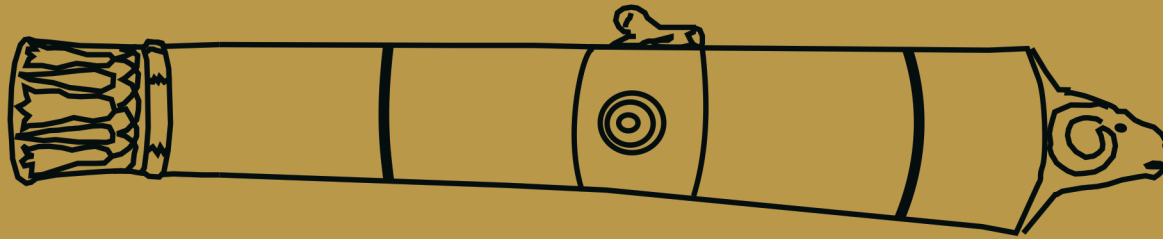


# ARTILLERY AND ARCHITECTURE OF DAULATABAD FORT

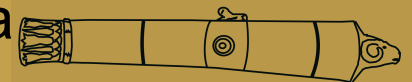


TEJAS GARGE

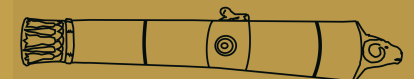
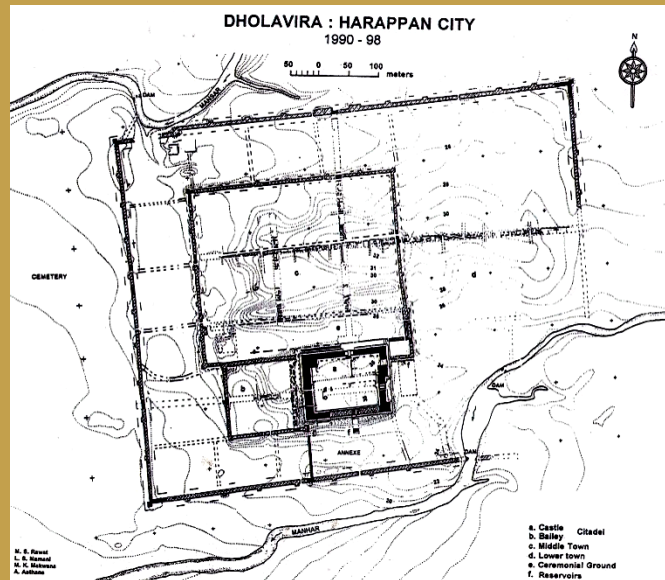
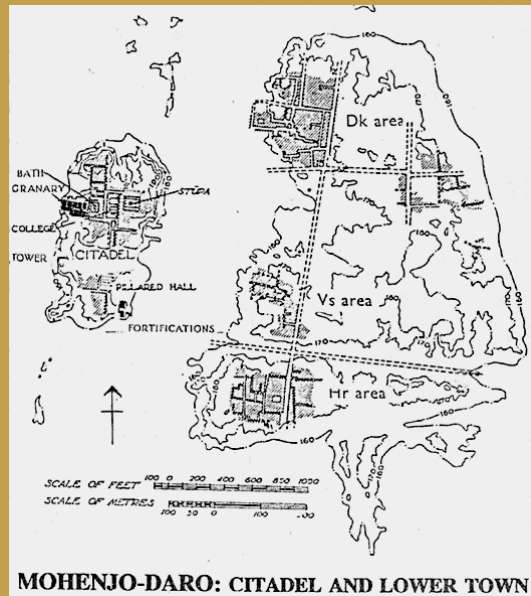
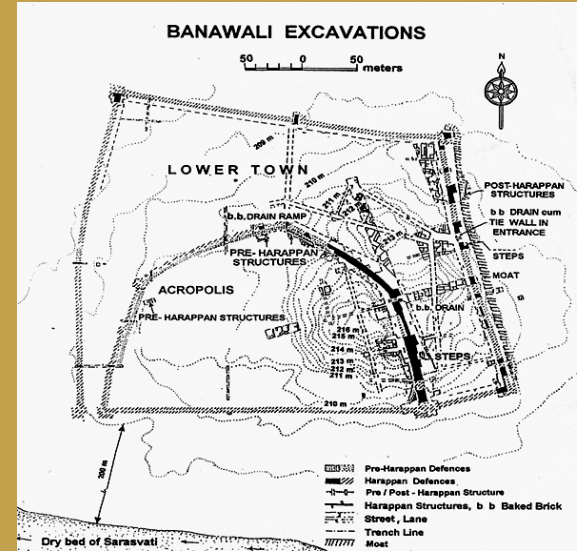
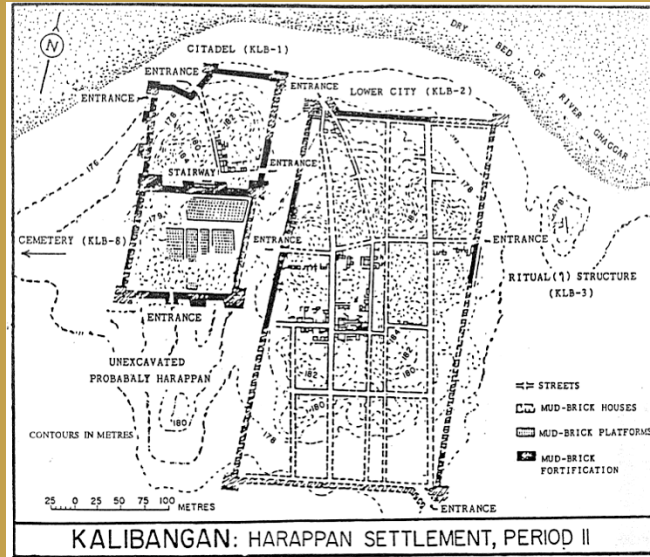
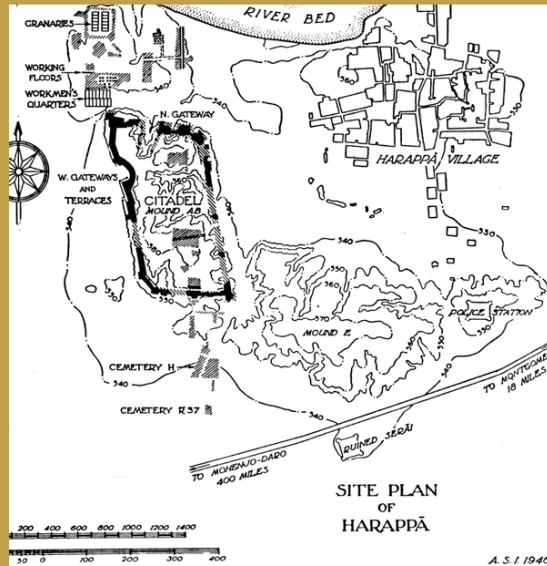
Archaeological Survey of India

