

# Emerging Trends in Blacksmithing in Benin City, Nigeria

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## **ABSTRACT**

Blacksmithing in Benin City, Nigeria is of significant antiquity. The popularity and importance of the practice in the city is reinforced in the blacksmiths guild's attachment to the palace of the Oba, the traditional ruler of Benin people and their kingdom. This study examined the shift in paradigms and emerging trends in the practice. Based on the study of the blacksmiths and their products over a period of fourteen years, the study determined how the blacksmiths have responded to modern challenges. Findings indicate that a good number of the blacksmiths are multi-skilled in metal working and that they work with metals, other than iron, and employ modern tools and methodologies which were originally not traditional to blacksmithing. The study also classified the blacksmiths' products, most of which were also not traditional to their craft, into five categories: household utensils, farming implements, musical instruments, religious artefacts and decorative objects.

## **KEYWORDS**

Benin City; Blacksmithing; Benin blacksmiths; Metal casting; Artefacts.

## **1 | INTRODUCTION**

Blacksmithing entails the fabrication of artefacts by heating iron and its alloys for ease of manipulation. In essence, blacksmithing transforms metal in its physical structure and appearance by heating and hammering (Shelter Centre, 2013). This also defines the blacksmith as that individual who manufactures certain products in iron and steels. David and Bernhard (1993) have also observed that the blacksmith is a metal smith who creates objects from wrought iron or steel by forging the metals, by using tools to hammer, bend and cut. In addition, Bealer (2009) claim that the "black" in "blacksmith" refers to the black fire scale, a layer of oxides that forms on the surface of the metal during heating. On the other hand, the word "smith" takes its derivation from "smite", which means 'to hit'. Thus, the blacksmith is a person who hits black metals. Significantly, the ability to translate the desired effect from the mind to the metal is the art of blacksmithing (Wyland, 2014). In Newman's summation (1974, p. 228), generally, the smith deserves his place in society, for his art symbolized a highly developed technology, high on the scale of human accomplishment. Finding and refining iron ore was one accomplishment. However,

cooking iron from crumbs of ore into pig iron is a complex process. This is partly the reason that, Andrews (1994, p. 3) argued that despite the fact that the scale of blacksmiths productions may be small and communal, the smiths were recognised as contributing figures in their communities.

Oke and Aderoba (2000) have identified blacksmithing as an ancient indigenous technology which is the progenitor of various metal forging operations in use today. More so, that blacksmithing is one technology that can be found in virtually all cultures of the world. In Nigeria, blacksmithing had been a fairly common practice among the various Nigerian peoples. Its history is of certain antiquity particularly as evident in the art traditions of Nok, and the arts of the Igbo, the Yoruba, the Edo and Ekoi among others (Willett, 1971; Eyo, 1977; Kalilu, 1992).

In addition to the Yoruba and the Igbo of Awka, one notable dynamic example of blacksmithing traditions that has produced iron artefacts of utility and artistic merit is that of the Edo blacksmiths of Benin. Benin City, the current capital city of Edo State and the traditional head quarters of the Benin kingdom has always been known for its culture of blacksmithing. According to Dark (1973, p. 53), the knowledge of working iron appeared to have been present among the Benin people ever before the introduction of brass-smith's art from Ile-Ife. In traditional Benin, blacksmithing started as a royal guild known as the *Igun Ematon*. It was a leading craft opened to Benin males and a family practice. It was therefore typical to find a former blacksmith handing over his tools, notably; bellows and hammers, to his children. The traditional Benin blacksmiths are quite organised. They were divided into four wards called *Igunekuwa*, *Eyanugie*, *Ugboha* and *Iguniwegie* also called Iguadaha (Dark, 1973, p. 53; Osagie & Ikponmwoosa, 2015). Many of the works done by the traditional blacksmiths were requisitions from the king's palace, while others were making products to meet the needs of the local people. Generally, the traditional Benin blacksmiths were renowned for their products and ingenuity in their production techniques. However, in more recent times with advancement in technology and new economic orientation, there have been significant improvements in the Benin blacksmithing tradition. There have been new and emerging trends in the materials employed, tools, production

technologies and even in their products. These new developments have created some gaps in the body of knowledge of Benin City's blacksmithing tradition and Nigerian art and craft.

