

# WOLF'S PLUMB BOB NEWS 2012

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## ROMAN PLUMB BOBS

Author: Wolf Ruecker

www.plumbbobcollectors.info

Dear Fellow Collector,  
Dear reader of the PLUMB BOB NEWS,

Please, as always I am in search of new photos, catalogs, articles or personal stories about any aspect of PLUMB BOBS from you. Any help is appreciated.

**If you have any information or pictures for these themes, please let me know.**

Thank you, looking forward to hearing from you

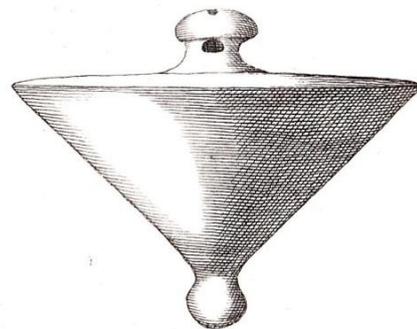
Wolf

### ROMAN PLUMB BOBS

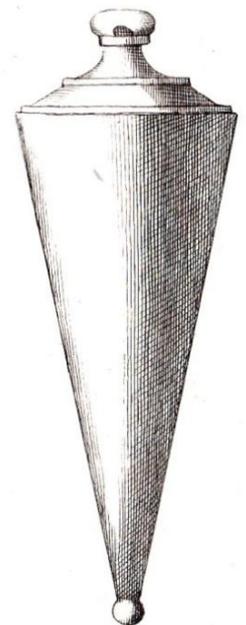
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*Fig. 3.*

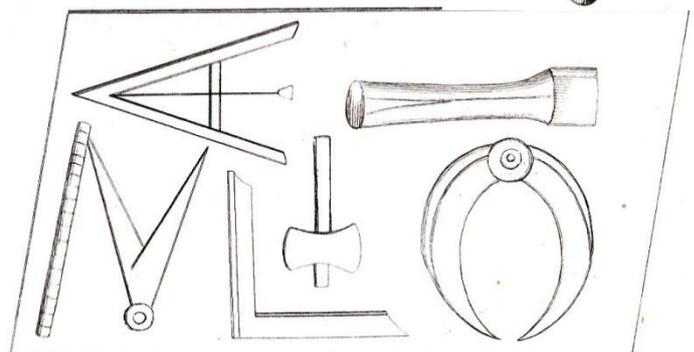


*Fig. 4.*



From an original French drawing (unknown source) in my collection that is marked "ANTIQUITÉS No. 15" here some shapes of antiques Plumb Bobs or Plumb Level.

*Fig.*



## 1. INTRODUCTION

Dear Fellow Collector,  
On Ebay and in shops different items are offered often as "ROMAN PLUMB BOBS".

We find

- real plumb bobs
- and other tools / pieces like
  - loom weights
  - sling bullets
  - weights
  - others

I will try to explain the differences.

The material is copper (bronze), lead, stone (clay, terracotta).

Sure you can use as a plumb bob every piece/weight that hangs on a string, but a "born plumb bob" has a special shape (with or without a tip) and a hole in the top to fix the line. Some sellers only will make money and so they sell simple weights as plumb bobs. It is not easy to decide if it is a real plumb bob or was used as a plumb bob.

**Unfortunately we can't ask the tools ☹.**

That would be great ☺



We can find Roman plumb bobs all over Europe: From England to Spain, Bulgaria and Turkey. In the east also in the Iraqi and Israel. Also in the countries around the Mediterranean Sea we should find Roman bobs. When we compare the map above (Roman Empire) with the map of the Ottoman Empire (below) with the Ottoman plumb bobs (see WOLF'S PLUMB BOB NEWS 2009-08 Ottoman plumb bobs) then we see a lot of identical countries. It would be interesting to find out the evolution of the plumb bob shapes there.



## 2. ROMAN PLUMB BOBS FROM COLLECTORS

On the next pages some pictures of original Roman Plumb Bobs that I got from Fellow Collectors:

FROM MY COLLECTION:

- BRASS / BRONZE
- 50 x 50 mm
- Found in Hungary
- 350 gr



FROM THE COLLECTION OF GSCH



BRONZE  
273 gr



- LEAD
- 52 x 42 mm
- Found in Hungary
- 580 gr



BRONZE  
35 x 29 mm  
116 gr

FROM THE COLLECTION OF DB



FROM THE COLLECTION OF ND



FROM THE COLLECTION OF HTSCH



All these plumb bobs are from BRONZE and have a nice, but different PATINA.

