

**IRON PRODUCTION IN THE NKAR ETHNIC GROUP OF THE  
GRASSFIELDS OF CAMEROON: THE PLACE OF TRADITIONAL  
MEDICAL PRACTICES**

**ATLEE DZEAWONI**

PhD Research Fellow, Department of History and Archaeology,  
The University of Bamenda

**RICHARD TANTO TALLA,**

Professor of Ethno-Historical Archaeology,  
The University of Bamenda

**VICTOR NGU CHEO,**

Associate Professor of Communication,  
The University of Bamenda

<https://doi.org/10.37602/IJSSMR.2022.5407>

**ABSTRACT**

In the production chain of the African iron working industry, symbolism was present all through these processes. The environmental and cultural context in which these operations took place, were reflected in the type of furnaces, and techniques used in each iron working agglomerate. Symbolism in this study is linked to traditional medical practice, which was identified in the iron working agglomerates in the Nkar polity. Nkar is found in the higher plateau of the Grassfields of Cameroon. This paper made use of primary and secondary sources; together with archaeological techniques as methodology. The study revealed that, in the Nkar ethnic group, traditional medical and pharmaceutical practices were absorbed by iron workers on part time basis. This probed up because, accidents occurred in iron, kaolin and flux mines, and in the dangerous activity of smelting and smiting. These incidents needed first aid treatment. The ability of iron workers to effectively handle these ailments; linked them to traditional medical practitioners as a societal phenomenon. This paper concludes that, the ability of iron workers to handle medical conditions demonstrates an element of symbolism in the African metallurgy, and that, smelters could experiment and implement pharmaceutical/medical procedure. They however, remained mystical in approach.

**Keywords:** Symbolism, smelting, smiting, Nkar ethnic group, traditional medicine, pharmaceutical practice.

**1.0 INTRODUCTION**

In the production chain of iron working in Africa, the whole process was accompanied by much symbolism, which gave this industry its peculiarity, as compared with other iron working regions in other continents. The cultural context, within which iron production took place, remained a determinant factor as to how operations in this profession were organized. In this light, scholars such as (Essomba, 2004: 135-136), consider iron production in African

ethnic groups, as a societal phenomenon. On his part, (De Maret, 2004: 127-128), opines that, the cultural context, which includes beliefs, institutions, arts, festivals, modes of production, social stratification, laws and customs; within which iron production operated, must be taken into consideration, in order to better comprehend the area under investigation. There is however, a problem as to whether, symbolism as an aspect of the African iron industry had any scientific basis. The second issue is, whether these symbolic practices, actually had an impact on smelting, smiting and production levels.

In the African context, iron production went alongside specific roles assigned according to gender. These took the metaphoric sense, as the hearth was regarded as female, while the bellows and tuyeres were male. In the same line of reasoning, the furnace became a temporal wife, before and during smelting. This implied that, at the time iron works went on, wives of smelters became temporal widows. This explains why, female anthropomorphic expressions were very often incised on the furnace, in parts of the African continent. Several restrictions, and taboos accompanied iron working in Africa. Sexual activity during iron works was banned, as it was considered to be adultery. It was believed that, the disrespect of this code resulted to a failed smelt. Restrictions and taboos related to foundries, smithies abound in Africa. Iron working sites were believed to have sacred infrastructure, and were not open to all persons in every community. Very often, there was intolerance towards non-clans men, women, children and the uninitiated. However, these groups of persons played varied roles in the production chain (Mc Cosh, 1974: 160,164).

Nkar highlands are found between latitude 6.2617 and longitude 10.686, at an altitude of 1650 to 2086 m, above sea level.<sup>1</sup> The Nkar ethnic group, have boundaries in the east, with the Bamun ethnic group in the Noun valley, and with the Nso' ethnic group in the north. She has boundaries to the south, with various ethnic groups of the Ndop plain, and to the west, with the Oku group in the Kilum mountain forest area. Given the distance of the Grassfields as a whole, and particularly the Nkar highlands from the sea; its latitude and high attitude, rainfall distribution averages, 2525 mm per annum. The area experiences the dry and rainy seasons, which are subjected to influences from the Sahara hot pressure belt, and its north-east trade winds, that are hot and dry. The south-west winds, bring moisture from the Atlantic Ocean, accompanied by moisture, which leads to high humidity, and an unstable rainy season. Rains are very often accompanied by hailstones, misty and a constantly foggy atmosphere. The intercontinental convergence Zone (I.T.C.Z.), moves across the Nkar highlands, and marks the period of unstable weather, in its journey between latitude 4<sup>0</sup> to 10<sup>0</sup> N (Gwanfogbe & Melingui, 1993: 14-15).