Against this background, this paper examines blacksmithing in Benin City. The study was conducted with a view to determining new trends in materials, technology, techniques and products of blacksmithing. The study has been based on visual and oral data collected through field research over a period of fourteen years; precisely between 2000 and 2014 during which period the blacksmiths and their clients were interacted with and observed at work in their various workshops.

## **2 | MATERIALS EMPLOYED BY BLACKSMITHS IN BENIN CITY**

Traditionally, the Benin blacksmiths produced iron, the raw material for the production of their artefacts, from slag. According to Dark (1973, p. 55) "In the forge, charcoal is used for heating and is mixed with slag. From the hearth a vent or funnel of clay leads to a form of pot bellows ... scales of iron are beaten off the slag by the smiths for forging". This was indeed a laborious process. However, in more recent times, a variety of metals is employed. Although iron and its alloys are the primary ones used, non-ferrous metals like brass, lead and aluminium have recently been introduced in the fabrication of articles. The metal scrap markets as well as iron and steel stockists in the city are sources of metal supplies for the blacksmiths. Scrap metals procured from the scrap markets are in various forms. The utilisation of salvaged steel material in blacksmithing is a modern phenomenon. The present 'economy of waste' has created an abundance of good quality steel scraps from discarded automobiles and a variety of mechanical and industrial equipment and from which the Benin blacksmiths forge useful and beautiful products. Some of the metals seen used by the blacksmiths are presented in Table 1.

### **2.1 TOOLS AND MACHINES**

Hitherto, most Benin blacksmiths' workshops were small and sparsely equipped. The main tools were a forge and bellows, an anvil, hammers and a small selection of files and tongs. Inneh (2007, p. 112) aptly described the traditional Benin blacksmiths' set of

Table 1 | Some metals employed by blacksmiths in Benin City.

Metal	Form	Local Name (where applicable)
Carbon steel	Sheet	<i>Ematon</i>
Carbon steel	Wire	-
Carbon steel	Rod	-
Aluminium	Molten	-
Brass	Sheet	<i>Ehrwon</i>
Brass	Molten	<i>Ehrwon</i>
Stainless Steel	Sheet	-

tools as consisting of tongs (*awan*), knife (*ero*), hammer (*umonmon*), anvil (*ematon n'okua*), cutter (*afian*) and bellows. It is noteworthy that most of the tools used by the traditional blacksmiths for their operations were made by them. Perhaps one of the most interesting of the Benin blacksmithing indigenous technologies is in the fabrication of their bellows.

Today, a battery-operated furnace is more widely used by Benin blacksmiths, alongside a variety of tools, machines and implements. These range from hand-held manually operated tools to power tools and machines. Similarly, the vice-grip pliers is a useful new device which has become an additional tool in the modern blacksmith's workshop. However, the vice-grip does not replace the traditional tongs but supplements them. With the availability of modern tools and machines, the present day blacksmith has learned to do by himself that, which traditional blacksmiths and his apprentices did as a team. Other tools of recent adoption or introductions into the craft are the electric drill, electric grinders, power hammer, oxy-acetylene torch and electric blowers for the forge (Figures 1, 2, 3 and 4). Weygers' (2013) observation that the modern blacksmith learns to invent, improvise and construct tools in order to reduce the handicap of not having apprentices is correct. The adoption of new tools and machines into their traditional practices was also partly inspired by the blacksmiths' intention to reduce physical efforts expended in the practice.

### 3 | PRODUCTION TECHNOLOGIES AND PRODUCTS

The traditional Benin blacksmith was held in high esteem. He could fabricate or repair just about anything of his time. However, his greatest accomplishment according to Inneh (2007, p. 112) was to produce the Oba's royal swords, the *ada* and *eben*, symbols of royal authority. He also produced



Figure 1 | Automobile Battery operated forge. Photograph by Kingsley O. Emeriewen, 2012.



