*). Under the direction of Moritz Hall, the work was resumed. A new blast furnace was set up. After a series of attempts, the first mortar was produced. Tewodros is reported to have "jumped with happiness and thanked God." In a trial-run, some balls were fired and they produced reverberating sounds (*Ibid.*, 128-129; Dufton, 85).

Tewodros then rewarded his European artisans with a sizable sum of money and adorned mules and horses. Above all, he showed his unreserved affection to them (Dufton, 85-86). The emperor did not, however, feel complacent. The initial success only served as an inducement to make unflagging demands for the manufacture of bigger mortars. Moritz Hall consented to the emperor's demand asking only for full cooperation from his fellow Europeans (Pankhurst, 129). After unrelenting efforts, the workmen were once again successful. Waldmeier, who went to great pains along with other Europeans, expressed the emperor's happiness in the following terms:

*"The king was well pleased beyond all measure with our little piece of metal, kissed it and cried. Now I am convinced that it is possible to make everything in Habbesh [Ethiopia]. Now the art has been discovered. God at last has revealed Himself. Praise and thanks be to Him for it (Ibid).*

Tewodros was ready to give everything he had as a reward for his European workmen. But he kept on asking for still bigger mortars and cannons. By 1862, the production of cannons and mortars was showing a good

headway (*Ibid.*). Meanwhile, Tewodros intended to bring professional craftsmen from Europe. Since Britain was the leading industrial power, he put a strong trust on the British government. He, therefore, sent a series of letters to Queen Victoria and her officials pleading for all kinds of artisans. Although, Tewodros told the British in no uncertain terms about Ethiopia's backwardness and the need for modernization so as to win their hearts and minds, they remained unmoved (Bahru, 2002: 37; Pankhurst, 130). When he noticed that his letters were ignored, Tewodros sent in 1864, one of the missionaries, Martin Flad to Europe to recruit skilled workmen. Again in 1866, Tewodros tried to import artisans from Europe with the help of Hormuzd Rassam, an envoy of the British government. He expressed his readiness to welcome any skilled artisans and pay for their labour (*Ibid.*). In the meantime, the workmen at Gafat were pressed on to manufacture ever larger weapons. By the beginning of 1867, they were ordered to produce a huge mortar with a large capacity of fire power. "We were afraid to re-fuse," remarked Waldmeier, "we were afraid to obey, but God did not abandon us". The Lord helped us by getting our work succeed" (Pankhurst, 1990:131). Thanks to the workmen's relentless efforts, the largest mortar which was named "Sebastopol," was produced. It was estimated to weigh about 7000 kilograms and allowed a man to "get into it." According to contemporary reports, the manufacture of the "Sebastopol" was one of the "happiest [days] of his life." On the whole, about 37 cannons and mortars were produced at the Gafat foundry (*Ibid.*; R. Caulk, 1972: 610-614).

Towards the end of 1867, however, Tewodros was

forced to terminate the production of weapons as a result of the ever-worsening political situation within Ethiopia and the deterioration of his relations with the British. Although, he had repeatedly requested the British to help him in his modernization programme, they turned a deaf ear to his plea. Tewodros then reacted by detaining the British consul, Captain Cameron and other Europeans. His action precipitated the British military expedition to Ethiopia (Bahru, 1998: 136). Mainly for strategic reasons, Tewodros decided to abandon his capital, Dabra Tabor and move all his cannons and mortars to Meqdela, a strategic plateau east of his capital. Some twenty wagons were prepared to transport them. Tewodros had to cross a very formidable terrain to reach Meqdela. Members of his dwindling army had to construct the road for the wagons while others were engaged in dragging the mortars and cannons. The Sebastopol alone needed about 800 people to drag it (Myatt, 114). Because of the enormous difficulties of dragging the huge mortars, "what was normally a week's journey, took almost six months" to reach Meqdela (Rubenson, 1976: 256). It is highly unfortunate that, despite all these efforts, the mortars and cannons could not bring about the desired effect on the British expeditionary force. Waldmeier tells us why the mortars failed to deter the British troops: "One of the artilleries had no ball, the second had run out of powder, the third had lost its slow match, the fourth had in the rush pushed down the ball first into the bore and then the powder and was now unable to get the shot out again" (Rubenson 1976: 264). As a result, in a letter to the British commander, Robert Napier, Tewodros attributed the defeat of his army to the ineffectiveness of his mortars: "Believing myself to be a great lord, I give you battle; but by reason of *the worthlessness of my artillery*, all my pains were as nought" (Bahru, 2002: 42) (Emphasis added). In a fierce engagement with the British expeditionary force, which was about eight times greater than that of the Emperor's army, Tewodros lost many of his soldiers and commanders including his trusted military leader, *Fitawrari* Gabreye. The British commander asked the Emperor to surrender. But that was unthinkable for Emperor Tewodros. On April 13, 1868, which happened to be Easter Monday, Tewodros II committed suicide. That earned him the admiration and respect of many generations of Ethiopians (*Ibid*).

