

**Exploration of shipwreck off Konark coast, Odisha, East coast of India  
– A Preliminary study**

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**Abstract**

The maritime history of Odisha goes back before the birth of Gautam Buddha, if not earlier. Archaeological findings suggest that ports of Odisha had contacts with other ports of the Indian subcontinent and Persian Gulf, Red Sea and Southeast Asian countries. In the course of maritime trade, innumerable vessels were wrecked due to various causes, but information on shipwrecks is available only from the 16th century onwards in the archives and libraries of India and overseas countries. Prior to the 16th century it is uncertain how many vessels have been lost in Indian waters and why. Taking into consideration the importance of shipwrecks, CSIR-National Institute of Oceanography, Goa, has undertaken shipwreck studies in Indian waters since 1988-89. In the recent past preliminary explorations of shipwrecks have been carried out off Odisha coast to record the shipwrecks. This paper deals with the shipwrecks off Odisha coast and discusses the results of the preliminary exploration of a shipwreck carried out off Konark coast.

**Key words:** Shipwreck, Konark coast, Hukitola, Maritime trade, Marine Records

## Introduction

During the last three decades of maritime archaeological explorations in Indian waters, many shipwrecks and submerged ports have been explored and documented (Sila Tripathi, 2015a; and Sila Tripathi, 2015b). With regard to the shipwrecks, information is generally gathered either from local fishermen, local divers, hydrograph charts or from marine records. Marine records housed in the archives and libraries of India and abroad suggest that numerous ships have been wrecked along the Indian coast caused by both human error and natural calamities. Taking these data into consideration a shipwreck map of India has been prepared and approximate location of shipwrecks have been marked (Fig. 1). Among them some shipwrecks have been explored; for instance, Sunchi Reef, St George's Reef, Ameer Shoals, Sail Rock, Grande Island off Goa (Sila Tripathi *et al.* 2014); Minicoy Island, Suheli Par, Byramgore and Bangaram off Lakshadweep Islands (Sila Tripathi *et al.* 2013; Sila Tripathi & Gudigar, 2001; Rao *et al.* 1995-96; Tripathi 1994; Gupchup 1997) and Poompuhar off Tamil Nadu (Gaur *et al.* 1997; and Sila Tripathi *et al.* 2003) on the basis of the information collected from local fishermen and Hydrograph charts; and recently a shipwreck has been explored off the Konark coast of Odisha. Attempts have been made to locate other shipwrecks which are mentioned in marine records and hydrograph charts. All these shipwrecks are datable to the post 16th century AD and so far no earlier period shipwrecks have been found in Indian waters. There could be many reasons for that.

In general terms “shipwreck” means destruction of a ship in the sea either sinking or breaking up due to natural or manmade reasons; for example in a storm or after striking a rock, etc. In maritime archaeology, shipwreck study is known as ‘nautical archaeology’, which includes fishing boats, merchant vessels and warships. Shipwrecks – as the material remains of the boats and ships, belong to a period, and they are invaluable time capsules. Shipwreck excavations reveal information on the history of the ships, construction pattern and other accomplishment made before the accident.

Most of the Indian texts, starting from the *Rig Veda* onwards, narrate sea voyages, maritime and cultural contacts with other countries, including sea dangers and bad weather like cyclones, typhoons, loss of cargo and lives and shipwrecks. In the absence of direct references to shipwrecks prior to the 16th century, Buddhist art and inscriptional evidence shed light on them. The *asta mahabhaya tara* (Tara image of Mahayana Buddhist art), mentions the savior from eight great perils, one among them is sea voyages, depicting a shipwreck scene and rescue of mariners. A shipwreck scene has been depicted on an *asta*