Figure 2 | Electric Battery charger. Photograph by Kingsley O. Emeriewen, 2009.



Figure 3 | Angle grinder (with a cutting disc). Photograph by Kingsley O. Emeriewen, 2012.



Figure 4 | Bench grinder (with a cutting discs). Photograph by Kingsley O. Emeriewen, 2012.

other objects for the Oba (the traditional and natural ruler of Benin Kingdom), like executioner's sword, (oho), key (isahen), staple (asiagbe) and oil lamps (urukpa n'asivbobo). The traditional blacksmith also had the responsibility of repairing the Oba's cannon. Apart from working for the palace, the blacksmiths were allowed to produce functional and, at other times, ornamental objects for the public. Dark (1973, p. 54) also noted that in the past, the blacksmiths had prominent roles as technicians in wartime helping to repair guns as well as produce bullets.

Originally, basic production unit was often a simple domestic one, consisting of an adult blacksmith and his apprentice(s). The apprentice's major task was working the bellows as well as holding the red hot iron firmly in position for blacksmith to beat into shape. Further, where there is a senior apprentice, he engaged in more important and technically difficult jobs such as forging hoes, blades, axe blades, reaping tools and knives (Inneh, 2007, p. 112). Significantly, traditional blacksmithing, like modern blacksmithing, entails various processes to arrive at the finished products.

The production process began with reducing materials to a malleable state by placing them on the heat of the fire until the iron was red-hot. This is comparable to or would be described as annealing today since iron and its alloys can be made malleable by being annealed. Thus annealing iron makes forging easier. The traditional blacksmiths had little or no knowledge of welding metals, but fashioned through heating and hammering operations to join two metals. The traditional blacksmiths were however significantly knowledgeable in the heat treatments of iron. In this sense, if a tool or weapon was fashioned, the edge was tempered and quenched in water.

Contrariwise, in modern day Benin blacksmithing tradition, three metal working approaches are clearly visible. They are forging, sheet metal working, and casting. Casting is however limited in practice to only some of the blacksmiths. The methodologies for these three metal working approaches may not be the same but it is not uncommon to see a combination of some operations from two or three working approaches in the production of an article. Production technologies employed by contemporary blacksmiths in Benin for forging and sheet metal working include planning,

cutting, deforming, joining and finishing. For casting operations, the three basic production methodologies are: melting the metals, pouring the molten metal and finishing.

Planning, the first stage in forging operation, involves mental articulation of the article to be forged, the determination of the material suited for the article, and the necessary techniques. Thus, in forging operations, the type of metal to be used as well as its form, dimensions and the fabrication technologies vary from article to article. Once a plan is clearly formed, the smith gets the metal for the task.

There are different types of cutting operations employed by Benin City blacksmiths. The material to be cut may determine the tool to be used for the operation. For shearing light gauged sheet metal, a pair of shears or improvised scissors is used. Figures 5 to 7 portray some of the tools for cutting and



Figure 5 | A cutlass improvised as chisel for cutting. Photograph by Kingsley O. Emeriewen, 2012.



Figure 6 | Variants of pritchels (for creating holes). Photograph by Kingsley O. Emeriewen, 2012.



Figure 7 | Cutting out traced patterns on a traditional sword with a chisel made from carbon steel strip. Photograph by Kingsley O. Emeriewen, 2013.

perforating operations.

Forging, the methods used in shaping a piece of metal into an article through deformation, is commonly employed by Benin blacksmiths. Heat treatment of the metal being forged which softens the metal as well as relieves the metal of the stress of hammer blows is a vital part of the forging process. This anneals the metal being worked. In so doing, the microstructure of the metal is also changed. The forging operation usually starts by annealing the metal to be forged. It is noteworthy that the article to be produced via forging determines the heating pattern. Each portion of the metal to be worked is fired in the forge and hammered into shape. In most cases, annealing of the metal being worked is repeated several times in the cause of shaping.