### **Was emperor Tewodros's military reform an attempt at "Translative adaptation" of western Technology?**

The concept of "translative adaptation" has been developed by an economic anthropologist named Keiji Maegawa from Tsukuba University. According to Maegawa, "translative adaption" does not mean absorbing everything from the west and abandoning one's culture. For him, it means taking western technology "not in the original form but with modifications to fit local needs." That is what the Japanese government

did following the Meiji Restoration (quoted in Ohno, 2006: 5-6). Kenichi Ohno, borrowing the concept of "translative adaptation" from Maegawa, elaborates that it was the Meiji government that paved the way for rapid modernization and industrialization. The Meiji rulers "permitted Japan to absorb new foreign influences flexibly in a multi-layered fashion and succeed in the translative adaptation of Western thought and technology" (*Ibid*, 11). Was this kind of "translative adaptation" of Western Technology ever attempted by Emperor Tewodros II? The answer is yes. This is evident in one of his letters: I am sending Mr. Flad to Europe. I am seeking skilled artisans. I shall gladly receive all artisans who come to me. If they stay, I shall ensure that they live happily. If they wish to return to their country, once they have taught their skills, I shall pay their salary and let them leave happy and with an escort (Girma and Appleyard, 1979: 336). What makes Tewodros's attempt different from the Japanese experience is the fact that while the Meiji rulers sent cabinet ministers as well as students to Europe and the United States to learn western technology (Ohno, 44), Tewodros wanted European technicians to come to Ethiopia and teach his countrymen the art of producing modern arms.

Unlike the Meiji emperors, however, Tewodros was not fortunate enough to introduce western technology into Ethiopia. Although, he was attempting to effect the Japanese type of "translative adaptation" of western technology, the reality on the ground did not allow him to realize his dream. Undoubtedly, Emperor Tewodros was regarded by several writers (Rubenson 1966, 1976, Waldmeier and Pankhurst 1990) as a visionary and he was in most cases far ahead of his time. Nevertheless, the enlightenment and modernization he envisioned had not been shared by his countrymen who were illiterate. It was rather a solitary dream with no mass support. How could western technology be adapted in a country where there was widespread illiteracy? The regional rulers he subdued rose up in rebellion to restore their power. The mass of illiterate peasants were tired of civil wars and wanted to be left alone and were not in a position to support the emperor. Members of the clergy, the only literate people of the time, stood against Tewodros mainly because of two reasons. Firstly, the emperor attempted to confiscate land from churches and monasteries and distribute it among poor peasants so as to get financial resources for his military reforms. Secondly, he tried to reduce the number of the clergy to five (two priests and three deacons) in each church (Bahru 2002: 35; Abir 1968: 183-184). In the final analysis, therefore, Tewodros faced widespread opposition from almost all sections of the population. In the last letter he wrote to General Robert Napier, Tewodros lamented: "My countrymen have turned their back on me and have hated me, because I imposed tribute on them, and sought to bring them under military discipline" (Rubenson 1976: 270). The expectation that

the vision of Tewodros would die with him is reflected in accounts of the British consul, Walter Plowden who predicted: "...if he [Tewodros] does not succeed in effecting an improvement, no native of the country ever will" (Ibid, 269). Similarly, Henry Dufton expressed his frustration after the death of Tewodros. For him, Tewodros was "the first and the only patriot Abyssinia ever saw, and assuredly, will be the last" (*Ibid*).

## Conclusion

Tewodros II was probably the first emperor of modern Ethiopia who clearly understood the importance of adapting western technology. The approach of emperor Tewodros to adapt western technology was quite different from the methods used by the Japanese emperors. It was his wish to get skilled technicians from Europe more particularly Great Britain so that these Europeans would teach his countrymen the art of manufacturing mortars and other modern arms. In contrast, the Japanese Meiji emperors sent their own men to Europe and the United States to study western technology and adapt it to their needs. Although, Tewodros persistently asked for European technicians to teach his countrymen science and technology in general and the production of arms in particular, his request was ignored by the British government. To make matters worse, he faced powerful internal opponents from every corner of the country that forced him to spend his time in military campaigns. In the final analysis, therefore, Tewodros's dream of adapting western technology was shattered by the absence of cooperation from the British government and internal opposition from his own countrymen.

## Conflict of Interests

The author has not declared any conflict of interests.

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