DOWNLOAD PDF COLLECTING COPPER AND BRASS.

Chapter 1 : Here's Why Martha Loves Copper Cookware | Martha Stewart

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Registered Design Numbers Copper and brass have been used for centuries for the production of functional, attractive items for the home. These started with cookware and lighting products and soon included large quantities of useful, decorative items for all rooms. The colour and comfortable warmth of the metals were highlighted by attractive, stylish designs that caught the imagination of the householders and the eyes of visitors. Design trends have varied with fashion and have been frequently revived. Pre-dynastic Egyptians knew copper very well and in hieroglyphs copper was represented by the ankh symbol also used to denote eternal life, an early appreciation of the lifetime cost-effectiveness of copper and its alloys. It has been accurately dated to BC and is near a site still used for mining. As mentioned, pre-dynastic Egyptians used the ankh symbol that was also used to denote eternal life, an early appreciation of the lifetime cost-effectiveness of copper and its alloys. They obtained most of their copper from the Red Sea Hills. The older civilisation based on the Euphrates also new copper and well developed smelting techniques. The earliest known artefacts made from smelted metal were copper, and excavations at Catal Huyuk near Konya in Southern Anatolia, showing slags derived from the smelting of copper, have been provisionally dated to as early as 7, BC. Other civilisations in the Near and Middle East, Hindustan and China also developed the use of the vital metal. The Bronze Age Early workers knew that the addition of quantities of tin to copper would result in a much harder substance. This alloy, bronze, was probably the first alloy made and found particular favour for cutting implements. Many finds have proved the use of both copper and bronze for many purposes before 3, BC. Some of the earliest bronzes known come from excavations at Sumer, and are of considerable antiquity. The co-smelting of ores of copper and tin to make bronze would have been either accidental or the outcome of early experimentation to find out what kinds of rock were capable of being smelted. An appreciation of quality in bronze depending on the tin content emerged only slowly. Indications of bronze production as far back as 2, BC come from places as far apart as India, Mesopotamia and Egypt, and make a single origin for bronze smelting significantly further back in time a strong possibility. Trade by land and sea, and the succession of cultures and empires, had dispersed knowledge of the copper-based metals slowly but surely throughout the Old World. Copper, bronze, copper-arsenic, leaded copper, leaded bronze and arsenical tin bronzes were all known by this date in most parts of the Old World. It seems that he was probably a coppersmith himself, since his hair had high concentrations of copper and arsenic, which could probably have come from no other source. Alloys containing zinc were also emerging at this time, from Cyprus and Palestine, though the alloying is believed to have been natural in origin, due to the local ore containing some smeltable zinc minerals. Alloys similar to modern gunmetals were being cast before 1, BC, though the proportions of copper, tin, zinc and lead were not well established. Following the emergence of true brasses in Egypt in the first century BC, possibly from Palestine, the industrious and methodical Romans rapidly consolidated the knowledge and usage of copper, bronzes, brasses and gunmetals. Bell founding originated in China before 1, BC and in time Chinese bell design attained good technical sophistication. The technology spread eventually through Asia and Europe to Britain, where early evidence of bell making has been dated to around 1, AD, through excavation of a bell casting pit at Winchester. Several important books were written during the Middle Ages concerning the extraction, smelting, casting and forging of copper. These established that the casting and working of copper and its alloys had its origins in craft traditions and practices that had developed over several thousand years. How much of this was originally handed down in writing is not known, since it is only from medieval times that the written tradition in technology is unbroken. It is through the Christian monastic and Islamic cultural traditions that detailed accounts of these early technologies have survived. The writings of the monk Theophilus in the 11th Century and of Georgius Agricola and Johannes Mathesius in the 16th Century, all describe in detail the metal producing technologies of their day. Often these had changed little for centuries.