Aurangabad Circle

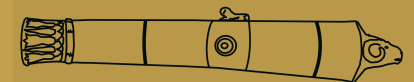
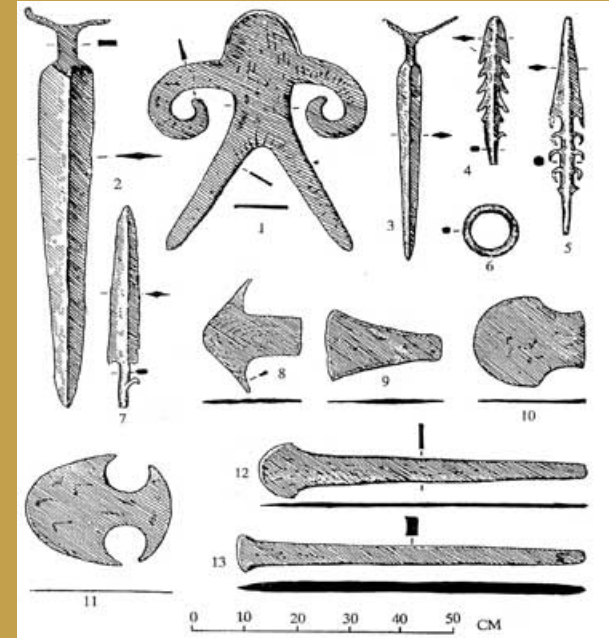
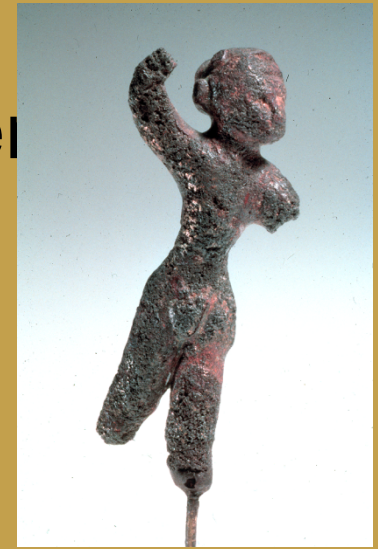
Aurangabad, Maharashtra State, India



# Defence Architecture in Protohistoric Indian Subcontinent

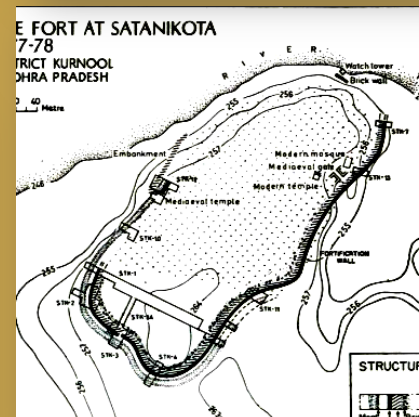
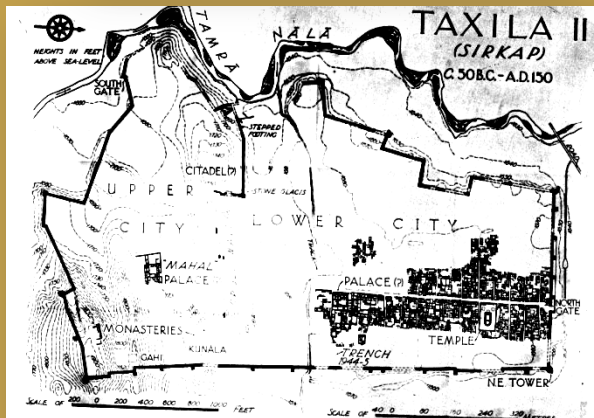
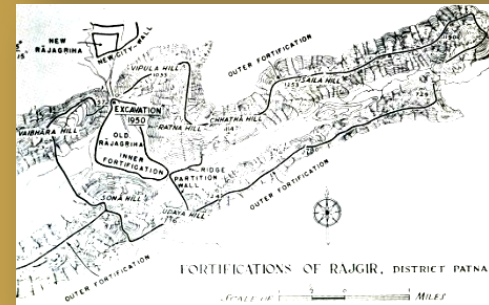
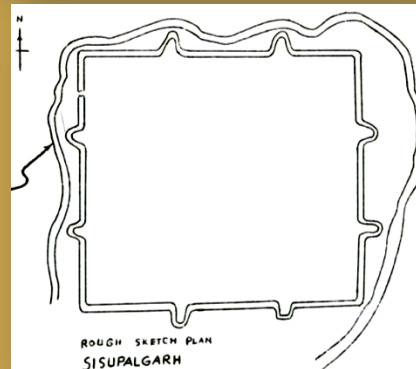
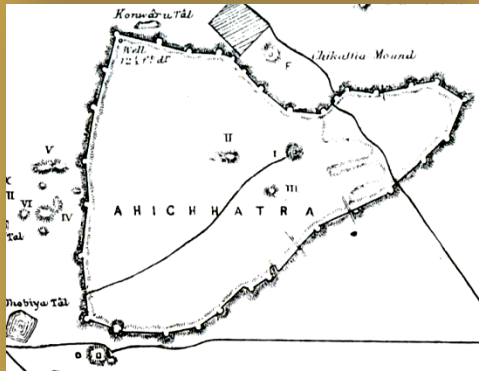
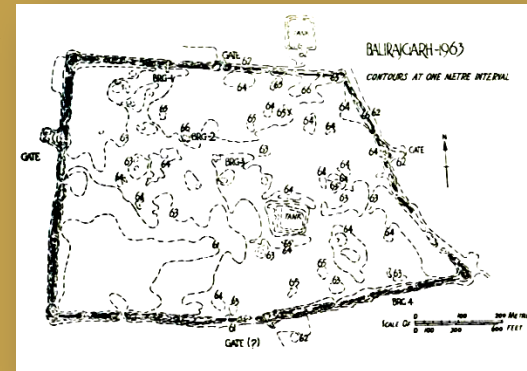
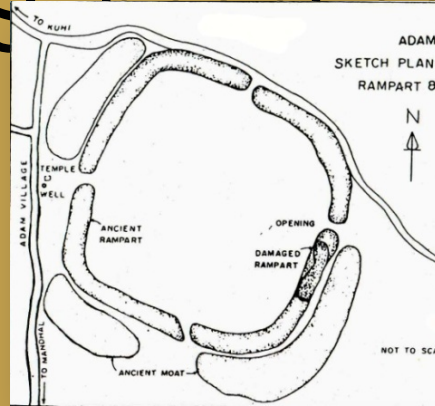
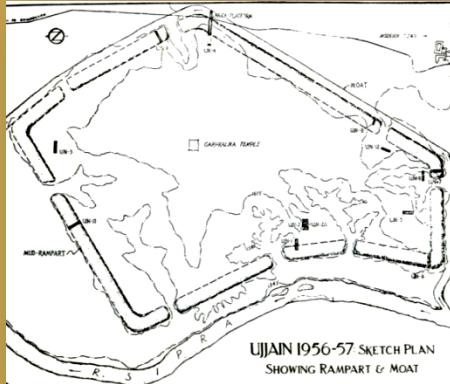