### 3. ROMAN PLUMB BOBS IN MUSEUMS

In some MUSEUMS are Roman Plumb Bobs displayed:

RÖMISCH-GERMANISCHES MUSEUM,  
COLOGNE, GERMANY

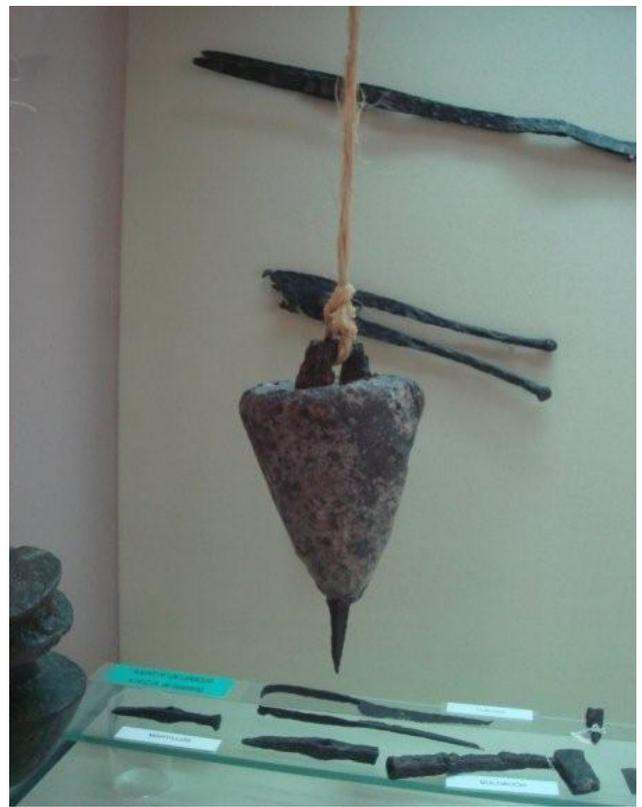


REPRODUCTION .  
LIMESMUSEUM,  
AALEN, GERMANY  
The Limes Museum is  
located on what was  
formerly the largest  
Roman fort north of  
the Alps. The fact that  
the ancient Roman  
Limes is now a  
UNESCO World  
Heritage Site gives this  
Roman Museum (the  
largest in Germany),  
an important  
distinction.



NAPOLI, ITALY





BRITISH MUSEUM, LONDON

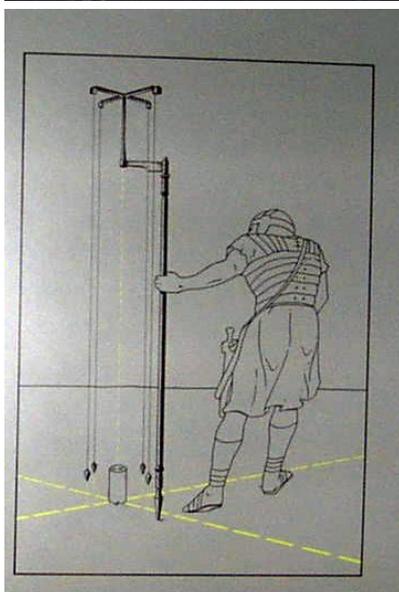
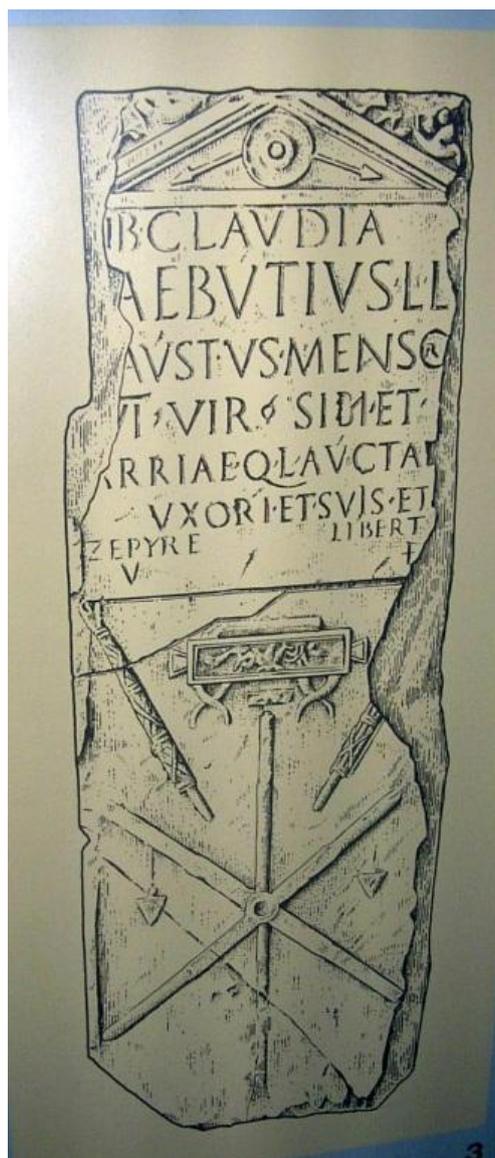
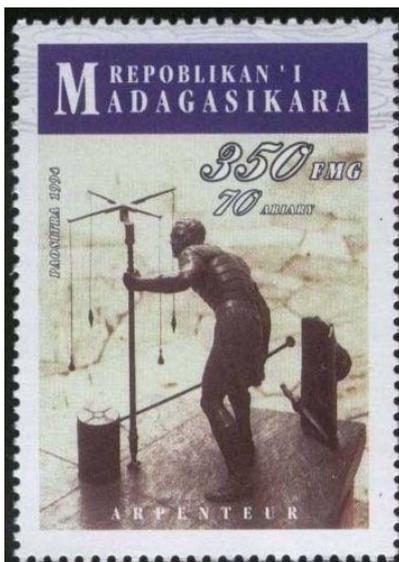


