

The Milan “mermaid”

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Abstract - An ancient false “mermaid” kept at the Natural History Museum of Milan has been examined through X-rays and microscopic observations. It was possible to understand how this artifact was made. The Milan “mermaid” is one of several similar examples known for at least two centuries.

Key words: false “mermaid”, “Feejee mermaid”, historical artifact.

Riassunto - La “sirena” di Milano.

Un’antica finta “sirena” conservata al Museo di Storia Naturale di Milano è stata studiata tramite radiografie e osservazioni microscopiche. È stato possibile comprendere come sia stato realizzato questo artefatto, uno tra gli svariati esemplari simili noti da almeno due secoli.

Parole chiave: artefatto storico, falsa “sirena”, “sirena delle Figi”.

INTRODUCTION

This bizarre object (Fig. 1) began to arouse the curiosity of the curators of the Natural History Museum of Milan at the beginning of the 1980s, when it was recovered in the storage rooms of the paleontological and palethnological collections (Bardelli, 2016). We have no information about its origins, other than the certainty that it is part of a very widespread type of artifacts, generically described as of Eastern or Japanese origin, although with confused information about it (Viscardi *et al.*, 2014).

One of the earliest documented appearances of such chimeras happened in London in 1822, when the “mermaid” of Captain Samuel Barrett Eades was on public display for a long time (Bondeson, 1999). Eades brought

the “mermaid” to London after buying it in Asia during a trip for the company he worked for, “Perkins Co.” of Boston, Massachusetts. This kind of artifacts got the name of “Feejee Mermaids” after the death of Captain Eades when, with a fraudulent advertisement about his “mermaid”, it was exhibited in America by the well-known showman Phineas Taylor Barnum. Barnum passed it off as the property of a London naturalist at a “famous” (but non-existent) British academic body.

Specimens similar to the one preserved in the Natural History Museum of Milan are found in various public and private collections around the world. Built for centuries and often believed until relatively recently as the remains of real creatures, chimeras of very varied appearance are still occasionally produced and sought after by lovers of bizarre taxidermy.

It turns out that a specimen apparently similar to the one now kept in Milan was exhibited to the public in London in the 1830s and that it was bought by “two Italian brothers” for a considerable sum of money, later becoming the subject of a legal wrangle (Carrington, 1957). It has been hypothesized that the two Italian brothers could be Antonio and Giovanni Battista Villa, naturalists and geologists who gravitated around the Natural History Museum of Milan, founders of the Italian Society of Natural Sciences. Unfortunately, however, we currently have no sources or documents to confirm or refute the hypothesis of a relationship between the London “mermaid” and the Villa brothers.

The Natural History Museum of Milan had in the past four fake “sea monsters” made with parts of different animals, mostly fishes, assembled in an imaginative way (Parisi, 1930). Unfortunately, these objects no longer exist; they were presumably destroyed during the Second World War as a result of the air-bombing raid that the museum suffered in August 1943 (Parisi, 1944). Of these specimens only the photographs remain, from which it is evident that they are different from our “mermaid”, although one of them bears an approximate similarity to it. It therefore seems that at least until 1930 the “mermaid” was not part of the Milan Museum collections.

The description (Ninni, 1931 and 1933) of two specimens similar to the Milanese one, belonging to a private collector from Mestre, near Venice, dates back to the same historical period. The common elements between them

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Fig. 1 - The “mermaid” kept in the Natural History Museum of Milan. / La “sirena” conservata al Museo di Storia Naturale di Milano. (Photo: G. Bardelli).

suggest that they were the work of a single manufacturer: a false white beard on the chin, hair covering the junction area between the torso and the tail, the position of the anal fin, removed from its original location and placed between the dorsal and caudal fin. All these features are identical in the “mermaid” now preserved in the “Giancarlo Ligabue” Museum of Natural History in Venice (Reggiani, 2011), which suggests that it is one of the specimens described by the zoologist Emilio Ninni. The same peculiar characters are absent in the Milan specimen. For this reason, it is evident that the Milanese artifact is not one of the two described by Ninni and that it was probably not made by the same manufacturer, despite a close resemblance.

In the rest of the world several other specimens are known in the following locations: Haus der Natur in Salzburg (Austria), British Museum in London (UK), Horniman Museum & Gardens and Science Museum in London (UK), Booth Museum of Natural History in Brighton (UK), Buxton Museum & Art Gallery in Buxton (UK), Great North Museum: Hancock in Newcastle upon Tyne (UK), National Museum of Scotland in Edinburgh (UK), Warrington Museum & Art Gallery in Warrington (UK), Kalamazoo Valley Museum (Michigan), Peabody Museum of Archaeology & Ethnology of Harvard (Massachusetts), Mead Art Museum (Amherst College, Massachusetts), Nature Museum of Grafton (Vermont). Other specimens are held in private collections in various countries.