The output from the Bronze Age mines was considerable - an assessment based on old mine maps and studies of prehistoric workings at Mitterberg in the Austrian Alps indicated that about 20, tons of black copper had been produced there over the period of the Bronze Age. The earliest mines in Britain were in the Cork-Kerry area of Ireland, there were several more in Wales and important mines in England were at Alderly Edge, near Manchester. Judging by the artefacts found, reserves in Scotland may also have been worked in Bronze Age times. Significant engineering uses had been found for copper as early as 2, BC, when it was being used at Abusir in Egypt for piping water. Copper and bronze were employed for the making of mirrors by most of the Mediterranean civilisations of the Bronze Age period. Legend has it that the Greek goddess of Love, Aphrodite, appeared out of the sea of Cyprus looking at her reflection in a copper mirror. This has been said to show that the oldest profession is, in fact, metallurgy. The obliteration of Carthage by the Romans has obscured developments in Northern Africa at that time. It is only quite recently that evidence of the considerable engineering skills of the Carthaginians has emerged, including the earliest known use of gear wheels, cast in bronze. Bronze was used in many of the artefacts of every day Roman life - cutlery, needles, jewellery, containers, ornaments, coinage, knives, razors, tools, musical instruments and weapons of war. The Roman invasion of Britain was probably strongly influenced by the need to secure the resources of copper and tin in Cornwall and copper North Wales at the Great Orme, Parys Mountain and elsewhere. The pattern of use tended to be repeated wherever the smelting of bronze and copper was introduced, though necessarily on different time scales. The New World and Africa lagged in these developments by 3, - 3, years because of the distance and isolation of these areas from the trade routes that loosely bound the ancient world. In America, native copper was found in the Great Lakes region and was being worked and used by the locals long before the Europeans arrived. Mining The oldest methods for removing rock from underground mines were the sledgehammer and wedge and the equally ancient technique of fire setting. In the latter case a fire set up against a rock face would produce thermal stresses - the rock would either crumble naturally or could be shattered by water quenching. It was some time after the Islamic world introduced blasting powders to Europe in the 13th century, from China, that explosives were first used specifically for mining. Middle Ages and beyond In Britain, some rich mines near Keswick in Cumberland were worked as early as and no doubt production continued in Cornwall and North Wales although not again of great importance to the economy until the early 18th century. The invention of printing increased the demand for copper because of the ease with which copper sheets could be engraved for use as printing plates. In Germany, playing card designs were engraved on copper as far back as Copper plates have long been adopted as the best means of engraving maps. The first known maps printed from copper plates are two Italian editions, dated , by the geographer Ptolemy. To reduce dependence on European copper and brass, the Society of Mineral and Battery Works was established in for the production of copper and brass artefacts in Britain. They set up factories at sites throughout the country. Besides naval needs for cladding and cannon, the main demand was for wire for the combs vital to the wool trade. Mining was re-developed in Cumberland at Keswick and in Westmorland. The intention was to make the Country self sufficient and by it was possible to recognise this with a heavy duty on imports. Copper had been extracted at Parys Mountain in Anglesey since before Roman times. The body of ore was so rich that water flowing from the mountain was rich in copper. As early as there was an experiment to win this at low cost by the use of settling basins loaded with iron scrap. This precipitated the copper very successfully and later became a standard technique. Extraction of copper from sites on Parys Mountain was developed successfully by local and other businessmen. In , James Watt patented his design of steam engine. This made it possible to pump water from mines much more economically. It also increased demand for copper for boilers. Their aim was the joint marketing of copper from Anglesey and Cornwall so that the price would provide venture capital to cover further exploration and extraction. During the years to the output from Parys Mountain was over 9, tons of ore per year, yielding tons of copper. This made it the biggest copper mine in the world at that time. The ore was initially shipped to Swansea for refining but as competition developed, also to Cheadle in the Peak District where Thomas Patton had set up in to refine the local ore from the land of the Duke of Devonshire. Later it became economic to establish a new refinery near the docks at Liverpool. Initially this dealt with ore from North Wales but later from other imports. Copper has other important uses at