The advancing Sahara desert, deforestation and the farming practice of slash and burn, have produced a grass cover vegetation, called the tropical savannah, with patches of relic forests which have survived at Vekovi (*Ngonghaa*), Kov Nkar, Ndzerem, and in many river valleys which have grooves of palms, ferns, moss and creeping plants. These grass lands form a continuous tropical savannah, having kikuyu (*sporubus*) grass cover. The alternating dry and wet seasons, causes soil wash, especially in its mountainous steep slopes. This affects the volumes of the streams, and intermittent springs, which flow from the watersheds in the hills, and sometimes completely dry out in the heart of the dry season (Yufenyuy Muhamed, (2020:

---

<sup>1</sup> G.P.S Readings

110). These geographical elements dictated a smelting technique that warranted massive furnaces, with thick walls that could hold heat in a cold area. It also warranted the use of paraphernalia that was found in the tropical savannah.

This geographical environment in the 18<sup>th</sup> and 19<sup>th</sup> Centuries accommodated intensive centres of iron production, identified by earlier researchers in the Grassfields of Cameroon.<sup>2</sup> Huge quantities of slag have been identified in the Nkar polity as evidence of ancient iron working agglomerate. These sites are found in Kwa,nso, Ntur, Vekovi, Taavisa 1, Taavisa 2, Wainama, Mantung, Shiy, Nderem and Kov-Nkar. (Fowler 1990: 508). Kov-Nkar happens to be the administrative headquarters of the Nkar polity, with the highest concentration of slag heaps surveyed in this study. The processes of iron production, with its peculiar elements of symbolism within a cultural context, and as a societal phenomenon, are clearly manifest in Nkar. This study thus, focuses on one of such elements which is, the link iron production had with pharmaceutical and traditional medical practices in Nkar.

In Nkar, women who brought objects for repairs, or came to purchase iron ware, usually sat outside the workshop; however, a female whose genealogical link was traced to the iron working family, could enter the workshop, participate in a forge, or have a sit. When a female was on her menstrual period, a visit to a smithy was forbidden; though, a woman on menopause, and no longer procreating, was allowed, and even granted access to rites of initiation, purification, and installation of a new smithy workshop.<sup>3</sup>

In Nkar, restrictive procedures, and ban or interdictions also manifested themselves. Workshops belonged to the category of cult groups called (*Mban-kilam*). Blacksmiths could not come into contact with the regulatory society (*Nwerong*) sacra, even though they belonged to this social class of "commoners". They were also banned from entering the warrior brigades (*Manjong*), with a scabbard and cutlass hung to their chest. Within the black smith society, not all had the privilege to fabricate and repair *Nwerong* sacra, and the palace ironware of rank and file. Also, only initiated blacksmiths were allowed to fabricate and repair the female cult iron ware orchestra called (*chong*).<sup>4</sup>

In Nkar, the entrance to the traditional smithy workshop at Kong, which belonged to blacksmith Laayeh was found in a forest grove. At its entrance, a sizable stone monolith which rises to 60 cm above the surface, and adorned with peace plants (*dracaena deistelina*), was found 5 m, in to the workshop. By all standards, this is a shrine. On this stone, he makes a libation of palm wine. The spilt wine trellis on the ground is believed, indicates if smiting will be smooth, or an accident or injury may occur.<sup>5</sup>

In these shrines, its members went through a number of rites which were in five stages as follows: first, the right to work on an anvil (*tang tiy*); secondly, an introduction to paraphernalia used in the smithy, and how to harvest herbs and leaves from the natural environment (*tang vikwiy*); thirdly, access to sit with elderly smiths around the hearth

---

<sup>2</sup> These earlier researchers included: Jeffreys, Keberry, Goheen, Warnier, Nkwi, Zeitlyn, Assombang, Fowler and De Maret.