# Weapons?/Implements Protohistoric Indian Subcontinent



# Historical fortifications in Indian

## Southern



# Weapons in Indian Subcontinent during Historical Period



# Fortifications in Indian Subcontinent during Medieval Period



Ausa



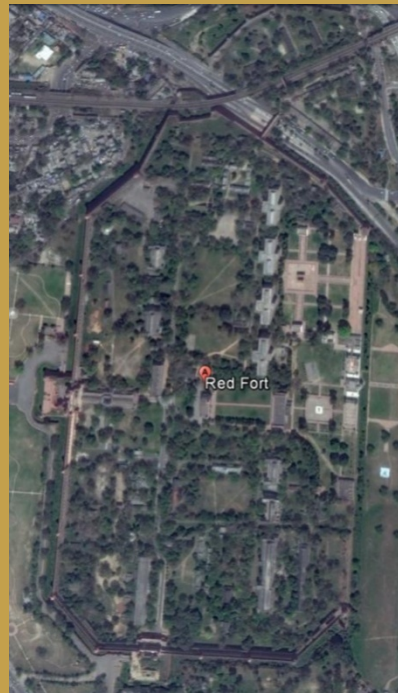
Tughalaquabad



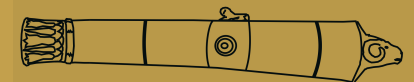
Paranda



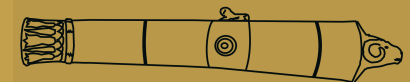
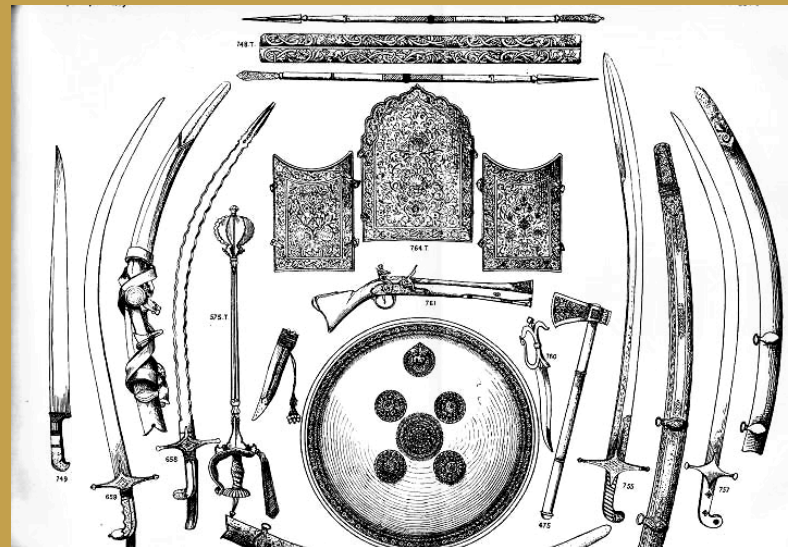
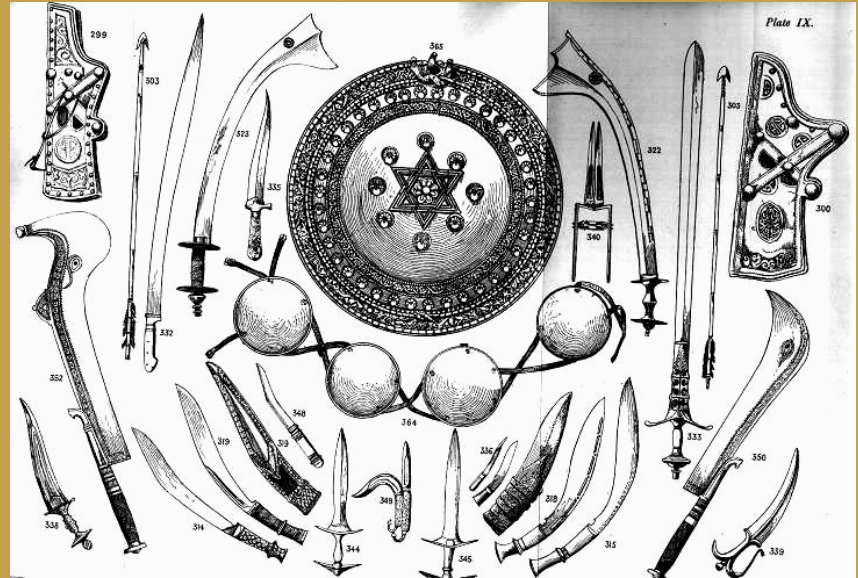
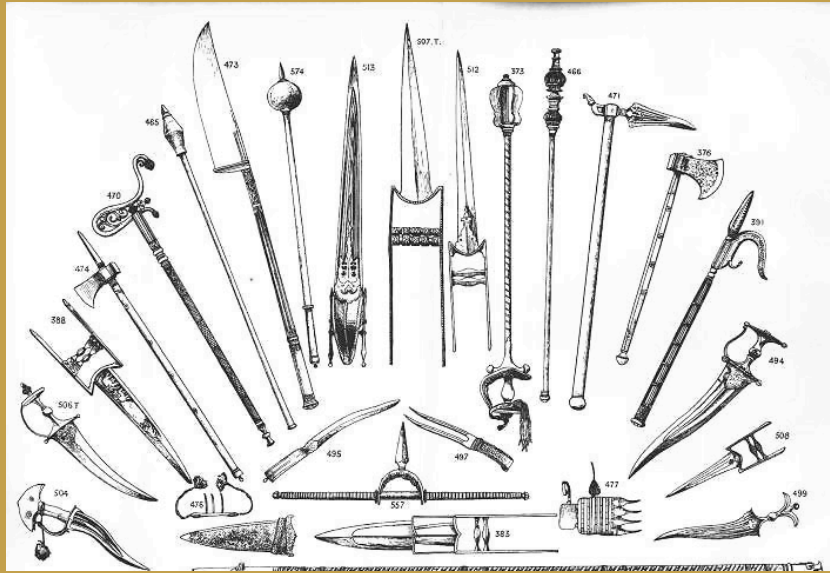
Naldurga



Udgir



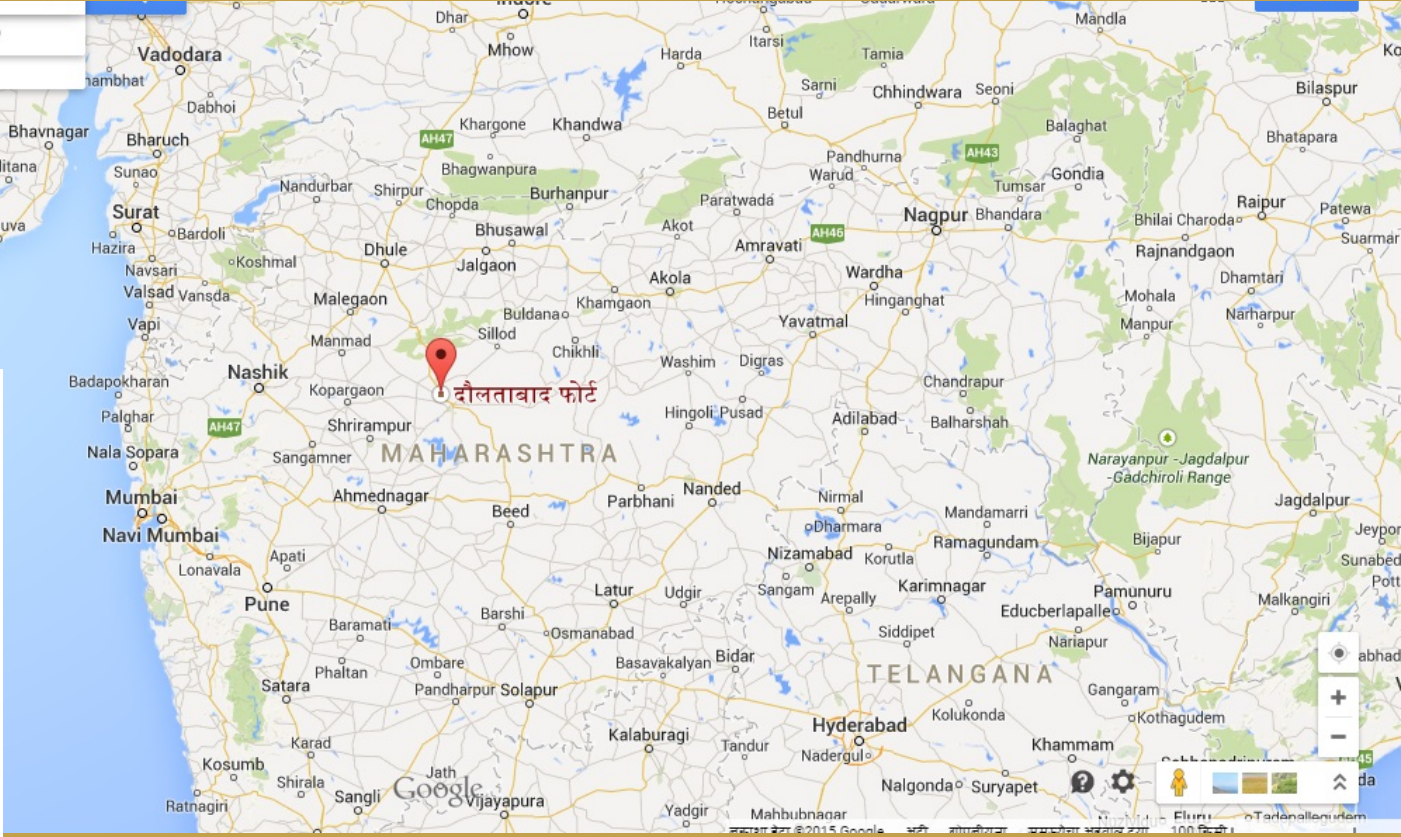
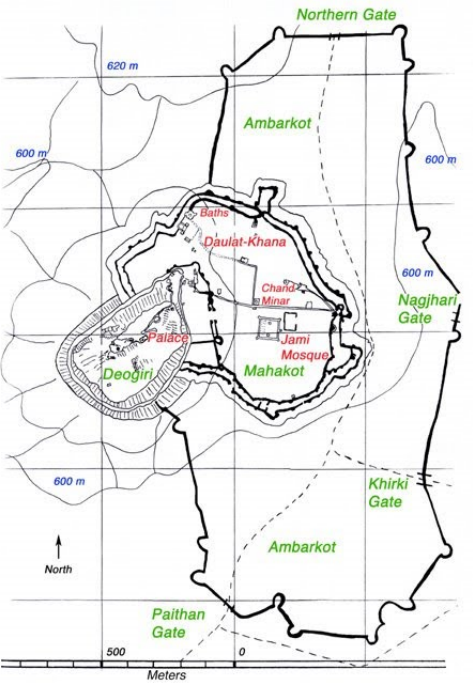
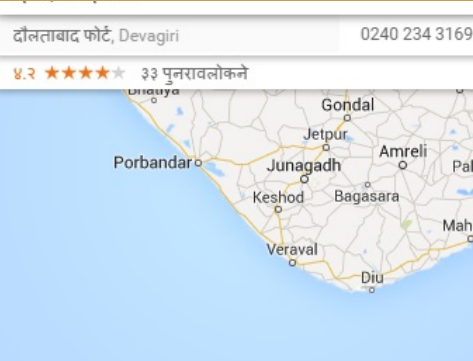
# Weapons in Indian Subcontinent during Medieval Period