Bending, spreading, drawing down, and upsetting are some deforming processes observed in forging operations in blacksmithing in Benin City. In most cases, more than one forging process is employed in the fabrication of an article by a blacksmith. In other words, different forging processes may be used in the fabrication of a single article. Figures 8 and 9 depict the forging of a spike from a corrugated carbon steel rod.

Significantly, experience seems to be the only means the blacksmith uses to determine that a work hardened metal requires annealing and the length of time the metal is left in the forge. For the former, a ringing metal calls for annealing while a change in colour of a metal being annealed is an important marker for stopping the process.

Spreading and drawing down are used interchangeably in forging operations. Importantly, both processes involve the reduction of the thickness of a metal. Technical observations however indicate that outcomes of spreading operations leave the metal stock spread out like a thick sheet. Spreading and drawing down operations are equally used in the reduction of the thickness of a metal stock, as well as in the creation of a pointed tip on a stock. Upsetting, another forging operation increases the thickness of a piece of metal stock. Like other forging operations, upsetting a metal stock may require intermittent heating. The heating and striking with the hammer may be repeated until the desired width is attained.

Forged articles that require some form of joining are fire-welded or riveted. The function of the article may also be a factor in deciding the type of joining operation employed. The most employed joining option is riveting commonly called rebeating by the blacksmiths. The blacksmiths also employ fire-welding in some joining operations. For this operation, the metals to be joined are heated before joining them with pressure of hammer blows.

In forging operations by blacksmiths in Benin City, strict finishing procedures were hardly observed. However, in the course of forging, split metals and metal stick-outs are hammered in smoothly. This leaves the surface of the articles somewhat smooth. Also, a wire brush is sometimes used to brush forged articles. While this operation may leave some temporary sheen on the article, it also removes scales caused by heating operations.



Figure 8 | Firing carbon steel rods in a furnace. Photograph by Kingsley O. Emeriewen, 2013.



Figure 9 | Hammering a red-hot steel rod to form a spike. Photograph by Kingsley O. Emeriewen, 2013.



Figure 10 | A carbon steel floral shield rendered in chasing and repousse working technology (called beating by the blacksmiths). Photograph by Kingsley O. Emeriewen, 2012.

#### 4 | CONCLUSION

It is important to highlight the prevalent trend among blacksmiths in Benin City is being multi-skilled in metal working. They work with metals other than iron, and use tools that were originally not traditional to blacksmithing. This implies that the blacksmiths now employ methodologies outside the bounds of traditional blacksmithing. Specifically, metal casting and sheet metal working using aluminium, copper, brass and stainless steel are now practised by some contemporary Benin blacksmiths. The reason for this paradigm shift may not be unconnected with growing economic demands as well as new trends and taste in modern architecture.

In modern Benin blacksmithing practice, the blacksmiths do not only produce items for sale like the shield in Figure 10 and the crucifix in Figure 11, but also provide services. Repair of farming tools and implements as well as other products they fabricate are the main services rendered by the blacksmiths. Their products can be classified into five categories: utensils, farm implements, musical instruments, religious artefacts and decorative objects. Knives, hoes, cutlasses, snares, harvesters, gongs, bells, ceremonial swords, chisels, anvils, hammers spoons,



Figure 11 | A copper alloy crucifix fabricated from sheet metal working as well as metal casting. Photograph by Kingsley O. Emeriewen, 2012.

funnels, buckets, and tripod stands are among the items now produced. Some of these items such as spoons, funnels, brackets and tripod stands were not traditionally produced by the blacksmiths. However, in some cases where cults or other secret organizations commissions a blacksmith to produce a specific staff of office, insignia or other items peculiar to such groups, these items are produced with some level of secrecy.