*mahabhaya tara* sculpture which has been recovered during excavations at Ratnagiri, the Buddhist site of Odisha now displayed at the site museum (Fig. 2). In the five thousand years of maritime history of India the only inscriptional evidence referring to the shipwrecks comes from the Motupalli stone pillar inscription '*abhaya sasana*' (charter of security) issued by King Ganapati Deva (1244-45 A.D.) of Kakatiya dynasty (Fig. 3) (Hultzsch 1982) and King Annapottu Reddi (1358 A.D.) of Andhra Pradesh, east coast of India (Srinivasan 1990). The Motupalli inscription states the following on maritime trade, "in the inscription the King Ganapati Deva has assured and welcomed the traders from other areas going back and forth through selected area to all countries and towns. Earlier, kings forcibly seized all the cargo such as gold, elephants, horses, jewels, etc., when seagoing vessels journeying from one region to another were caught in storms, cyclones, wrecked and cast on shore. But we, for the sake of our reputation and religious merit, and out of pity for those who have incurred the grave risk of a sea voyage thinking that wealth is more valuable than life, give up all but the customary tariff" (Hultzsch 1982: 196). Moreover, the Kakatiyas were well-known for their encouragement of long distance maritime trade and Motupalli was the main port of the Kakatiyas and Marco Polo had visited the port (Hultzsch 1982: 190; Sree Padma 1992: 37-41; Chakravarti 1991: 159-182).

### **Shipwrecks along the Odisha coast**

In the maritime trade of Odisha there must have been many shipwrecks. The marine records of the Archives of Bhubaneswar, Calcutta (Kolkata), Madras (Chennai) and New Delhi provide information on shipwrecks off Odisha coast. For instance, the British ship *Fattee Salem*, bound to Meruee, is reported to have sunk near Ganjam in a violent wind in 1761. All members on board were saved, however no cargo and guns could be saved or salvaged (Anons 1761; Sila Tripathi *et al.* 1994). HMS *Carron* was wrecked 4 miles north of Black Pagoda, Konark in July 1820<sup>1</sup>. After the wreck, the ship broke into pieces and cargo could not be saved (Colledge and Warlow 2010; and Pati 2006). The Brig Admiral *Drury* or *Drusy* was wrecked off Harishpur, Odisha in July 1821<sup>2</sup> and missionary books, one box made up of skins and containing silk, including other cargo were saved (Anons 1819-1822; Sila Tripathi *et al.* 1994). The Brig *Sophia*<sup>3</sup> bound from Calcutta (Kolkata) to Cuttack was wrecked off Odisha coast (Pati 2006). The exact location of the wreck is not mentioned in the records. Similarly, two more wooden sailing ships of the East India Company (ECI) named *Industry* and *Princess Royal*, were wrecked off Ganjam coast in 1850 (Anons 1850). The French ship *Velleda* (?) sank near Hukitola, near Paradip (Paradeep) in a severe

cyclone in 1875 carrying food grains from Paris to India. *Sir John Lawrence* sank off the Orissa coast due to a cyclone in 1887 carrying more than 175 passengers (Behera 1989). The sources of the Indian Meteorological Department (IMD) state that a number of ships were destroyed, capsized, damaged or disappeared between 1832 and 1900 AD in the cyclones that took place along the Orissa coast (Sila Tripathi and Unnikrishnan 2011); however, no other details are available in this regard.

In addition to marine records, occasionally shipwrecks are also marked in nautical or hydrographic charts. Nautical charts are used for marine navigation in which water depths; seabed topography, natural features and coastal structures along the coastline, navigational hazards, shipwrecks and other related information are provided. Therefore, hydrographic charts related to Odisha region were studied to get information on shipwrecks. The Hydrographic Charts Nos. 352 and 353 referring to Odisha, mark shipwrecks off Hukitola, False Point, Paradip (Paradeep), Nuagar near Devi Point and Tandahar near Konark (Fig. 4).