# Location

दौलताबाद फोर्ट, Devagiri 0240 234 3169

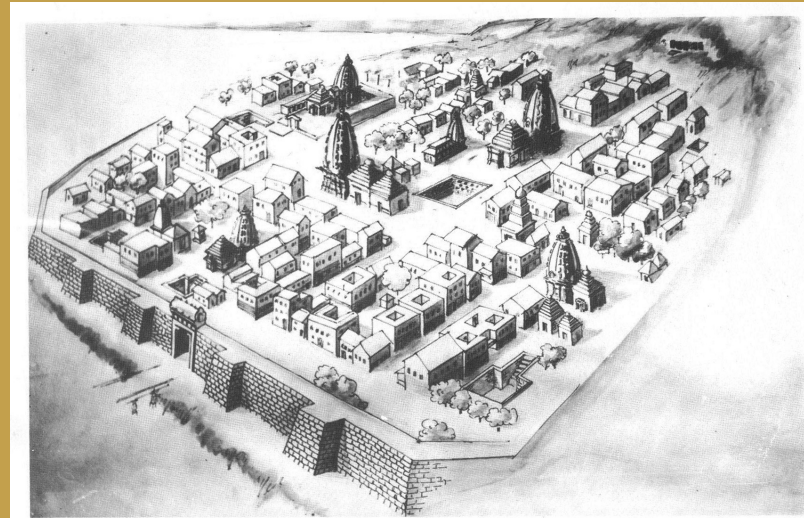
४.२ ★★★★★ ३३ पुनरावलोकने



# Daulatabad Fort: Historical Perspective

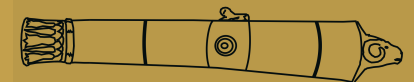
- Founded by the Yadavas of Deogiri (The Hill of Gods) in 11<sup>th</sup> century A.D. under king Bhillama V.
- 1296 A.D. Ala-ud-din Khilji defeated Ramachandradeva 1312A.D.
- Qutb-ud-din Mubarak Shah Khilji annexed it to the Delhi Sultanate.
- Muhammad-bin-Tughluq succeeded Khiljis at Delhi renamed Deogiri as Daulatabad (Abode of Wealth) and got the capital shifted from Delhi to Daulatabad in A.D. 1328. But for various reasons transferred his capital back to Delhi.
- The Bahmani rulers under Hasan Gangu extended his control over Daulatabad
- By 1499 the Nizam Shahis of Ahmednagar captured it and it was under their control till 1607.
- After series of wars between the Deccan Sultans and the Mughals under Akbar, Shah Jahan and Aurangzeb it was under Mughals.
- For a short period Daulatabad was under the control of the *Marathas* before the *Nizams* of Hyderabad took control of it in 1724 A.D.

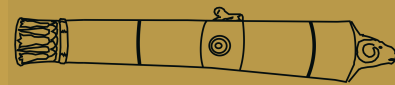
# Defence architecture under Yadavas of Deogiri (The Hill of Gods) in 11<sup>th</sup> century A.D.



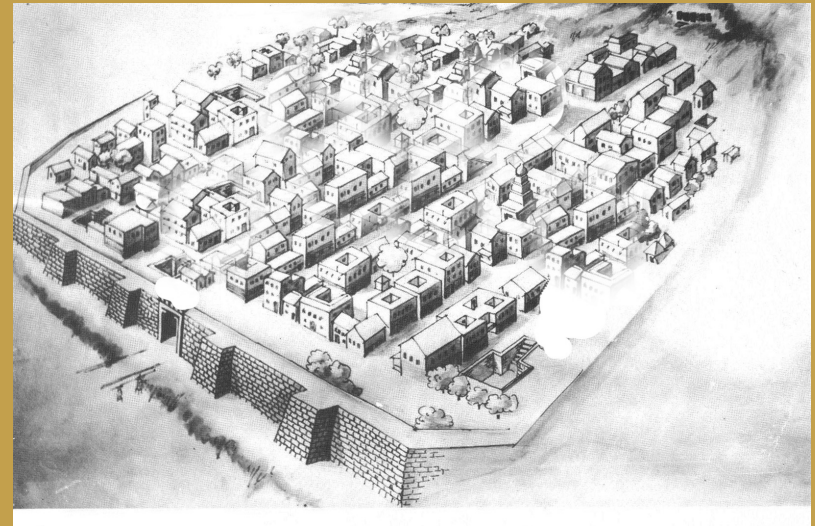
Conjectural reconstruction of Devagiri of 12th-13th Cent. A.D.

- Artillery was not on Indian scenario during Yadava period
- Rock cut moat and dark tunnel were means of defence
- It was probably fortified with mud wall with stone veneering which got modified or rebuilt to a large extent to understand its Yadava character





# Khilji Rulers under Delhi Sultanate- 12-13<sup>th</sup> century A.D



- Literary references about use of gun powder by rulers of Delhi Sultanate
- No direct reference to indicate use of guns
- No archeological record
- Defences might have remained more or less same



# Jama Masjid (Bharat Mata Temple)



# Muhammad-bin-Tughluq (Devgiri to Daulatabad)

Muhammad-bin-Tughluq succeeded Khiljis at Delhi renamed Deogiri as Daulatabad (Abode of Wealth) and got the capital shifted from Delhi to Daulatabad in A.D. 1327



he shifted his capital back to Delhi.

