

Who Put the “d” in Pennyweight Anyway?

A Brief History of Scientific Weights and Measures

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History, language and scientific weights make strange bedfellows.

The unit of grain arrived from agrarian society and is still used in dentistry today.

A grain was a unit of mass based upon the weight of a single seed or grain from wheat or barley at the middle of the ear. These amber grains were the legal foundation of the traditional English weight system.¹ A troy ounce is 480 grains.

The troy weight likely takes its name from the French town of Troyes, France. English merchants traded in Troyes from at least as early as the 9th Century.²

The precious metal industry no longer works in troy pounds. However, there are 14.583 troy ounces to an avoirdupois pound.

The troy ounce is used to weight precious metals and gemstones. Everything else is weighed in the avoirdupois system or converted to metric systems.

The English troy ounce was officially adopted for in the Coinage Act of 1527 to weigh gold and silver. The English pennyweight was now the troy pennyweight. The British monetary penny was 1/20th of a troy ounce. Precious metal prices are listed in troy ounces.

The U.S. too followed suit in adopting the troy ounce as the official weight for coinage by Act of Congress in 1828.

An avoirdupois ounce is abbreviated avoird. or simply av. There are 16 av. ounces to a regular postal or av. pound. Avoirdupois derives its name from the French avoirdupois, which translates as *goods of weights or property*.

So, who put the d in pennyweight anyway? How did dwt. become the abbreviation for pennyweight?

Precious metals and gemstones are weighed in troy ounces. Everything else is weighed in the avoirdupois system or metric systems.

Early Roman currency included the gold *aureus*, the silver *denarius* and the brass *sestertius*. The gold *aureus* and silver *denarius* would circulate throughout the Roman Republic

1 Rowlett, Russ How Many? A Dictionary of Units of Measurement. Chapel Hill, NC. University of North Carolina at Chapel Hill. Grain [1-3] Retrieved March 2013

2 Oxford English Dictionary. Oxford, England: Oxford University Press. June 2012. *The received opinion is that it took its name from a weight as the fair of Troyes in France.*

and Empire for 400 years. The *denarius* would become the latter day British penny.

The early common abbreviation for penny was d, from the Roman *denarius*. Thus the d became a measure of weight as d weight or abbreviated as dwt. There are 20 pennyweight or 20 dwt. to a troy ounce. Thus, the answer to the title question is that intertwined Roman and British history, language and traditions of weight nestled together to put the d in pennyweight (dwt.).

The pennyweight bears no relation to the weight of current penny coins.

The literal Latin translation for libra was scales or balances. The Roman word libra came to be known as the pound and would be shortened to simply lb. Libra also spawned the

currency symbol £ for pound sterling in the United Kingdom.

The French proposed a revolutionary metric system during the French Revolution of the 1790's. The metric system sought to bring order to European weights and measurements.

The metric system, used for scientific purposes, is the universal measurement system for countries. Many countries have converted to the metric system, whereas the U. S. has not.

Weights and Measures

1 dwt. = 1.555 grams

31.1034 gram = 1 troy ounce

480 grains = 1 troy ounce

20 dwt. (pennyweight) = 1 troy ounce

14.583 troy ounces = 1 avoirdupois lb.

Which weighs more, an ounce of feathers or an ounce of gold?

To answer, one needs to compare in the metric system. Only precious metals and gemstones are weighed in troy oz.

1 oz. feathers = 28.35 grams = 1 avoird. oz.

1 oz. gold = 31.1 grams = 1 troy oz.

Thus, a troy ounce of gold is almost 10% heavier than an avoirdupois ounce of feathers.

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