However, it is certain that between the 1960s and 1970s the “mermaid” of Milan was already in the Milan Museum stored in the premises occupied by a collaborator of the Museum, the archaeologist Ottavio Cornaggia Medici Castiglioni, as part of his personal collection (G. Calegari and G. Teruzzi, *pers. comm.*). After his death in 1979 the “mermaid” was recovered by the museum staff, along with other objects.

Although the question of the artefact’s history prior to the 1960s remains unresolved, several interesting elements have emerged from its analysis.

MATERIALS AND METHODS

The specimen was measured, weighed and externally examined with simple magnifying glasses, identifying the parts of natural origin: teeth, hair, fins and nails.

Thanks to the courtesy of a veterinary clinic it was possible to perform three radiographs, using a Fuji X-ray mammography apparatus at 41 kV and 16 mAs. The radiographs were taken respectively in dorsal view, in lateral left view almost entirely and in lateral left view with the center on the head. Unfortunately, given the size limitations of the radiographic apparatus, no radiography could include the caudal fin.

A small sample of the hair was taken, photographed under a scanning electron microscope and compared with SEM images of human and animal hair.

No other samples were taken, to avoid damaging the specimen.

RESULTS AND DISCUSSION

The “mermaid” is about 31 cm long and weighs 197 g. The body is made almost entirely of artificial materials, most probably painted papier-mâché, considering the density of the material and the characteristic wrinkles on the lower part of the artefact, much less accurately manufactured than the upper part. This difference in accuracy between the upper and lower parts is plausibly due to the purely display function of the object. Papier-mâché has also been used in other similar “mermaids”, such as the “Japanese Monkey-Fish” kept in the Horniman Museum in London (Viscardi *et al.*, 2014).

Under X-rays, two types of support structures are visible inside: segments of metallic wire in the hands and some wooden sticks. In the limbs, there are in fact ten segments of metallic wire (Fig. 2), five for each hand, about 1 mm thick and about 40-50 mm long. These wire segments extend from the base of the wrists to the inside of the claws.

The remarkable parallelism between the portions of wire inside the palms of the hands suggests that they shall be firmly embedded in a wooden matrix, the grain of which is quite clearly visible in the X-ray image.

Inside the body, a wooden stick with a square cross-section extends about 20 cm from the base of the neck to the caudal fin. A second stick connects the inside of the head to the neck; it is about 4.5 cm long and has a sharpened lower end. The junction between these two sticks is clearly visible in the lateral X-ray image, in which it appears as an elliptical ring at the base of the head (Figs. 3 and 4). Near this junction, only traces of glue are visible to the naked eye. A third stick about 4.5 cm long is visible inside the right forearm (that of the extended arm) in the dorsal radiography (Fig. 2). It is therefore possible that a similar stick is also present in the left arm, despite the X-ray image not showing it clearly, due to the poor sharpness of the bent arm and the very low radiodensity.

The internal structure of the head appears non-homogeneous, as can be seen by adjusting the contrast of the X-ray image. The details seem consistent with the observations on the Horniman Museum "mermaid" (Viscardi *et al.*, 2014): in that specimen a length of cord was wound around to bulk up the head.



Fig. 2 - X-ray image in dorsal view. / Radiografia in vista dorsale. (Courtesy Veterinary Clinic "Risorgimento", Milan).



Fig. 3 - X-ray image in lateral left view. / Radiografia in vista laterale sinistra. (Courtesy Veterinary Clinic "Risorgimento", Milan).

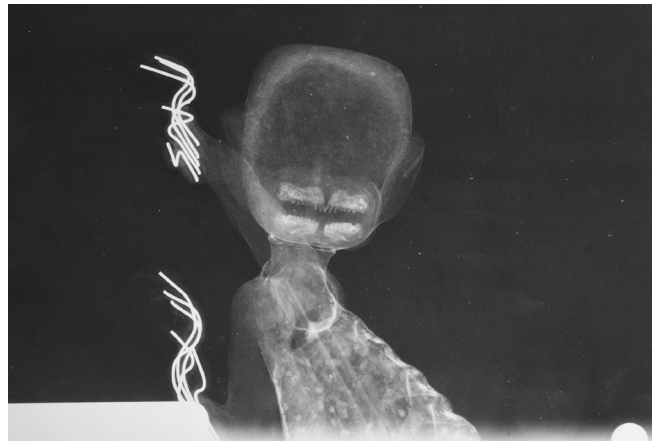


Fig. 4 - X-ray image in lateral left view, centered on the head. / Radiografia in vista laterale sinistra, centrata sulla testa. (Courtesy Veterinary Clinic "Risorgimento", Milan).