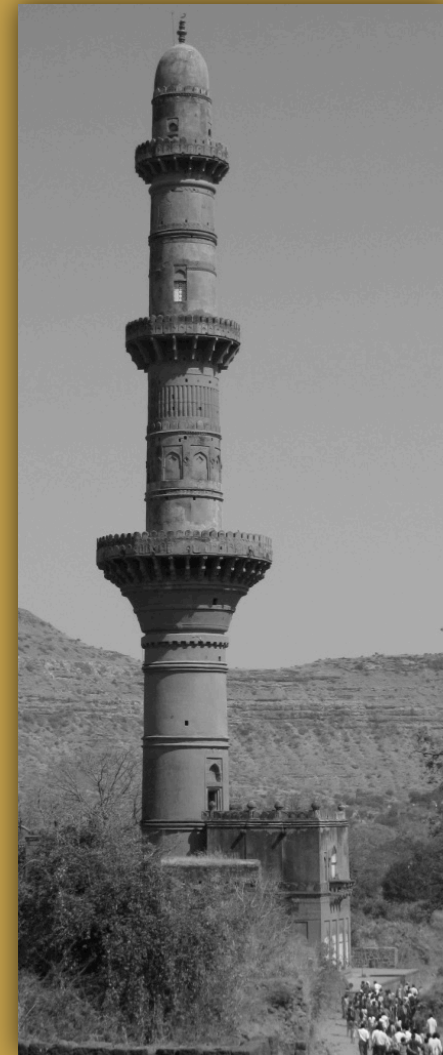
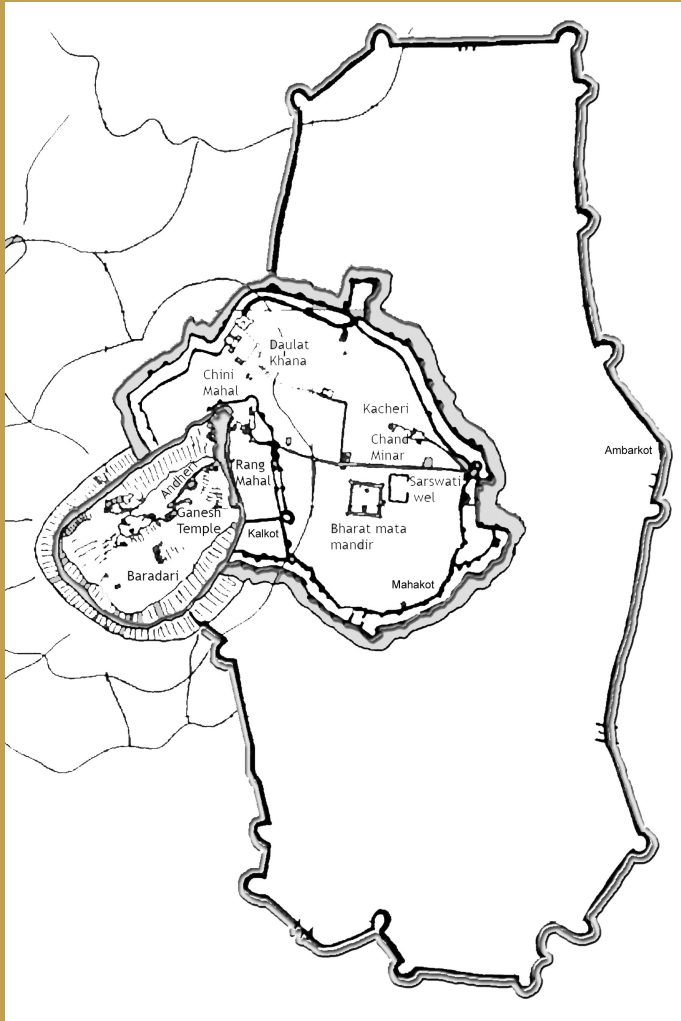


- No Literary or archaeological records about use of guns or gunpowder



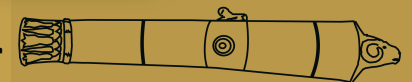


# The Bahmani rulers under Hasan Gangu extended his control over Daulatabad

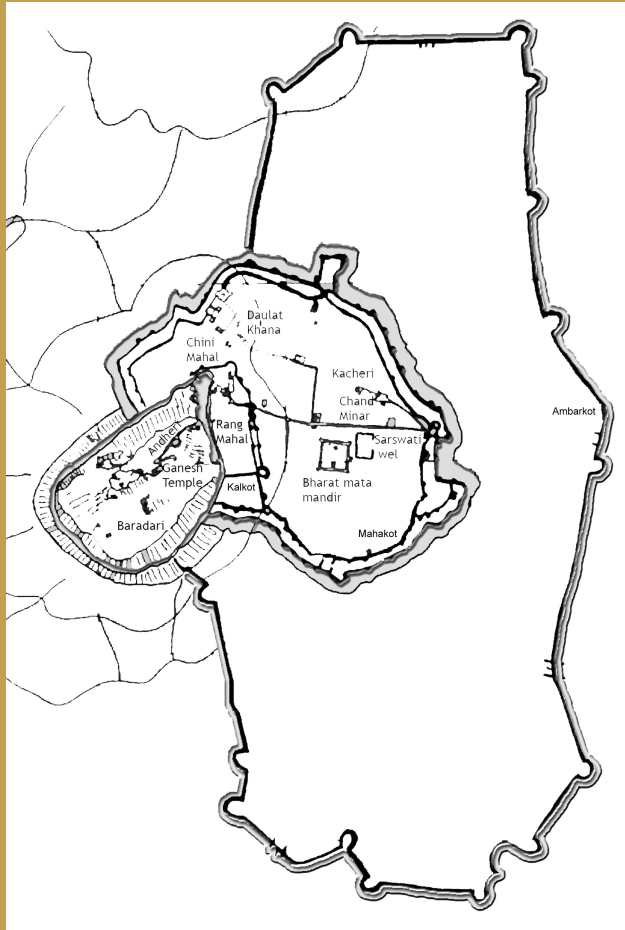


•Literary records about employment of French gunners

•No gun casted/ imported / used by Bahamani Sultans is reported so far



# Nizamshahi of Ahemadnagar



- Nizamshahas of Ahemadnagar made Daulatabad their capital in CE 1607.
- Nizamshahas of Ahemadnagar known for casting largest cannons in India
- A few cannon of forge welded variety could be assigned to Nizamshahi



# Mughal



**Series of wars between the Deccan Sultans and the Mughals under Akbar, Shah Jahan and Aurangzeb**

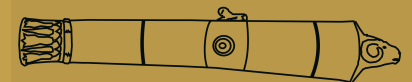
**Daulatabad was important garrison along with provincial capital at Aurangabad under Mughals**



# Maratha

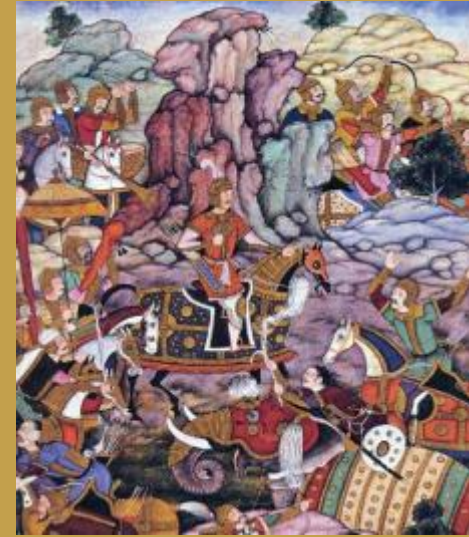


For a short period Daulatabad was under the control of the *Marathas* before the *Nizams* of Hyderabad took control of it in 1724 A.D.



# CANNONS IN INDIA

- In India, cannons were used effectively for the first time by Babur in the First Battle of Panipat from 12-19 April, 1526 against his adversary, Ibrahim Lodhi. Since then, cannons have become an important component in the battles.