<sup>3</sup> John Laayeh, Aged 55 (Black Smith), Nkar, Interviewed 7th June 2021

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

(*Shuukiy*); fourthly, the right to know its inner secrets and installation of a smithy (*Nkoh Kilam*). At the last stage, an iron worker should be inspired "have eyes", to read the trellis spill of wine offered to the deity of the smithy, believed to be hosted in the stone (*Nyuiy Kilam*), at the entrance to the smithy.<sup>6</sup>

With these restrictions seen above, the concepts attached to iron works in Nkar classify smithies in the category of sacred social professional groups, within a cultural context, rather than a simple manufacturing guilt, as would be perceived in a foreign (European or Western) sense. While evoking ancestral spirits in processing iron, the importance of symbolism as a mental booster is posited by McCosh thus:

Just as in pre-Enlightenment, pre-seventeenth century Europe, the alchemist experiments depended much on the mental condition of the practitioner, so the ritualistic aspect of the smelters work, the blacksmith's work and the smelting process appeared one and the same subject (...)." (Mc Cosh:162).

This view held by Mc Cosh indicate that, in spite of rituals and rites practiced in the African iron industry, the aspect of a mental booster, as a positive contributing factor to productivity remains. It is therefore in this same light that, this paper has investigated the uses of various substances, used to treat ailments that occur during smelting and smiting.

Variations in the domain on symbolism abound in Africa, and in the case of Nkar, two elements are very common. First, there was restricted access to women under menstruation, and a ban on sexual activity during the period of a smelting and smiting. This concept in Nkar also extended to the fear of menstrual blood, which as waste was dreaded, and was thus also symbolically linked to slag. Smelters however believed that, menstrual flow was sacred, because of the link with ovulation and commencement of life (Mc Cosh:165).

It is also from this conception by iron workers that, this paper teases out the positive notions which accompanied symbolic practices in the iron working industry. In this same light, Van der Merwe and Avery brought out in Malawi, the importance of medicinal plants, which went alongside taboos, and rites associated to the African iron industry. They also bring to the lime light; rocks, animals and objects, which had direct effects on the psychic of smelters, produced plagues, and caused ecstasy during smelting. According to these Scholars, these positive elements represent symbols of power, resilience and fertility (Van der Merwe & Avery: 143).

This paper thus distinguishes two areas of interest: first the attachments of traditional pharmaceutical procedure and devices to iron working in Nkar, and by extension, its links with the cultural practices of traditional medicine men and women. Secondly, procedures which go along side iron working such as: installation rites, rituals, magic and sorcery. The choice of this paper is the first procedure, which deals with pharmaceutical practices. The objective of the study is to discern if paraphernalia, rocks, animal parts and objects used in the iron working industry in Nkar, had pharmaceutical value, and if they did sustain the production chain. The real chemical characteristics of components, used in treating various

---

<sup>6</sup> Shey, Wo Vijam . Aged 74 (Elderly Blacksmith), Nkar, Interviewed 15th January 2021.

ailments that occurred during the production of iron, therefore, need to be investigated. In doing so, this paper holds that, these symbolic practices sustained, and enhanced iron production.

## 2.0 IRON PRODUCTION IN NKAR

Iron working differed in the various parts of Africa, because of varied environmental characteristics, the origins of the knowledge of smelting used in a particular area, beliefs of the ethnic group in question, its cultural practices and interactions with neighbouring groups. To produce iron, the ore was dug from a mine, and carried in baskets to a stream, where it was cleaned from impurities and soils, and then sunned to make it dry. A flux was obtained from mines which hastened the bloom to be produced at a temperature of about 1200<sup>0</sup> C. Clay was also mined and mixed with straw, to produce tuyeres, and to build furnaces in which combustion took place. Animal skins were obtained to make bellows, which produced air blasts in a process of forced draughts.

Charcoal was obtained from highly combustible trees found in the environment as also processed to have a high B.T.U. (British thermal unit) content. A foundry was built where smelting took place but with no walls as to allow for air circulation. Its roof was also high enough so that, the thatches will not catch fire. It was also well structured, to have an orderly and successive chain of activities, within this hut. Products from a foundry were mostly iron bars, which were then sold by barter to blacksmiths, who produced iron ware in their smithies (Okafor: 43-54). In Nkar, these processes were evidenced at Kov-Nkar, Taavisa 1, Taavisa 2, where thin cylindrical and massive furnaces were found, and the open bowls 19<sup>th</sup> Century iron workers operated. Symbolism accompanied these processes in Nkar; where in one of such was traditional medicine and pharmaceutical practices.

