

METALLURGY-ETHNOLOGY

# Gold

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**P**ROBABLY the word gold is used more frequently in the language of metaphor than in direct reference to the metal itself. It will be found employed thus many times in almost any book, and it recurs constantly in our daily speech.

We refer to a Golden Age, a golden hour, a golden memory, the Golden Rule, and to silence that is golden. A golden fleece inspired the Argonauts to adventure; a Golden Edict granted rights to an oppressed people. There is a golden mean of conduct; the word of an honest man is as good as gold. There are golden voices, opportunities and opinions.

Things are said to be as pure as gold; a voice resembles liquid gold; worthy people have hearts of gold. Many uses of the word refer to its color and metallic luster, as golden sunset, golden hair, golden grain. Thus the word is employed to suggest not only a lustrous yellow metal, but purity, value, worth, merit, perfection, beauty, and other similar qualities that indicate the high esteem in which this element has long been held.

Yet gold is a metal, as iron, copper, lead, zinc, aluminum, and tin are metals. It resembles all of them in a general way, some of them closely; even its color can nearly be matched by brass, a mixture of copper and zinc, or by bronze, a compound of copper and tin.

Why then is gold so valuable and so important? Certainly not because it is yellow, heavy, malleable, ductile, and lustrous. The explanation is that this one metal is endowed with a particular combination of properties that made possible its ancient discovery, and led to its early utilization, to widespread longing for its possession, and finally to its use as a measure of worth and as a means of storing value for the future.

The human desire that results in gold being so highly prized is as old as history. It has persisted through thousands of years. During perhaps a hundred centuries, while nations rose and fell, as conflicting philosophies, religions, and the languages in which they were expressed, waxed and waned, mankind agreed in this at least: Every one wanted

gold. This desire was paralleled in intensity and persistence only by the craving for food and other necessities of life, for which gold could be exchanged.

Throughout the ages, can man have been mistaken in his esteem of gold? Was he infatuated and beguiled by its yellow glitter, though not by the gleam of brass and bronze? Assuredly not. Though he was not aware of the numerous factors that jointly created gold's value, he was competent to judge whether a little gold would serve him as well, or better, for certain purposes, than many times its weight of brass or bronze,—and he decided that it would.

## Never in Excess

One reason for his choice was his observation that, with gold, he could buy not only brass or bronze, but any other commodity, whenever he chose to do so, and that he need not hurry to trade it away, as he did when he invested in perishable commodities or those that cost something to store and keep; gold gave command of time. Man knew that until he decided what should be bought with his gold, he could secrete it or transport it more easily than other commodities of equal worth. In his purse, he could carry enough to pay for all the grain many beasts-of-burden could carry. Gold was so indestructible that if buried, it would not rust; even if melted by fire, it would still remain the pure bright metal. If its possessor traveled to a distant land where people spoke an alien tongue, they would nevertheless understand the worth of the gold he offered them in trade.

Gold was more stable in value than other commodities; all others varied more widely and more rapidly in price. Oversupply of many of them, due to seasonal production, was followed by depletion and dearth, because they were gradually consumed. The effect on prices is illustrated by the low cost of grain after harvest and the high price before it, or by the charge for fish after and before an unusual catch. Gold, however, was neither consumed nor supplied in great excess. Withdrawals and returns of gold, from and to circulation, tended to balance in the long run; if its value began to decrease because of oversupply, export of gold to other places,

where it would buy more, tended to occur because it was so easily transported.

Hence, its price was fixed less by local than by wide demand, and it was therefore, more stable in relation to the mean of prices in general. The superior steadiness in the value of gold was naturally prized by the prudent, who were saving for the future and for old age. Just as insurance funds are invested to provide security above all else, so men of the past who wanted to store for future use sought gold in preference to other commodities as means to this end.

For these and similar reasons, it was not illogical that man used gold long before there was money. It was easily beaten into the desired form, and its softness helped to save it for special purposes, since it was not hard enough to be generally useful and was therefore reserved for ornaments. As its esteem for personal decoration grew, it naturally went from the weaker to the stronger, from the tribesman to the chief, and so it was hoarded and saved.

Almost precisely the same circumstances applied to silver after its discovery, which was later than that of gold; both metals had been employed in barter and trade, as preferred mediums of exchange, long before the first coin was made, and ages before our present monetary systems began to evolve from the use of gold and silver money. At an early date, however, much larger stocks of silver than of gold must have accumulated, because the price of the former appears to have been only a fifth of the price of gold when mining of silver was begun by the Athenians.

## Nugget For a Seat

The monetary systems of the present have marvelous social utility, but they should not be deemed more remarkable than the automatic evolution of exchange in earlier times through the use of gold and silver, from which financial methods were, in turn, evolved.