sea, as copper sheathing of the hulls of wooden ships was introduced in the middle of the 18th century. This was intended to protect the wood against shipworm when in warm seas. It was found that it also kept the hulls free of barnacles and other marine growth, preventing the consequent severe drag that slowed the ships. The tonnage of copper needed had a significant effect on the price in Britain and the prosperity of the industry. Now, copper-nickel cladding can be applied to wood, polymer or steel hulls to prevent the fouling of ships operating at higher speeds. Much of this was controlled by the Cornish Vivian family. At first, Swansea obtained most of its ore from many mines in Cornwall and also Anglesey. Mining of the rich deposit in the Great Orme at Llandudno was restarted. Eventually the shafts went down to six levels. The spoil heaps that were formed obscured evidence of the earlier Bronze Age workings but these have now been re-excavated and are an interesting visit. Workings of a similar period have also now been found at Parys Mountain despite the large open pit resulting from 19th Century extraction. These are not easily available because of the very acidic nature of the mine water. Ireland has several significant copper deposits that were developed at this time. Scotland also has sources of copper but they were a long way from the refineries. They were not long commercial except where the copper was found with silver, as up in the Ochills outwith Stirling. As industry developed and other sources were found abroad, almost all ores were imported. The smelting of the ores subsequently moved nearer the sources of supply. During the 19th century Birmingham became the main centre for fabricating non-ferrous metals in Britain, a position that is still held. Many major developments in the copper industry emanated from the Birmingham area. Towards the end of the 19th century Alexander Dick introduced the fundamental new process of hot extrusion for making brass rod from billet. This was originally by the River Thames in Greenwich, London but the process was rapidly developed in Birmingham and surrounding districts. The use of copper as a roofing material will continue to grow. In many countries it is well accepted as a standard material needing only basic support structures for its low weight. The colour of the patina developed is much appreciated and the long maintenance-free lifetime much valued. Until recently the low lifetime cost had not been quantified, but now that authoritative figures are available it is being appreciated as much as an economic roofing material as for its looks. Brass Brass has been made for almost as many centuries as copper but has only in the last millennium been appreciated as an engineering alloy.

Chapter 2 : Brass - Wikipedia

This is a complete guide to collecting copper and brass, beginning with the composition and properties and how it is treated for manufacture. It includes descriptions of brass, bronze, ormulu, pinchbeck, Muntz's metal, gunmetal and bell metal, and how these are made into useful articles or ornaments.

Brass is a yellow alloy mainly of copper and zinc but it can include other metals. The inexpensive, yet strong metal makes it ubiquitous across many cultures and objects for thousands of years. In modern times, brass was particularly favored during the Art Deco Movement of the s and the Modernist Movement of the s and 70s, the complete opposite of the darkly patinated copper and bronze used during the Arts and Crafts and Art Nouveau Movements. It was also a favored metal to use for accenting firearms and swords. Vintage items popular among collectors Among the most heavily collected items today include chandeliers, figurines and statues, nautical items, clocks and pocket watches, and even microscopes. All of these items can be readily found at your local thrift store and flea markets. In fact, there are sellers on Etsy. Younger buyers who are attracted to simple forms and uses, particularly bookends, affordable jewelry, designer candlesticks and even furniture, favor the color. Solid examples of bookends are commanding higher prices these days, particularly figural examples of animals and people. High-quality castings are back in style. Low-quality castings are also holding their values even if those values are not particularly high to begin with. With brass, the older the object, the more value it offers to the decorator or collector. Home items from the late and early s are collected based on their use. Several artists who worked in brass continue to see their values climb. Interestingly, many people are introducing artificial patinas to common, low-value brass objects for decorative effects. This can be achieved by applying vinegar, salt, some window cleaners and even hardboiled eggs. The brass object is placed into an airtight container for several hours to acquire the desired coloration, such as a ruddy, rust or green or even bronze look. Collectors should be aware of these artificial patinas if they are on the lookout for authentic pieces. Both cultures were adept at using the metal in objects and tools, but many items were made for religious ceremonies. Again, the learned collector should study commonly used designs and castings before investing a lot of resources here. The market for Indian brass has plummeted due to the mass amounts of imports flooding into the country. Brass from India should only be purchased from a reputable dealer or auction house. The key to collecting quality brass items is based on careful observation. First, a quality brass item should not have any machining or mold marks or any other evidence that modern machinery was used in the making of the piece. Second, try to find out as much as possible about the time period in which a piece was made. This will help you understand the composition of the item and where it likely came from.