Although the blacksmiths' products, methods, and metals have broadened in recent years, their products generally suffer from various technical deficiencies; Low strength and hardness result from the combination of materials used and the production technologies employed, affecting the durability of some smithed materials. This in itself is an indication that the modern day blacksmiths in Benin City have not advanced greatly despite their innovations and adaptations.

#### REFERENCES

- Andrews, J. (1994). *New Edge of the Anvil*. U.S.A: Skip Press.
- Bealer, A. W. (2009). *The Art of Blacksmithing*. Yorkshire: Castle Books.
- David, H. & Bernhard, H. (1993). *Basic tools and equipment of the rural blacksmith*. London: Intermediate Technology Publications.

Dark, P. J. C. (1973). *An Introduction to Benin Art and Technology*. Oxford: Oxford University Press.

Eyo, E. (1977). *Two Thousand Years of Nigerian Art*. Lagos: Federal Department of Antiquity, Nigeria.

Inneh, D. (2007). "The Guilds Working for the Palace". In Plankensteiner B. (ed). *Benin Kings and Rituals: Court Arts from Nigeria*. Gent: Snoeck Publishers.

Kalilu, R. O. R. (1992). "Old Oyo in West African Art". Ph.D thesis, University of Ibadan, Nigeria.

Newman, T. R. (1974). *Contemporary African Arts and Crafts*. New York: Crown Publishers Inc.

Oke, P. K. & Aderoba, A. A. (2000). "Mechanization of Heat Treatment Facilities in local Blacksmithies". *Nigerian Journal of Engineering Management*, Vol. 1, 20-26.

Osagie, J. I. & Ikponmwosa, F. (2015). "Crafts Guilds and the Sustenance of Pre-colonial Benin Monarch". *International Journal of Arts and Humanities*, Vol. 4(1), 1-17. DOI: <http://dx.doi.org/10.4314/ijah.v4i1.1>

Shelter Centre (2013). "Blacksmithing". Retrieved 24 April 2014 from <http://humanitarianlibrary.org/resource/blacksmithing>

Weygers, A. (2013). *The Modern Blacksmith* (e-edition). Retrieved 16 March 2014 from <http://ebookbrowse.net/th/the-modern-blacksmith>

Willett, F. (1971). *African Art*. London: Thames and Hudson.

Wyland, W. (2014). *Blacksmithing for Beginners*. Retrieved 24 January 2014 from <http://olddominionblacksmith.com/.../>

## **BIOGRAPHICAL INFORMATION**

Kingsley Osewiyi Emeriewen holds a Ph.D. in Form and Material Technology from Ladoko Akintola University of Technology, Ogbomoso (2014), a Master's in Sculpture (2004) and a Bachelor of Arts Degree in Metal Design (1998) from the University of Benin. His areas of research include form and material technology, children's art as well as African art and philosophy. He has several scholarly publications in his areas of research interests. As a Lecturer in the Department of Fine and Applied Arts, University of Benin, he teaches Jewellery, Foundry Practice, Product Design and Metal Smithing. He has had several solo art exhibitions in the domains of material and production technologies as well as digital art. He has also participated in a number of group exhibitions and art fairs in Nigeria and abroad.

Razaq Olatunde Rom Kalilu holds a Ph.D. in Visual Arts. He is Professor of Art and Art History at Ladoko Akintola University of Technology, Ogbomoso, Nigeria. He evolved Form and Material Technology as a field of study in Fine Art and produced the first global Ph.D. graduate in that specialisation in 2014. He is the author of numerous scholarly publications that centre on forms and significance, technology, and origin of arts in Africa. A member of several international professional bodies, he is winner and recipient of Gold Medal in the 1978 - 1979 All Africa Painting Contest; Merit Prize in International Postage Stamp Design Contest in 1997; Outstanding People of the 20th Century Outstanding Achievement Medal in 2000; and the prestigious Universal Award of Accomplishment in 2000; Development in Nigeria Merit Award in 2006 and in 2009; and Form and Material Technology Icon award among numerous other prizes and awards.