The smithies found in Nkar till date, belong to a category of cultural sacred units called (*mban*). Entry to these "cottage" factories is barred except to initiates. In most male sacred societies in Nkar of this category, all rites are carried out when its adepts put on trousers, but with a bare body and bare feet. This was also the practice in foundries, though with heat in these venues, it was convenient for all smelters to work bare body. These spots were indicated by the squashed soft shoot of palm fronts (*kirang*). The process to install a foundry and smithy required rites and rituals, which were performed in a sequence. Worthy of note is the last stage in this sequence, which was the mystical verification, to check if the procedure has been successfully carried out, and would yield the desired smelting/smiting results. The use of paraphernalia known only to this class of professionals, attached them technically to medicine men of Nkar (*Angaashiv*). It was therefore normal that, traditional medicines related to smelting and smiting were mastered by iron workers. Some of these smelters and blacksmiths became fully immersed in to traditional medical practice, usually on part time basis. For this reason they were conceived by society as endowed with mystical powers, besides the same attributes which the industry already was given in most African ethnic groups.<sup>7</sup>

## 3.0 IRON PRODUCTION AND TRADITIONAL MEDICAL PRACTICE IN NKAR

---

<sup>7</sup> Augustin Bongchor, Aged 76 (Black smith), Nkar, Interviewed 20th December, and 30th June. 2021.



Smelters and blacksmiths ran the risks of accidents during the exploitation of ores, stone anvils, stone hammers, fluxes, wood and charcoal. During smelting and smiting, there was the process to raise high temperatures, manipulation of the bloom, gangue and slag, at very high temperatures, which resulted to accidents and injuries. There was therefore, the need to handle any of such occurrences on the spot. This explains why smelters became involved in traditional medical and pharmaceutical practices, first for purposes of first aid, and then, a sustained healing process.

It was a common practice that, as pre-emptive measures, smelters used charms and amulets prepared by medicine men, to be worn on the ankles, armpit and across the shoulders, when working in mines and foundries. Some of these were prepared by smelters themselves knowledgeable in the art.<sup>8</sup> Some of these protective devices were in the form of vines, such as the creeping type called (*Koonteh*), worn on the wrist, at ore and flux mines. It was believed in Nkar that, this was a protection against accidents and mystical protection in case mine collapses. Blacksmiths believed that, water held in the cavity to mix clay on the left lee of the furnace, on which fragments of bloom and slag dropped, was force enhancing and a stimulant, when seeped in small amounts. It was also believed to be an efficient cure for all kinds of skin rashes.<sup>9</sup>

In langhee 2, (see plate 1 below), this presents as an assembly spot, where smelters gathered to prepare powder and liquid concoctions for use in the foundries.



**Plate1: Traditional Medicine Pharmacy at the foot of Laghee 2 Slag Heap/ hollow grinding stones**

Source: (@atlee) field Work Photograph June 2020, Supervised by Prof. Talla & Prof. Cheo.

<sup>8</sup> Bongchor, Interviewed 20th December, and 30th June. 2021

<sup>9</sup> Ibid.

The slag heap above is found at Langhee 2, which begins after the sun lighted spot. Three relic hollow stones very visible above is evidence of the process to produce a wide range of powders called (*kum*). It was mixed in a pharmaceutical practice called (*kangshiv*), and the powder produced, was shared to the participants. This product was taken back to the various foundries by smelters, who had harvested the different paraphernalia required, and other medicine men present. A smelter, who was not physically present, was allowed to later collect his share from any of the persons who participated in this rite.<sup>10</sup>

The following ailments were believed to be treated by blacksmiths:<sup>11</sup>

A Wound with blood oozing out, was treated with hot charcoal powder and wood ash from the furnace. Fire accidents and iron fragment wounds, from projectiles, were equally treated with wood ash and a softened "king leave" (*Shijiy*). A cataract was also treated with the "king leave". A rash and bed sores (*kivave*), was treated with slag ash, while a swollen stomach was the specialty of the smelters, who treated it with the powder (*kum*).

Intruders, and women who had trespassed into a foundry, and to the smithy inner core, were treated with paraphernalia mixed with water and wine (*kiwoy*), and aspersing done on the individual, who was given part of it to drink. Persons who illegally collected an item from the foundry, were believed to be affected by vertigo, and were treated same as above.