Chapter 3 : - Collecting Copper and Brass by Geoffrey Wills

Copper The finest antique copper pieces are very heavy, show little wear, and have no dings or dents. The color should run to red rather than pink, which is a sign that the piece is new and probably has an aluminum core.

History[edit] Although forms of brass have been in use since prehistory , [39] its true nature as a copper-zinc alloy was not understood until the post medieval period because the zinc vapor which reacted with copper to make brass was not recognised as a metal. Many have similar tin contents to contemporary bronze artefacts and it is possible that some copper-zinc alloys were accidental and perhaps not even distinguished from copper. There is good archaeological evidence for this process and crucibles used to produce brass by cementation have been found on Roman period sites including Xanten [66] and Nidda [67] in Germany , Lyon in France [68] and at a number of sites in Britain. The fabric of these crucibles is porous, probably designed to prevent a buildup of pressure, and many have small holes in the lids which may be designed to release pressure [68] or to add additional zinc minerals near the end of the process. Dioscorides mentioned that zinc minerals were used for both the working and finishing of brass, perhaps suggesting secondary additions. These places would remain important centres of brass making throughout the medieval period, [82] especially Dinant. Brass objects are still collectively known as dinanterie in French. The metal of the early 12th-century Gloucester Candlestick is unusual even by medieval standards in being a mixture of copper, zinc, tin, lead, nickel , iron, antimony and arsenic with an unusually large amount of silver , ranging from The proportions of this mixture may suggest that the candlestick was made from a hoard of old coins, probably Late Roman. Aquamaniles were typically made in brass in both the European and Islamic worlds. Brass aquamanile from Lower Saxony , Germany, c. In 10th century Yemen al-Hamdani described how spreading al-iglimiya , probably zinc oxide, onto the surface of molten copper produced tutiya vapor which then reacted with the metal. A temporary lid was added at this point presumably to minimise the escape of zinc vapor. The final product was cast , then again melted with calamine. It has been suggested that this second melting may have taken place at a lower temperature to allow more zinc to be absorbed. Though normally described as "bronzes", the Benin Bronzes , now mostly in the British Museum and other Western collections, and the large portrait heads such as the Bronze Head from Ife of "heavily leaded zinc-brass" and the Bronze Head of Queen Idia , both also British Museum, are better described as brass, though of variable compositions. Brass making in Renaissance and post-medieval Europe[edit] The Renaissance saw important changes to both the theory and practice of brassmaking in Europe. By the 15th century there is evidence for the renewed use of lidded cementation crucibles at Zwickau in Germany. Their irregular composition suggests that this was a lower temperature, not entirely liquid, process. By metallic zinc ingots from India and China were arriving in London and pellets of zinc condensed in furnace flues at the Rammelsberg in Germany were exploited for cementation brass making from around

Chapter 4 : How to Tell Brass from Copper: 9 Steps (with Pictures) - wikiHow

Read Collecting Copper and Brass by Geoffrey Wills by Geoffrey Wills by Geoffrey Wills for free with a 30 day free trial. Read eBook on the web, iPad, iPhone and Android This is a complete guide to collecting copper and brass, beginning with the composition and properties and how it is treated for manufacture.

Chapter 5 : Polish up on collecting antique and vintage brass - Antique Trader

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Copper was used in early cartridges. The cartridge has a history of issues with early copper rounds. I don't collect's but I have seen some that appear to be copper, however I would think copper was used before Remington purchased UMC but I could be mistaken.

Chapter 9 : Collecting, Cleaning, and Caring for Copper and Brass | Martha Stewart

Brass has been used for decorative pieces and useful tablewares since ancient times. During the end of the first millennium B.C., when the Roman empire existed, brass was used across Europe. It is an alloy of copper, zinc, and other metals.