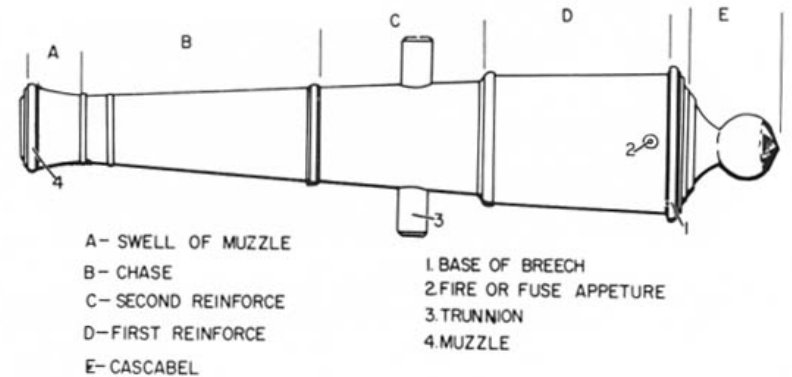
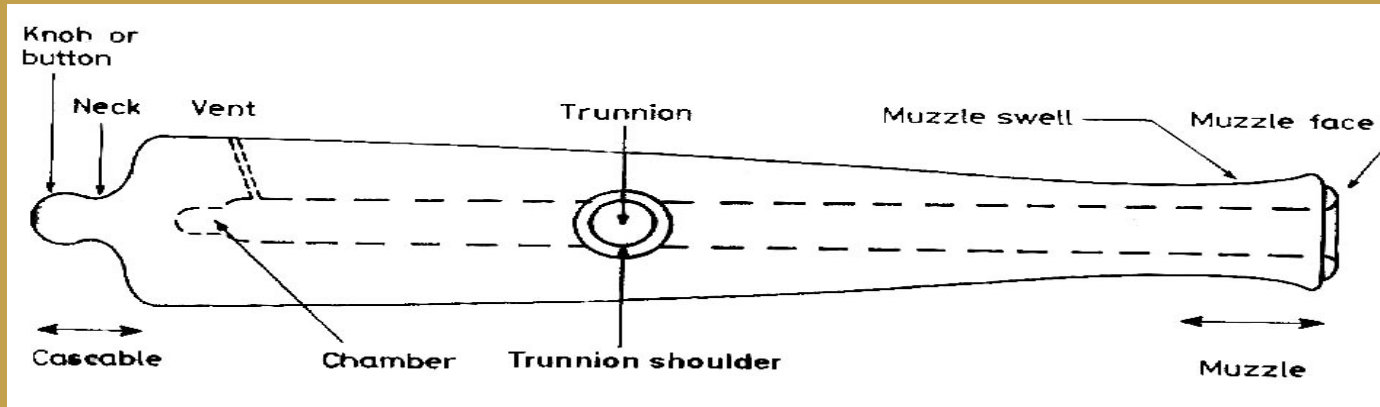


A depiction of Babur by Auguste Racinet

The earliest cannons were made of bronze, while the Europeans introduced wrought and cast iron cannons in India during the 16<sup>th</sup> century A.D.



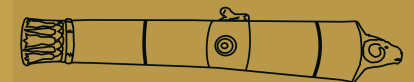
# Parts of the muzzle loading gun



➤ Guns in medieval India were essentially muzzle loading guns

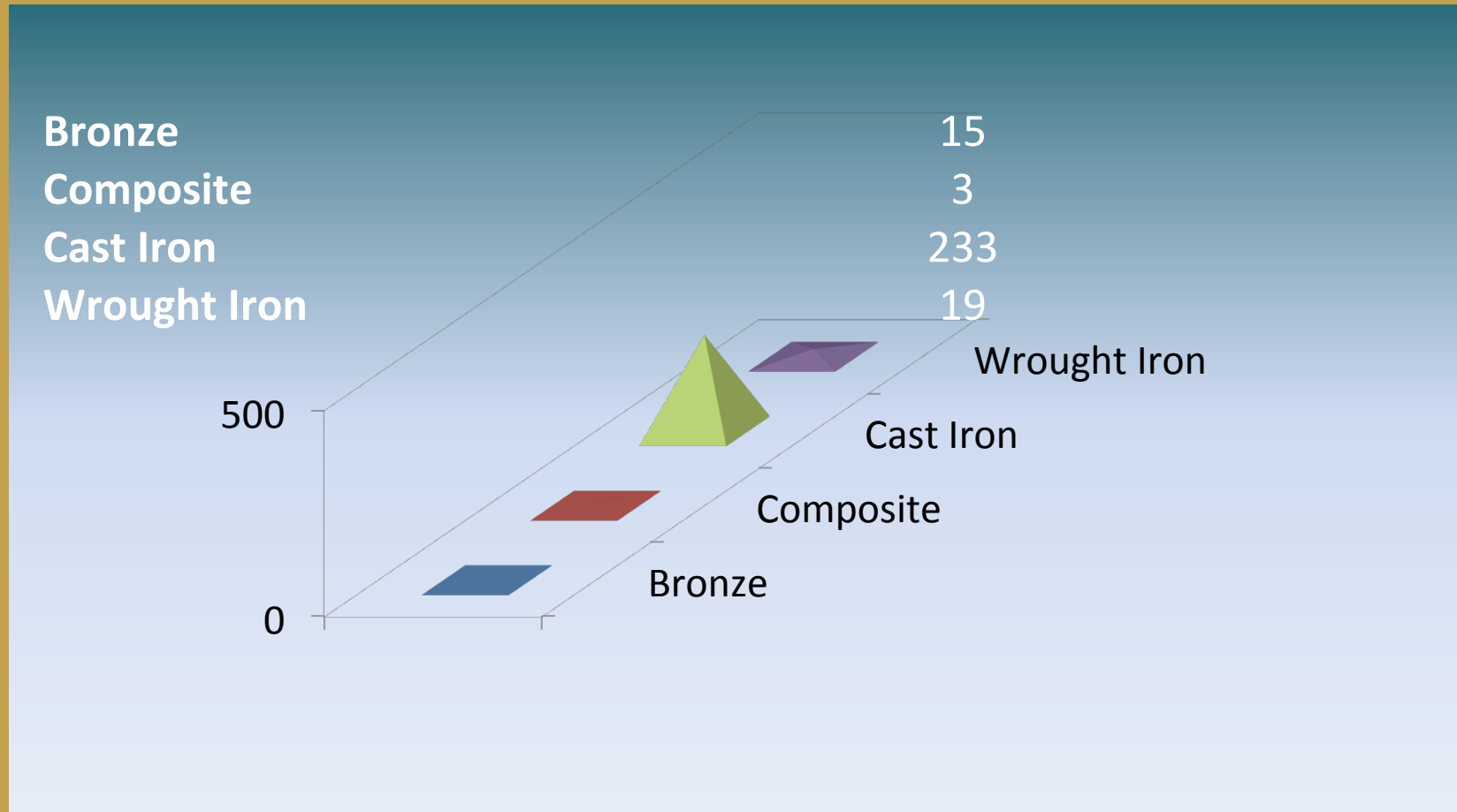
➤ Gunpowder and cannonball is loaded from front in muzzle loading gun

➤ Second half of 18<sup>th</sup> century witnessed introduction of breech loading guns



# Types of Guns

(According Manufacturing technology)



The present assemblage of 270 guns is dominated by cannons manufactured and used by Mughals