#### 4. USE OF THE PLUMB BOBS

The plumb bobs were used as a **single tool** by masons and carpenters or in an **instrument** (like the GROMA or CHOROBATE) by the surveyors:

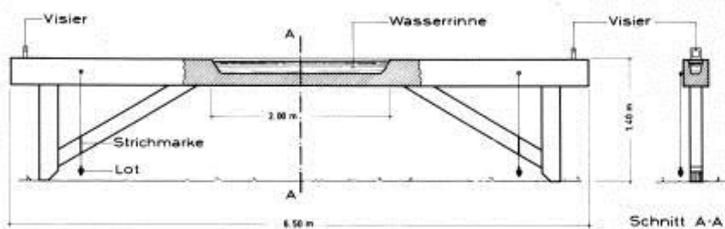
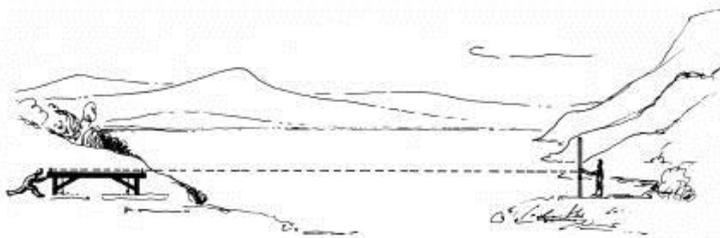
The **GROMA** consisted of a vertical iron staff (ferramentum) about 5 feet long, pointed at the lower end, and with a cross arm, 10 inches long, pivoted at the top, which supported the main aligning element - the revolving "stelleta" (star) with arms about 3-1/2 feet across: The two main roads at right angles in a Roman encampment were located by sighting beside the two plumb lines suspended from the end of the cross arms to coincide with the central plumb line over the selected central point. Areas of fields were measured by settling out two right-angled lines, joining their extremities by straight lines and finding the perpendicular offsets from these to the irregular sides.

A reproduction in the museum in Eichstätt, Germany:



CHOROBAT REPRODUCTION in the  
DEUTSCHES BERGBAUMUSEUM (  
MINING MUSEUM) BOCHUM, GERMANY

The **CHOROBATES** is described as a rod 20 feet long with duplicate legs attached perpendicularly at each end. Diagonal pieces connect the rod and the legs, and both diagonal members have vertical lines scribed into them, over which plumb bobs are hung. When the instrument is in position, and the plumb-lines strike both the scribe-lines alike, they show the instrument is level. If the wind interferes with the plumb lines, the water level at the top of the horizontal piece is used. Vitruvius instructs that the water level groove was to be "five feet long, one digit wide, and a digit and a half deep". By using two or more chorobates, established levelly, the vertical distance between instruments could be established by sighting along the depth of the uphill instrument, to a rod placed atop the lower chorobate.