Rheumatism and Rhinitis (*vinseeey*), were treated with hot broken tuyeres at tolerable temperatures, tied to the ankles, while the patient was in a sited position. Fractures were straightened with warm, and hafted broken tuyeres, tied together by dried banana stem peelings, while hot compresses were done with freshly used tuyeres.

Iron production equally went along with elements of sorcery. It was believed that, witches and wizards in Nkar transformed to owls, and flew at night, to harm their victims spiritually and even physically. This was thought to manifest by way of: illnesses, mishaps, miscarriages, madness, nightmares and restlessness. These witches were believed to be weakened if they flew over a foundry and a smithy.

Theft of the foundry and smithy tools, and objects was sacrilege. It was also forbidden to skip over anvils, foundry tools and objects, as an unwritten code of conduct in these venues. An unauthorized entry into a foundry and smithy when sacra objects were fabricated was believed to bring (*karma*). Even when a sign was put on the path to the foundry to bar access, a non-authorized class of blacksmiths, women, and some recalcitrant persons broke bounds. This resulted to pollution of such items, which could no longer be used for the destined sacra purpose. A new process had to be re-started, but misfortune is believed to follow the intruder, who become insane or senile, and usually was believed, would never be treated medically.

Sorcery equally was believed to manifest itself, when an inspired person in the art out of anger, mystically caused the scrotum to descend midway to his knees (*se'er njeen*). Such punishment was often meted to a culprit male, who had committed adultery with a smelter's

<sup>10</sup> William Laayeh, William, Aged 83 (Senior of the immigrant family from Ndu, Nyaan-Nkar, Interviewed on the 02nd February 2022.

<sup>11</sup> Ibid.

wife. When reconciliation was achieved, and the smelter was satisfied that punishment was enough, he brought up the scrotum.

Smelters in Nkar were also believed to master the art of manipulating nature by sending thunder. They made use of a small egg, thought to have been laid by a cock, a spear, special paraphernalia, and a female hoe in a process called (*njam*), literally translated as an axe head. Slag and iron bars from Oku, Ntur and Nkar, were highly solicited for this purpose, to ignite forces which were believed produced lightning and thunder phenomenon. The complainant was required to be truthful and honest; otherwise, the counter effect instantly rather affected him, if the suspect was not guilty. Smelters, and all other persons involved in the iron processing chain, were expected to be of high moral standing. This was so because, it was believed they could be negatively affected, if they had committed evil in the society, and came to undertake any aspect of smelting and smiting. In Nkar, the god of iron was incarnated by the *Nwerong* sacra, and was believed did not have sympathy in its actions.

#### 4.0 THE PHARMACEUTICAL VALUE OF SUBSTANCES USED IN THE SMELTING INDUSTRY.

As earlier indicated, the focus of this paper was on traditional herbs, rocks and objects used as first aid treatment. The other mystical processes of Sorcery to punish adultery, inflict pain on thieves and adulterers, inflict illnesses, punish intruders and manipulating nature (*Njam*) by mystical procedure, are not the subject of this paper. Rather, its focus is on iron particles, slag ash, hot charcoal powder, and wood ash as residue from the furnaces that were used alongside paraphernalia. These are elucidated below:

Fire burns and iron fragment wounds that came from projectiles were treated with wood ash and a softened "king leave" *Shijiy*. This mixture was also used to handle oozing wounds and was effective against rashes and bed sores. Hot broken tuyeres at tolerable temperatures were used to handle fractures, rheumatism and rhinitis (*vinseeey*), and water from the trough, which contained ash/iron particles was a stimulant and boasted immunity. Also, the expected high moral standing of smelters was related to mental health. The water trough in the foundry in which work tools were dipped, and clays mixed to repair furnaces and its joints with the tuyeres, contained iron particles, kaolin and wood ash. Kaolin resulted from the decomposition of clays and rocks. It usually appears in a soft and fine malleable form. Its medical use is depicted thus:

Kaolin is a major ingredient in medicines to alleviate stomach upsets by its absorbent properties to bind Gastro intestinal (G I) toxins and control diarrhoea ....It serves as an emollient and drying agent [on the skin] when applied topically. (Adeluola et al 2018: 388).