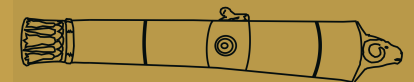


# Guns of Cast brass/ bronze



**Aurang Pasand Tope**

**2.90 m long x 0.46 m ( maximum breadth) x 0.12 m calibre**



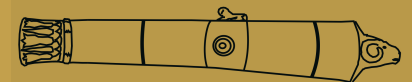
# Guns of Cast brass/



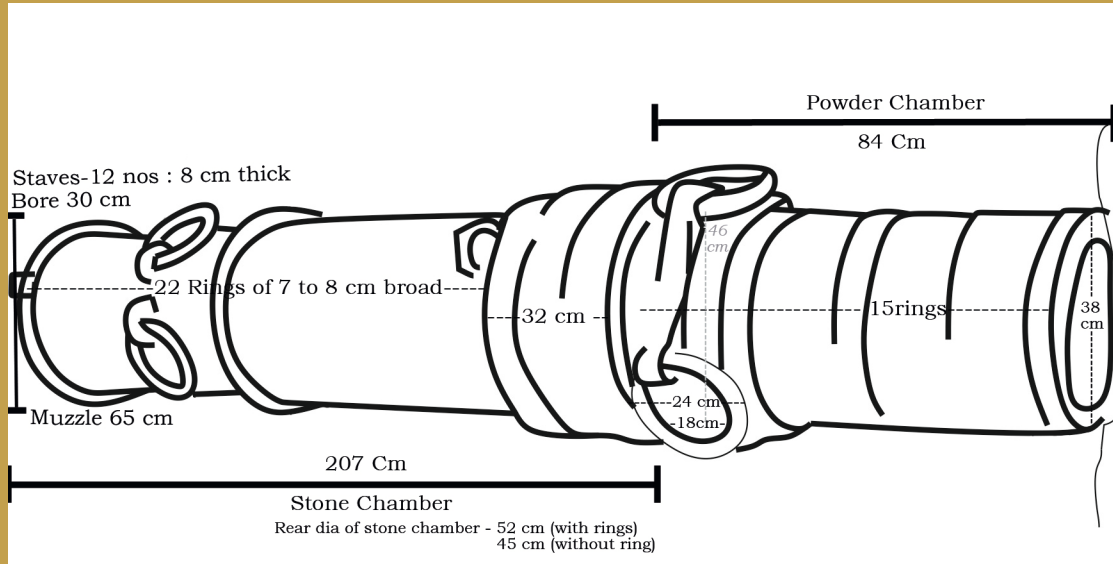
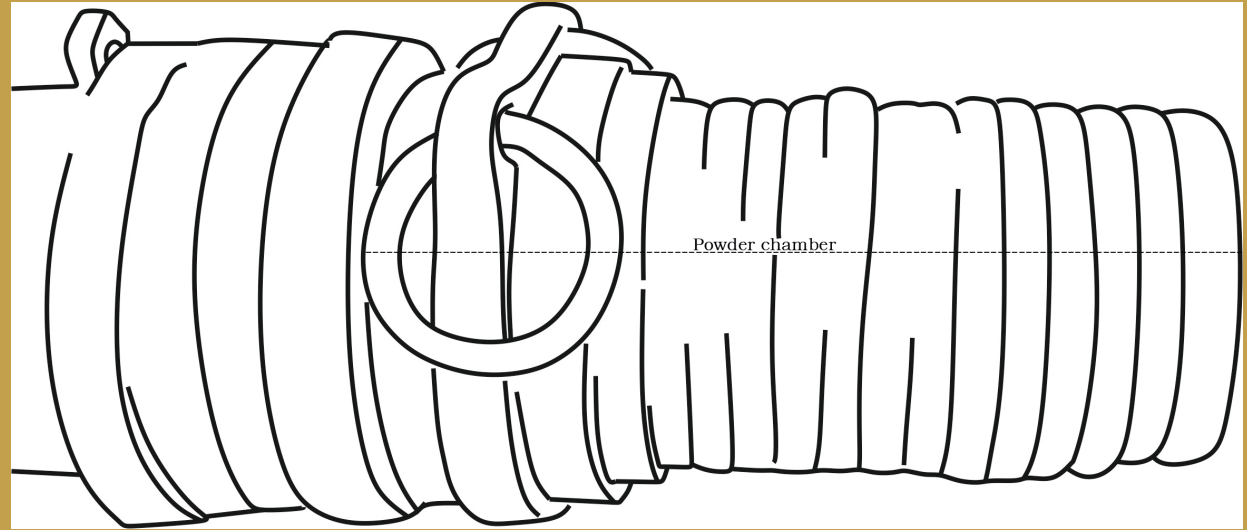
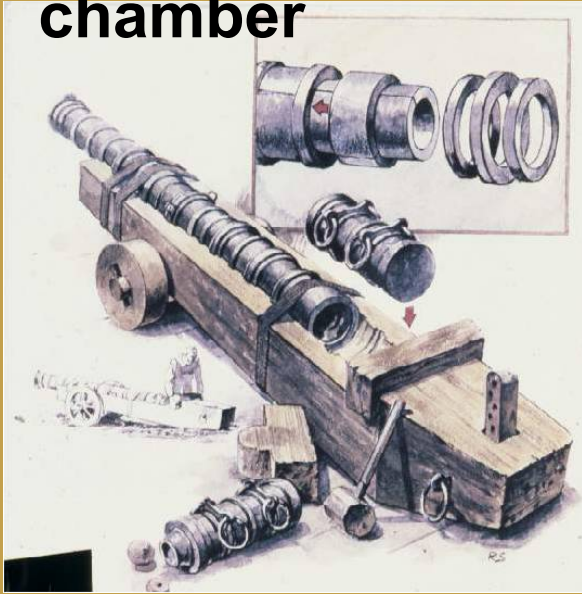
# Wrought Iron/ Forge Welded



**2.47 m long x 0.54 m ( max. breadth) x 0.30 m calibre  
made of 38 rings forged together**



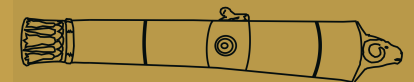
# Wrought Iron/ Forge Welded Guns with detachable powder chamber



# Wrought Iron/ Forge Welded



4.44 m long x 0.56 m ( max. breadth) x 0.35 cm calibre



# Wrought Iron/ Forge Welded Gun



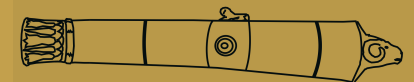
95 cm long x 0.21 m ( max. breadth) x 0.9 m calibre



# Forge Welded Multi Barrel Gun



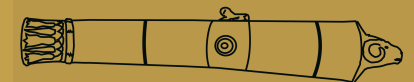
1.82 m long x 0.35 cm ( max. breadth) x 0.04-0.05 m calibre



# Wrought Iron/ Forge Welded Guns



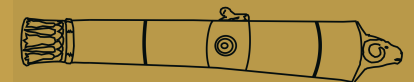
2.36 m long x 0.56 m (max. breadth) x 0.34 m calibre (max.)



# Cast Iron Guns



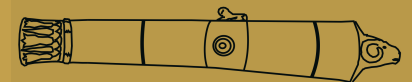
1.96 m long x 0.34 m ( max. breadth) x 0.9 m calibre



# Cast Iron Guns



# Cast Iron Guns



# Composite Guns

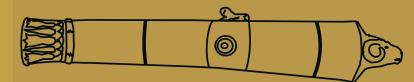


- *Mendha tope* (Ram Cannon) / *Qila Shikan* (Breaker of Forts)
- *Abul Zafar Muhiuddin Muhammad Aurangzeb Bahadur Alamgir Badshah Gazi*
- Muhammad Hussain Arab manufactured the cannon
- 5.30 m in length, has a tapering body with 50 cm diameter at the front
- The calibre of the cannon is 20 cm
- This is composite cannon as the inner bore is lined with iron staves and outer case is casted in bronze

# Composite Guns



- ❑ It bears three inscriptions in Persian; one bearing the title of Dara Shukoh *Shah-I-Baland-Iqbal* conferred on him by Shah Jahan. He was elder son of Shahajahan and brother of Aurangzeb
- ❑ The name of the manufacturer- Muhhmad Husaain
- ❑ and year of manufacturing in *hijari* era 1038.



# Composite Guns

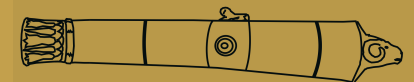


➤ Durga *tope* (Durga cannon) is located at the highest point of the Daulatabad fort.

➤ It is 5.80 m long with 18 cm caliber.

➤ It is cast with composite material as barrel of this gun is made by iron rings forged

together and outer case is cast in bronze.