### **Preliminary explorations and Results**

Based on the existing information available on Hydrograph charts and marine records on shipwrecks of Odisha coast, a preliminary exploration was carried out about 6 km away on the northern side of Konark coast and a shipwreck was found in 6 to 8 m water depth. During explorations, boilers (Fig. 5a), cabin and frames of the ill fated shipwreck were noticed. A major portion of the boilers and other remains of the shipwreck are buried in the seabed because of high energy zone and shallow water depth. All the boilers are *in situ*. These boilers are comparable with those found at shipwrecks off Aree Shoals (Sila Tripathi *et al.* 2010), Goa and Minicoy Island, Lakshadweep. The winch of the ship is lying near the boilers (Fig. 5b). The anchor chain (Fig. 5c) is lying on the seabed little away from the shipwreck; probably the chain is connected to the anchor which is lying in deeper waters. As inclement weather and strong currents pushed the ship towards shore, the captain might have lowered the anchor, but the ship drifted to the shore then grounded. Other parts of the shipwreck are scattered over the seabed. Some of the beams and hull frames of the ship are in good condition while others have eroded.

Additionally, during exploration, a large bronze seawater injection valve from the main boiler feed (Fig. 6a), was recovered along with a Screw Lift Valve, with U-shaped collar. It may have been from a Boiler Feed Valve which would have sealed off the steam inlet pipe. It

would have been held in place by a steel spring which probably has rusted. The tension on the spring could be adjusted by a screw mechanism which could be wound up or down as required; there should be a threaded part in the orifice for the adjuster. The hook like piece (Fig. 6b) is a bronze bearing shell most probably from the eccentric (the eccentrics were the rods which opened and closed the slide valves on the main steam cylinders and the eccentric rods were called eccentrics) shaft, a piece which is attached (slide valve). The oil cup on the left would be filled with oil in the engine room and the oil would feed through holes in the bearing shells by gravity. The two halves of the bearing shell are secured by means of steel or iron bolts which are probably still *in situ*. Considering the condition of the iron bolts and piece of eccentric shaft it appears that it could be a triple expansion engine possibly datable to the 1880's. Moreover a steam or water pipe (Fig. 6c) was also found from the site, but it is difficult to ascertain exactly where it was fitted without any connecting flanges. All these artefacts were collected from the site since they were lying isolated in the area close to the shipwreck.

The seabed is sandy; the shipwreck remains located in 6 to 8 m depth, covered with suspended material, fishing nets and rope and over grown with mussels, seaweeds, etc. As the shipwreck lies in a high energy zone, the exploration is frequently hampered because of low visibility. Once the wind blows, either from south or east, the sediment churns up, causing poor visibility. Even during ebb tide water visibility reduces and makes it difficult to undertake the exploration.

Pati (2006) studied the archival records of the Odisha State Archives to understand the maritime trade of Odisha during the 19th century, and mentioned that HMS *Carron* was wrecked 4 miles north of Konark in July 1820<sup>1</sup>. Similarly, the '*Ships of the Royal Navy*' (Colledge and Warlow 2010) and (<http://www.wrecksite.eu/wreck>) mentioned that HMS *Carron* 1820, the sailing ship of 6th rate frigate, carrying 20 x 32 pounder carronades, 2 x 6 pounder chase guns, grounded on 06 July 1820 near Puri. The *Asiatic Journal and Monthly Register* (1821) mentioned that HMS *Carron* had been sailing southwards from the Sandheads, to Madras and grounded at 3 am on 6 July 1820 six miles north of the Black Pagoda (Konark), which is 30 miles north of Puri. Despite all efforts to free her, HMS *Carron* quickly took on water, lost her boats and broke apart. In the morning, the survivors found that HMS *Carron* was only a quarter of a mile offshore. The master and 19 crewmen drowned and artillery of the lieutenant was lost. The court martial board placed the loss of HMS *Carron* on unexpected strong current and inclement weather. O'Byrne (1849)

mentioned that Capt. John Furneaux was the captain of HMS *Carron* which wrecked on the night of 5 July 1820 in the Bay of Bengal.