The early basing of commodity-exchange upon metal was induced by prehistoric man's discovery of so-called placer deposits of gold in stream-beds of Asia, Africa, and Europe. Indestructibility and high specific gravity of the metal were important factors. In many such deposits, the gold could be seen readily, as it was in 1848 when discovered in California. Placer gold



#### DREDGING FOR GOLD IN CALIFORNIA

*The dredge is built in a dry hole dug in gold-bearing gravel. It is then floated on water pumped for the purpose. Thus, as the dredge works, digging up and washing gravel for gold, it carries its artificial pond about with it.*

may occur in tiny flakes or grains, or in nuggets of considerable size. One nugget found in California weighed nearly 1,600 ounces. Another in Australia exceeded 2,000 ounces; it was revealed by the rut made by a wagon wheel. A savage would hardly ignore such a nugget even though he had no previous knowledge of this metal. Leo Africanus, writing during the Middle Ages of a king who lived on the Gold Coast of Africa, described him as using a huge nugget of gold as a seat.

Gold is identified more readily than other metals, because they usually occur in nature in chemical compounds; the property of gold that keeps it bright and free from tarnish likewise prevents it from passing into solution, and from combining readily with other elements. It is relatively imperishable. That is why it is found concentrated in placers as a bright native metal. Glittering objects catch the eye of animals; gleaming gold must have attracted instantly the attention of primitive man. It is presumed to have been the first metal discovered by human beings, though there are no records to prove it. We only know that gold was established in use and in the esteem of man when history began.

Two other things about gold have probably been important. It is widely distributed about the earth's surface, as it occurs to some extent in nearly every country. This would tend to make all peoples acquainted with it sufficiently to account for its widespread acceptance. The other is the fact that nowhere is gold extremely abundant. Most of the

time, before the present century, the increase in accumulated stocks of the metal throughout the world proceeded slowly, and the amount added each year was not sufficient to disturb the value of gold, especially as the addition would tend to be balanced somewhat by growth of population and by expansion of trade. The latter accounts for the ready absorption of enormously expanded production of gold in recent years, without pronounced effects in inflation.

#### Much Ado About Little

The whole fascinating story of gold, covering its occurrence, discovery, production and use, its influence upon progress and civilization, on history, the struggle of man to conquer his environment, and upon his mind, oriented to gold as a symbol of individual, national and social well-being, concerns an astonishingly small amount of this precious metal. All the gold produced in the world since the discovery of America, which probably exceeds vastly the total in the ages before, could be contained in a cube measuring less than 40 feet on each edge. In weight, this amounts to only about 38,000 short tons; over fifty times that weight of copper was produced in one year, 1929.

Think of the work and effort, the rivalry and strife, the injustice and oppression, the schemes and plots, the quarrels and fights, the battles and wars that have been involved in the accumulation and preservation, the winning and owning, of this relatively small amount of yellow metal!

A one-inch cube of gold is worth about \$210; if an infantryman in the United States army carried the weight of his standard battle equipment of  $71\frac{3}{4}$  pounds, in gold, he would have \$21,600 worth—enough for a cube 4.7 inches on an edge. If you could carry 250 pounds on your back, you might walk away with a little over \$75,000 worth of gold, which would make a cube a trifle larger than 7 inches on an edge. If you owned a 9-inch cube of pure gold, you would have over \$150,000.

In more than  $3\frac{1}{2}$  centuries, from the discovery of America to about 1850, only 151 million ounces of gold had been produced in the entire world; but in the next 82 years, ending with 1932, 959 million ounces or  $6\frac{1}{2}$  times as much, was produced at a rate 28 times as fast. The earlier production came from placer mines or from gold mines that could not be worked far below the surface. Now the amount from placers is small in comparison with that from veins; vein-mines sometimes extend a mile and a half into the earth, this having been made possible by recent technologic advances in the art of mining; the story of the winning of gold is not yet finished.

You might not know that the greatest gold mine in the United States is in South Dakota; it is called the Homestake. Alaska contains the second largest. You would rightly guess that more gold has come from California than any other state. Canada produces more gold than we do; in fact, last year the Province of Ontario alone was the source of more gold than the whole of the United States. The greatest producer in Canada is the Lake Shore mine; the Hollinger stands second. About half of the gold won annually in all the world comes from the Union of South Africa; nearly two hundred and forty million dollars worth was won there last year. The greatest African mine is called Government Gold, with the Crown mine a close second. Either produces nearly 3 times as much as our largest mine.

Truly it may be said that there is a golden thread running through the embroidered tapestry of history, from dim prehistoric figures of men trading nuggets, to our own financiers and leaders of industry conducting vast transactions based upon minted gold, but it should not be overlooked that this filament of gold is interwoven throughout with one of silver, and that silver is now employed as the basis of money by Eastern peoples as numerous as those of the West who use gold for this purpose.