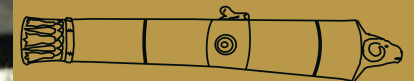


# CANONS OF FOREIGN ORIGIN

The Dualatabad fort was never under any European power but large quantity of artillery seems to have been purchased from British, Dutch and Portuguese



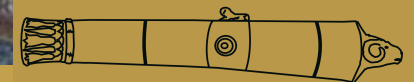
# CANONS OF FOREIGN ORIGIN



# CANONS OF FOREIGN ORIGIN

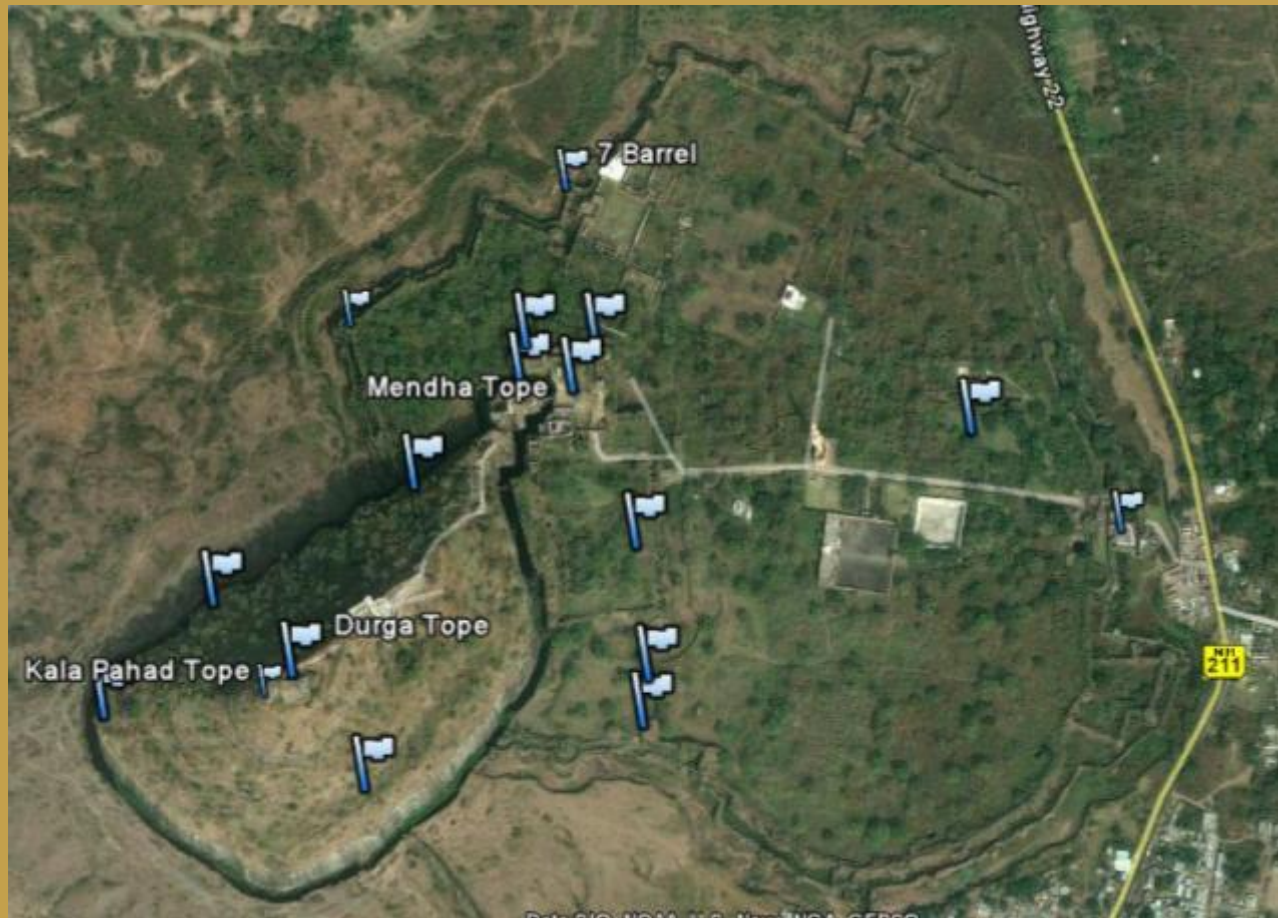


This is imported piece of artillery from Netherlands. It was cast in bronze in 1642 A.D. as indicated by an inscription on the breech at Amsterdam. A flag hanging in a ring is shown here in relief bearing typical mark of Dutch United East India Company, *Vereenigde Oost Indische Compagnie* VOC.

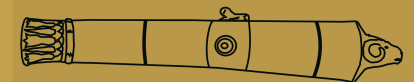




- The cannons are located in their original places like bastions on fort walls and circular towers
- Cannons in secondary context are displayed in the courtyard near the entrance gate and near *Aam Khas* gate.
- Many of the guns are stored in a store and displayed in sculpture shed for safety



- Among the various dynasties ruling Daulatabad, Mughals and Marathas were leading in promoting artillery.
- The Daulatabad fort was never under any European power but large quantity of artillery seems to have been purchased from British, Dutch and Portuguese.



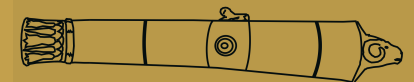
# Further proposed study

- ❖ Correlation of Archaeological Record with literature-  
e.g. shaturnal vs. Jamburak
- ❖ Caliber study- diameter of cannonball
- ❖ Identification of archaeological structures related to gunnery  
Karkhana, barudkhana etc.
- ❖ Creation of dynastic database on gunnery



# Scope for Scientific Studies

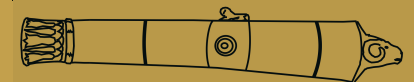
- Composition of the Metals used for the Manufacturing Cannons
- Reconstruction of techniques of manufacturing in detail
- Provenance Studies-
  - Location of the ore of the metal used for manufacturing cannons
  - Whether they were manufactured locally or brought from other location?
  - Cannons of European origin- manufactured locally or a total import?



# Proposed Museum of Cannons



Daulatabad Fort houses 270 different types of cannons. In future with availability of funds a museum can be opened educating development of artillery in the medieval ages.

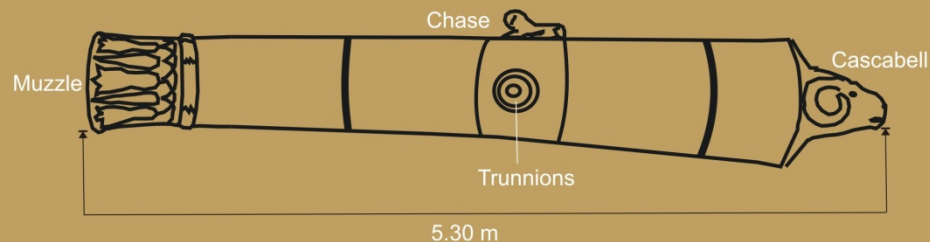


## Mendha Tope

The Mendha tope (Ram Cannon) originally known as Qila Shikan (Breaker of Forts) is placed on an elevated circular platform (16.30 m in dia.) located between Chini Mahal and Rang Mahal. The cascabel is in the form of a ram, and hence the name “Mendha Tope” gained prominence.

This cannon belongs to Mughal Emperor Aurangzeb (1658 – 1707 A.D.) as mentioned in the inscription near the muzzle, which reads as Abul Zafar Muhiuddin Muhammad Aurangzeb Bahadur Alamgir Badshah Gazi. The inscription on the muzzle states, “With God's help victory is near” and “all believers are in God's protection”. The third inscription gives the name, “Tope Qila Shikan” (Breaker of Forts), while the fourth inscription informs the name Muhammad Hussain Arab who manufactured the cannon. Another inscription, partly covered with a plate, on the base provides information on the weight of the gunpowder and shot used for the cannon.

The exterior of this gun is cast in copper while bore is made of horizontal iron staves. It measures 5.30 m in length. It has tapering body with 50 cm diameter at the front and 70 cm diameter at the rear. The caliber of the cannon is 20 cm, which can easily hurl a heavy shot. The surface of the cannon is beautifully decorated with intricate floral motifs. A pivot is provided at the center of the platform, which once held the cannon to enable its rotation in any desired direction.



## Acknowledgments

Director General, Archaeological Survey of India (ASI)

Superintending Archaeologist , ASI, Aurangabad Circle

Ms. Tejaswini Afale , Consultant, ASI

# THANK YOU!