Two more shipwrecks have been explored off Hukitola bay of Kendrapada and off Gopalpur coast, in addition to the exploration of shipwreck off Konark coast. It is said that the ship '*Velleda*' measuring 250 ft (76 m) in length and 50 ft (15 m) in width sunk in 1875 in a severe cyclone near Hukitola. The ship was loaded with cargo such as food grains, sugar, liquor, wine and other goods from France to India. The ship could not be anchored and at last it sank. During low tide the upper portion of the sunken ship is visible and acts as a barrier for fishing boats. Due to rough weather and poor visibility, shipwreck remains could not be recorded. Local people say that '*Velleda*' is a French ship (?). However, further confirmation is required at this end. The shipwreck off Gopalpur is buried in the seabed and only a little portion is visible. As the wreck is lying in shallow water and a high energy zone it is very difficult to document and record the remains.

### **Discussion and Conclusions**

The evidence suggests that there are a number of shipwrecks in Indian waters but only countable shipwrecks have been explored because exact locations of shipwrecks are not known. Moreover, rivers discharge tons of sediment into the sea and movement of suspended material reduces visibility in shallow water and this prevents underwater exploration and makes it difficult to locate the shipwrecks. The sediment might have buried a number of shipwrecks as well as other archaeological artefacts. These are the greatest handicaps in exploring shipwrecks in Indian waters, therefore shipwrecks of ancient period could not be documented though the maritime trade of India is datable to the Bronze period. Shipwrecks documented in Indian waters belong to the 17th-19th and 20th centuries AD onwards. This period is the transition phase between wood to iron and sail to steam.

There are a number of shipwrecks off the Odisha coast, but this is the first time a shipwreck off Konark coast has been explored and other shipwrecks await exploration and identification. The shipwrecks off Hukitola, Paradip (Paradeep), Nuagar near Devi Point, Ganjam and Gopalpur may provide information about unknown history of the ships and maritime trade contacts with other countries. During preliminary exploration of the shipwreck off Konark coast, boilers, winch, anchor chain and other remains were noticed, but these findings could not be studied thoroughly or documented fully, owing to poor visibility. The name of the ship, its origin, cargo or armaments, if any, can be ascertained in

the ensuing season. The findings undoubtedly suggest that this is the steam engine shipwreck. Conversely, the '*Ships of the Royal Navy*' (Colledge and Warlow 2010); the marine records and the website (<http://www.wrecksite.eu/wreck>) referred to details of the sailing ship HMS *Carron*, the causes and location of the wreck. These records mention that HMS *Carron* was wrecked in the same locality where the steam engine shipwreck has been explored. During exploration, remains of HMS *Carron* could not be found, probably the remains might be lying in the nearby area. On the northern side of the steam engine shipwreck, one more shipwreck is marked on the hydrograph chart, which could probably be the HMS *Carron*. However, a proper exploration of these shipwrecks is essential to help us to identify the HMS *Carron* and the exact location of the wreck and its present status. Some more detailed information on the steam engine shipwrecks of Odisha could also be obtained.

Shipwrecks provide well-preserved information on seafaring, maritime trade, warfare, and construction technology of that particular period. Therefore, 'shipwrecks' are considered as 'time capsules' because shipwrecks enhance understanding of maritime history and cultural contacts of that particular period. As shipwrecks are a part of the underwater cultural heritage of the country, the UNESCO has taken a key role in the preservation of shipwrecks and estimated that over 3 million shipwrecks are lying on the ocean floor unexplored around the world (The UNESCO Convention on the Protection of U/W Cultural Heritage, 2001). In recent times many universities and research institutions have been involved in maritime archaeological studies and explored and excavated many shipwrecks, both in marine and fresh waters, throughout the world including submerged ports to understand the maritime history and cultural contact of the ages among the countries. Shipwrecks and submerged ports should be explored and excavated for posterity.