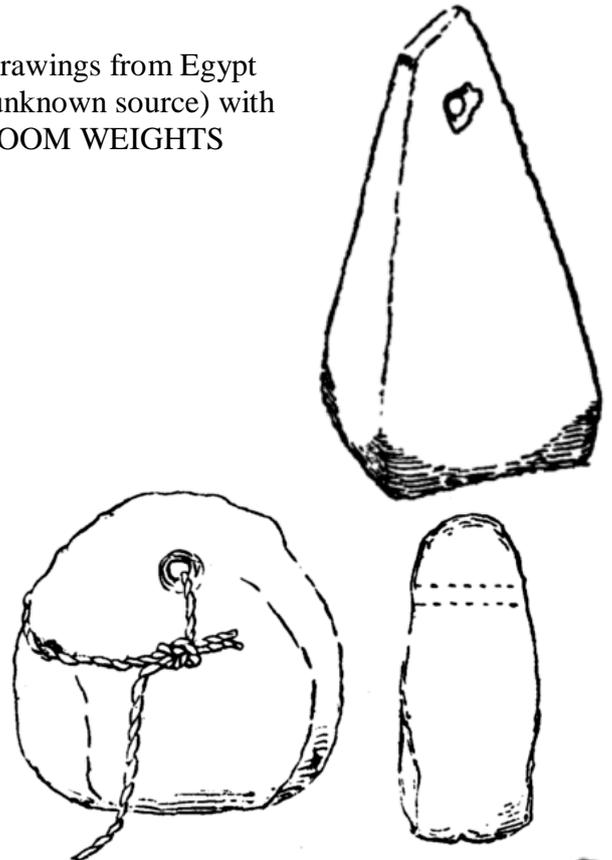
## 5. OTHER SHAPES OF ROMAN TOOLS

### TOOLS

Often I am asked by collectors about this shape: It is a **LOOM WEIGHT**



Drawings from Egypt  
(unknown source) with  
LOOM WEIGHTS



For weaving loom weights were used to hold the thread tight. The loom weights are made of **TERRACOTTA, CLAY** or **LEAD**. They have a horizontal hole in the top to fix them on the thread or a rod.

The shape often is pyramidal. These **WEIGHTS** are fixed on a single thread or on the horizontal rod.



## SLING BULLETS

These bullets (different shapes) used in a sling (weapon) by hand are made from **CLAY / TERRACOTTA OR LEAD**  
They have **NO HOLE!**  
Picture from MUSEUM EICHSTÄTT, GER



## SPINNING TOOLS

For manual spinning a special shape with a big vertical hole in the middle which is used to put the wooden spindle in (to make it heavier).  
Picture right from museum Eichstädt, GER.



From my collection: spinning tools from lead.



## WEIGHTS FOR A SCALE



For the so called Roman Scale, a weight was used:



Roman Scale with the head of Bacchus as a weight:  
Photo: Museum Thurnfels, Völs, Tirol, Austria.



## 6. REPRODUCTION OF A ROMAN PLUMB BOB

Two years ago I met in a museum nearby an artist who sold reproductions of Roman artifacts. I asked him if he could make me some Roman Plumb Bobs, when I give him a model. His answer: No problem for me. Here comes the story:

This is the flyer of this group.

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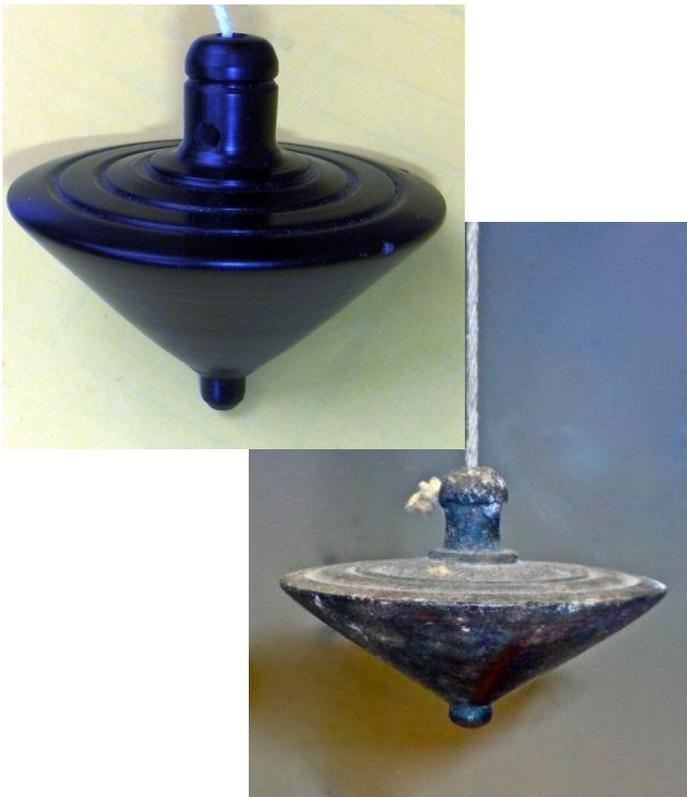
This is the complete “FOUNDRY“ with all the equipment:



The mould with the model. Upper and lower part. Special casting sand was used.



Ulich Biber made me a wooden (African blackwood) model on his lathe in the shape of a plumb bob that we saw during our meeting in Oct. 2010 in Cologne, Germany.



Two moulds ready with a sprue.



Casting of the molten Bronze



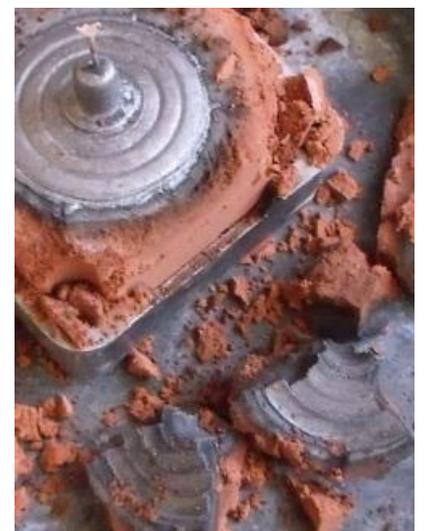
Brass + special chemicals heated to 1000 + degrees Celsius in a graphite crucible and poured into the mould.



Opened after one hour of cool down time.



Taking off the casting sand.



Looks not already like a real plumb bob ☺



Drilled with a horizontal and vertical hole.  
Brushed and polished



**READY!**

HEIGHT: 56 mm / 2 1/6 in  
DIAMETER: 60 mm / 2 1/4 in  
WEIGHT: 370 gr / 12 oz

After one year hanging in my garden it began to get a patina.

Different states of the product.



## 7. SOMETHING TO SMILE ABOUT

### DO YOU KNOW THE LONGEST PLUMB LINE OF THE WORLD?

Here it is in the 1907 ad of the SEABOARD AIR LINE RAILWAY, NY U.S.A.

One of our Fellow Collectors, my friend Greg lives 10 miles beside this "plumb line"! In his first answer he thought living directly beside the "plumb line railway"

He wrote me:

*The American Tobacco Trail, a former railway spur converted to a 30 mile trail for bikers is located behind our house-look it up on Google Earth at 446 Rosemont Drive, Durham, North Carolina!*

But later he made a correction:

*However, after a closer look The American Tobacco Trail behind our house (formerly a railroad spur solely used to transport tobacco for the Duke family's cigarette empire, between 1880-1930, at that time period, the largest tobacco manufacturer in the world), we discovered that it is a railroad spur that unfortunately did not quite intersect the Seaboard Plumb Bob Line-it goes directly south, but does not travel all the way to Hamlet, North Carolina, where it would have connected to the Seaboard Coast Railway. It ends just before Sanford, North Carolina, about 20 miles north of Hamlet, North Carolina, **the Seaboard Coast Line Railroad station where my mom worked for over 10 years and uncle worked for over 40 years.***

*I remember my Uncle Burgoone bringing back HUGE bags of fresh Florida oranges on his frequent trips sown south on the **Plumb Bob Line**. Everyone called it **the Plumb Bob Line**, but the reason for the name never "clicked" with me, until your comments a couple of weeks ago!*

Greg, thank you for this story!

## 8. REMARKS

This is an article of the monthly published WOLF'S PLUMB BOB NEWS that is sent on demand as PDF-file attachment by email. FREE.

You can see all former publications on the web site

[www.plumbbobcollectors.info](http://www.plumbbobcollectors.info) on page "download publications".

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