The only elements of the "mermaid" of certain biological origin are the teeth, fins, claws, hairs and fish scales.

The teeth (Fig. 5) are 1-2 mm long and perfectly aligned. They are most likely attributable to a fish of the Labridae family, given their shape and size. This is also a resemblance to the "Japanese Monkey-Fish" of the Horniman Museum in London (Viscardi *et al.*, 2014). The X-ray image shows that the teeth are inserted in the original maxillary and mandibular bones, a condition that also accounts for the perfect alignment between them (Fig. 4). However, the two dental arches in both the maxilla and mandible have been separated to allow a greater angle between them, and thus avoiding the narrow and elongated shape of these structures typical in fishes. This division is clearly visible in X-ray image and to the naked eye. The presence of the complete bones of the maxilla and the mandible also explains the protrusion of the false oral apparatus.

The fins (two ventrals, one dorsal and one caudal) are authentic dried fish fins. This effect can be easily achieved by keeping the fins in an extended position and pressed until dry (Zangheri, 1980). The dorsal fin retains a base



Fig. 5 - The head and the right hand of the "mermaid", with teeth, hair and claws. / La testa e la mano destra della "sirena", con denti, capelli e unghie. (Photo: G. Bardelli).

of underlying original tissue that probably helps maintain the alignment of the spiniform rays. This detail is evident in the dorsal and lateral X-ray images centered on the body (Figs. 2 and 3), while to the naked eye it is identifiable as a slight protrusion on the back of the specimen below the fin. At the base of all the fins some small traces, probably of glue, are visible. The glue might be the residue of a partial restoring carried out by O. Cornaggia Medici Castiglioni (G. Calegari, *pers. comm.*). The fish family from which the fins were taken is still unidentified.

The claws, five for each hand and 5-6 mm long, most probably come from a bird. We hypothesize that it could be an unidentified member of the Order Galliformes. One of the claws in the left hand is missing and reveals the tip of the wire inside.

The hair of the “mermaid” is attached to the head in a rather messy way, through the paint that covers the surface. The proximal part of the hair is therefore often encrusted with paint. Hair samples were examined using the scanning electron microscope. The diameter of the hair and the morphology of the keratin scales appear compatible with the characteristics of human hair (Fig. 6).

This result is similar to that obtained for the hair of the “mermaid” kept at the Buxton Museum & Art Gallery (Viscardi *et al.*, 2014).

The body is composed of an anthropomorphic front part and a fish-like back part. The chest has eight pairs of folds simulating a rib cage, with the first and last pair of “ribs” less pronounced than the others. Concerning these folds, the X-ray images do not show any internal structure, so that they appear only the result of an external sculpting.

Between the eight pair of “ribs” and the caudal fin, the surface of the specimen is smooth, to simulate the caudal part of a fish. This part of the body exhibits fake scales, 3-5 mm large, carefully drawn along the entire surface except on a ventral portion. This design is not visible in X-ray images. The fish-like posterior part of the body is strongly opaque to X rays. This fact may be due to the hydroxyapatite and calcium carbonate components of the fish scales, as the arrangement of the opaquer areas seems to indicate. However, the outlines of the scales are mostly drawn on a rather smooth surface, obtained with a var-

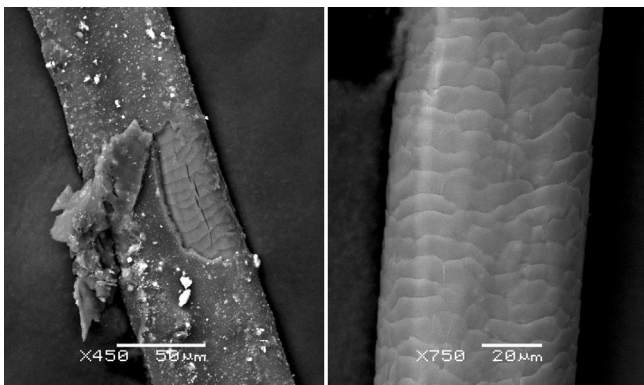


Fig. 6 - Left: “Mermaid” hair. The paint layer has partially peeled off, revealing the keratin scales. Right: human hair. / A sinistra: capello di “sirena”: lo strato di vernice parzialmente asportato rivela le squame di cheratina. A destra: capello umano (SEM photo: M. Zilioli, MSNM).

nish. Only in a few small areas does the posterior outline of the scales appear in relief. It seems that parts of fish skin were used on the back of the body and then covered with a varnish. The outlines of the scales were then made more evident through a meticulous drawing, although not always so accurate.

On the head and shoulders there are several small holes, about 1 mm in diameter. It is likely that they are emergence holes of insects known to feed on papier-mâché, like *Stegobium paniceum*. These holes are not visible in any X-ray image and are absent on the fish-shaped back of the body.

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