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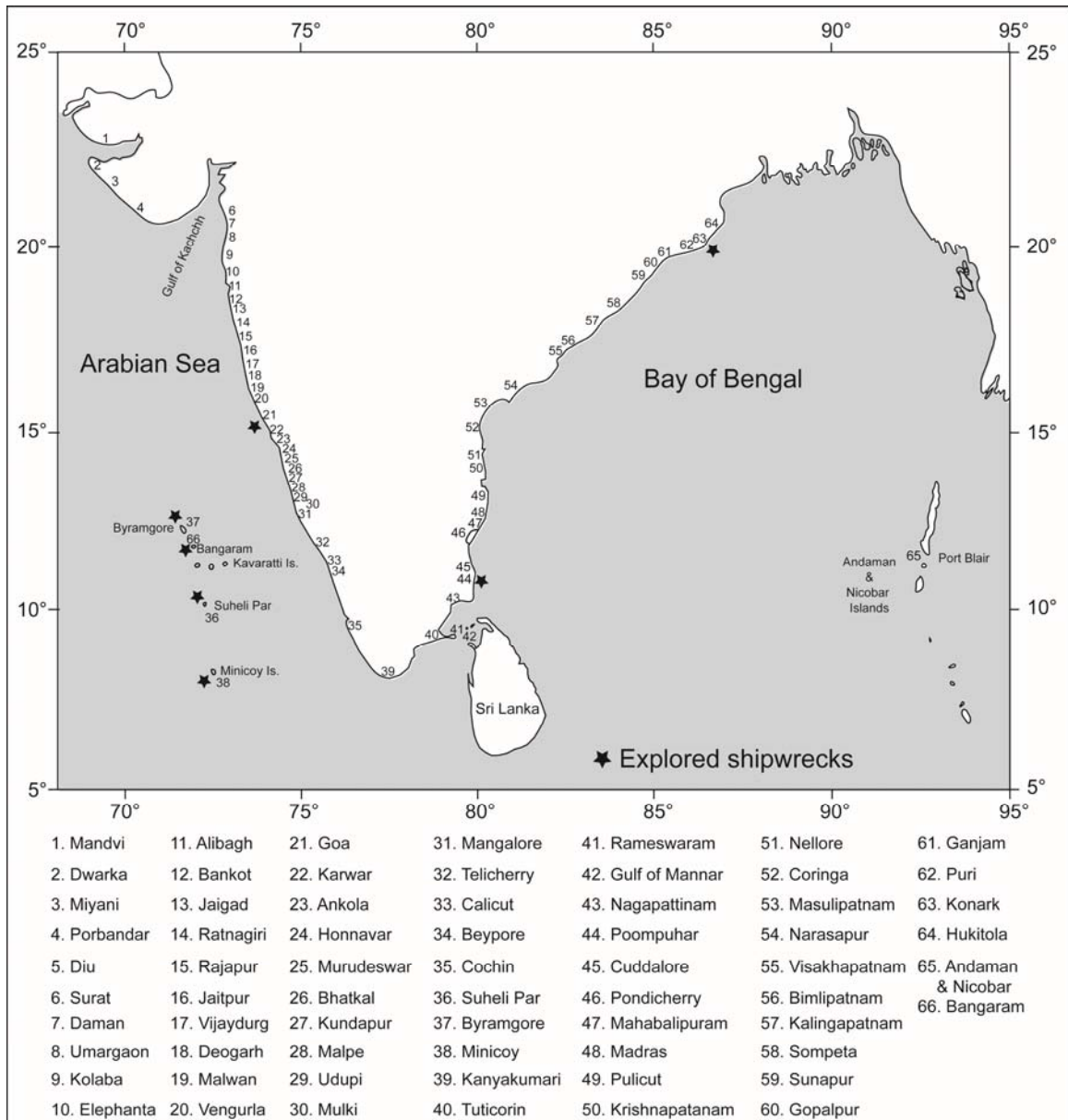
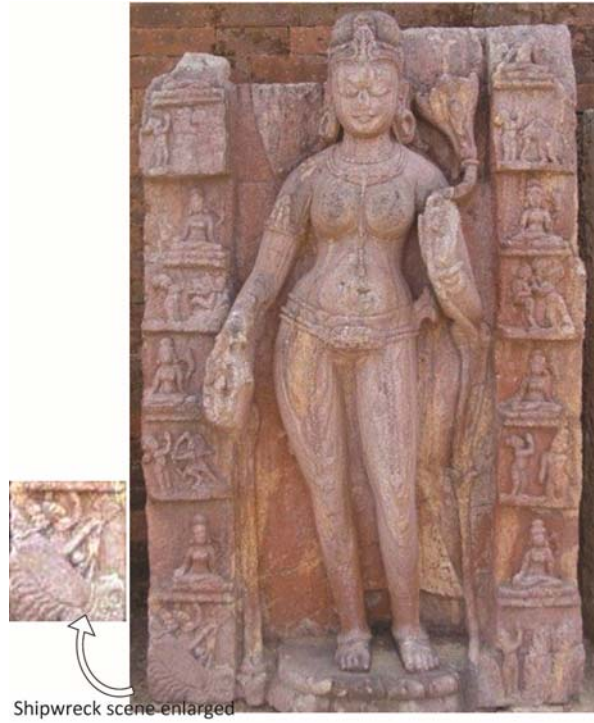