In the same line of reasoning, charcoal and its particles, that strayed into the water trough, bloom and the gangue. These scholars aver that, charcoal is an antidote which plays a receptor function, when it attracts and acts as a competitor to toxins, and thus absorbs poison. When charcoal comes into contact with water, it hinders the formation and growth of bacteria and algae. Charcoal pastes thus became very effective when applied to fresh wounds in a



mine and foundry. In the digestive tract charcoal absorbed toxins thus hindering it from reaching the blood stream (Neba & Ngole 2021:6)

As for Iron, it appears in various forms as magnetite, limonite and goethide / sidente. Magnetite was abundant in Nkar. Iron is one of the vital minerals that the body needs, and it is used to treat the condition of an anaemic patient; where in, red blood cells are lower than its normal level. Iron is the base from which multivitamins are produced. Iron in the hydrated form as limonite, is used to treat iron deficiency in the body when used as a food supplement (Kaspinska & Kulikowska 2002: 156). In Nkar, this type is found in whirlpools in the Tsemkan stream and Kwenjang river confluence in Nkar,

Wood ash on its part was a very important element used to treat wounds and oozing blood from its victims in mines and iron working sites. Vitamin K in wood ash, particularly helped enhance blood clotting. Potassium found in wood ash had phosphorus, aluminium and magnesium in small quantities, which boasted body immunity, and were energy enhancing. It also had anti-bacterial qualities, and thus of value to handle open wounds ([plumbjoe.com/uses](http://plumbjoe.com/uses) accessed 11/07/2022).

The use of hafted tuyeres to hold fractured legs and arms, and as hot compresses against Rheumatism and rhinitis, were a recognised medical practice. The regular emersion of hot iron bars, objects and tools, facilitated by the use of tongs, made the water trough to be disinfected regularly, and thus fit for consumption. It had a stimulant effect, as was often drunk by iron workers during smelting and smiting, and any other visitor to these sites in Nkar.

An iron worker, remained in a psychologically stable condition due to the respect for the smelting code. This was a reflection of a good mental health. In the same vein, an iron worker who respected sexual restrictions reserved energy, which he offered to the iron working industry. The use of resinous incense (*Kilay*) which was burnt during rites, rituals and iron works, were believed to scare away evil spirits. Also, the use of a slimy concoction (*Kiwoy*), constituting of a mixture of palm wine and water and paraphernalia (*kosteletzsya*) and two other leaves, facilitated digestion and boasted mental health. These attitudes were of value to the iron working industry, and when such a situation was generalised, it enhanced social harmony, and consequently increased productivity.

However, these elements as used in the iron working industry had the pitfall that, they did not respect medical doses nor prescribed appropriate time frame for treatment. Smelters and blacksmiths did not completely detach themselves from the mystical conceptions surrounding accidents in a mine, and during iron working. While undergoing treatment, they often went to sooth Sayers; to find out the cause of any mine collapse and misfortune that befell them.<sup>12</sup>

## 5.0 CONCLUSION

Having examined how iron working was perceived in Africa and particularly in Nkar, this paper has shown how, traditional medical and pharmaceutical practices, became immersed in the iron working industry in Nkar. This was so because; the activity was dangerous and often

<sup>12</sup> Laayeh, Interviewed 7th June 2021.

resulted to accidents that needed first aid. To save life, iron workers treated these ailments themselves. In doing so, they avoided loss of time, energy and costs required to reach a traditional medical practitioner. As full time iron workers, smelters could not also be fully engaged in traditional pharmaceutical and medical practices.

This paper revealed that, symbolism as found in the African iron industry, in the domain of socio-cultural practices was also found in Nkar. The ability to treat various ailments shows that, iron workers in Nkar could conceive, experiment and put to use knowledge of natural resources, rocks and soil contents; meaning that, they could innovate. It also revealed that, smelters who became immersed in traditional medical and pharmaceutical practices, were scientific in their conception and approach, to make use of iron, kaolin, wood ash and charcoal. They however remained essentially mystical in their approach.

In perspective therefore, it will be of interest to proceed in another paper, to study the veracity of the phenomenon which they claim to manipulate nature (*Njam*), and the position human organs (Se'er njeen). Of interest too, will be the need to examine paraphernalia used by smelters and blacksmiths in Nkar, in order to discern their medical and pharmaceutical value.

## SOURCES CONSULTED

**Adeluola, A. Odebowale, Ezeobiora C. Emmanuel, Mendie E. Udoma.** (2018). "Processing and Evaluation of Locally Sourced Kaolin for Pharmaceutical production." *Tropical Journal of natural Products Research* Vol. 2, Issue 8: 288-395. **2022 Copyright plumbjoe.com**, <https://plumbjoe.com>>uses-and-a.