Fig. 1 Map showing location of shipwrecks along the coast of India, (Source: Marine Records, Hydrographic Charts, Local Divers & Fishermen).



Shipwreck scene enlarged

Fig. 2 Asta mahabhaya tara image of Ratnagiri, Odisha.



Fig. 3 Motupalli stone pillar inscription of Ganapati Deva, Kakatiya dynasty of Andhra Pradesh.

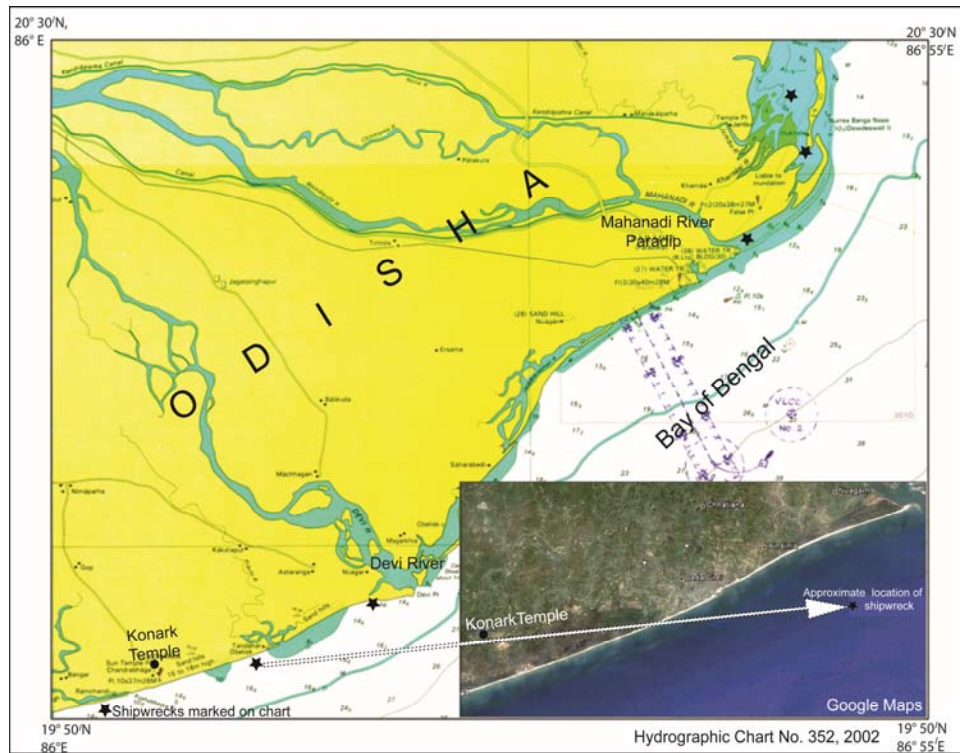


Fig. 4 Location of shipwrecks along the Odisha coast.



Fig. 5 Boilers, anchor chain, winch and frame of the ill-fated ship (Photo: Sabir Bux).

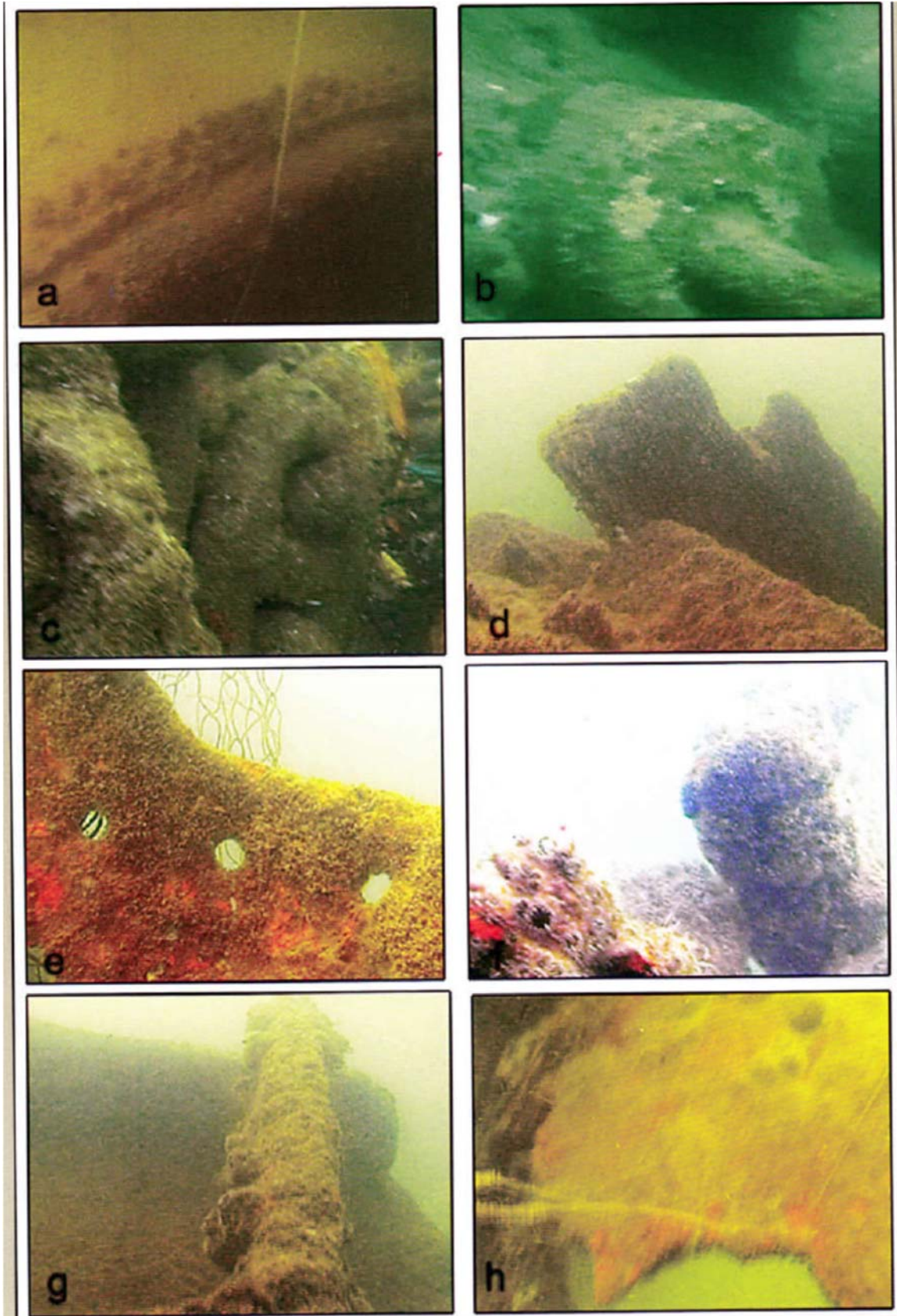


Fig. 6 a-c Metal artefacts collected from the shipwreck off Konark coast.