**De Maret, Pierre.** (2004). "Central Africa : Knowing Iron." In *The Origins of Metallurgy in Africa. New Lights on its Antiquity. West and Central Africa*, Ed. Hamady Bocoum, Part two/127-134. Paris: UNESCO Publishing.

**Essomba, J-M.** (2004). "Status of Iron Age Archaeology in southern Cameroon." In *The Origins of Iron Metallurgy in Africa. New Light on Its Antiquity, West and Central Africa*, Ed. Hamady Bocoum, 135-148 Paris: UNESCO Publishing, 2004.

**Fowler, I.** (1990). "Babungo. "A Study of Iron, Trade and Power in a Nineteenth Century Ndop plain." PhD Thesis, University College, London University.

**Gwanfogbe, Mathew & Ambroise Melingwi.** (1993). *Geography of Cameroon*. Basingstoke: Macmillan Press.

**Kaspinska Joanna & Kulikowska Martha.** (2002). "Simultaneous Determination of Zinc (II), Manganese (II) and Iron (II), I Pharmaceutical Preparations." *Journal of Pharmaceutical and Biomedical Analysis*, Vol. 2 Issue 9: 153-158.

**McCosh, W.J.F.** (1974) "Traditional Iron Working in central Africa with some References to the Ritualistic and Scientific Aspects of the Industry." *Zambezia*, Vol .VII, No 2 :155-170.

**Mohamed, Yufenyuy .** (2020). "Climate variability and the Emergence of Malaria: Case of Kumbo Central Sub division, North West Region, Cameroon." *Journal of Global Sustainability* Vol.4, No.1 (2020): 103-127.

**Neba, George & Ngole, Mc Lewis.** (2021). *Pharmacology for Veterinary Nurses and Livestock Technicians*. Bamenda: Data Lens Impression Publishers.

**Okafor, Eme Edwin.** (2004) "Twenty-Five Centuries of Bloomery Iron Smelting in Nigeria." In *The Origins of Metallurgy in Africa. New Lights on its Antiquity. West and Central Africa*, Ed.Hamady Bocoum, Part one/43-54. Paris: UNESCO Publishing.

**Van der Merwe, J. Nicolas & Avery, A. Donald.** (1987). "Science and Magic in African Technology: Traditional African Smelting in Malawi." *Africa*, Vol. 57, Issue 2, (1987): 143-173.

## INTERVIEWS

**Bongchor, Augustin.**(2021) Aged 76 (Black smith), Nkar. Interviewed 20<sup>th</sup> December, and 30<sup>th</sup> June.

**Laayeh, John.** (2021). Aged 55 (Black Smith), Nkar. Interviewed 7<sup>th</sup> June.

**Laayeh, William.** (2022). Aged 83 (Senior of the immigrant family from Ndu, Nyaan-Nkar. Interviewed on the 02<sup>nd</sup> February.

**Wo Vijam Shey.** (2021). Aged 74 (Elderly Blacksmith), Nkar, Interviewed 15th January.

## GLOSSARY

*Anghaashiv*: traditional medical practitioners

*Chong*: female secret society with trumpets, rattles and masked dancer

*Kangshiv*: a pharmaceutical procedure to process a combination of medicines

*Kilay*: resinous incense burnt during rites or rituals believed to scare away evil spirits

*Kikeng*: peace plant (*dracaena deistelina*)

*Kirang*: an injuncion made of the soft shoot of raffia palm

*Kivave*: sores

*Kiwoy*: a slimy concoction constituting of a mixture of palm wine or water and paraphernalia (*kosteletzsy*a and two other leaves)

*Koonteh*: a creeping plant of the *passiflora* family

*Kum*: a powder of rock, charcoal and paraphernalia produced in a process accompanied by rituals

*Manjong*: the tribal military structure and its tributaries spread all over the Fondom

*Mban*: precincts of cults with restricted entry

*Njam*: lightning and thunder

*Nwerong*: secret regulatory society composed of males; stratified and with several Lodges for masked dancers in its precincts; also called Ngumba or Tifo in other tribes in the Grassfields of Cameroon.

*Shijiy*: king leave

*Tangtiy, tangkikwiy, tangkiy, tangkilam, nyuiy kilam*: rites of passage in smelting and smiting.

*Vinsey*: rheumatism