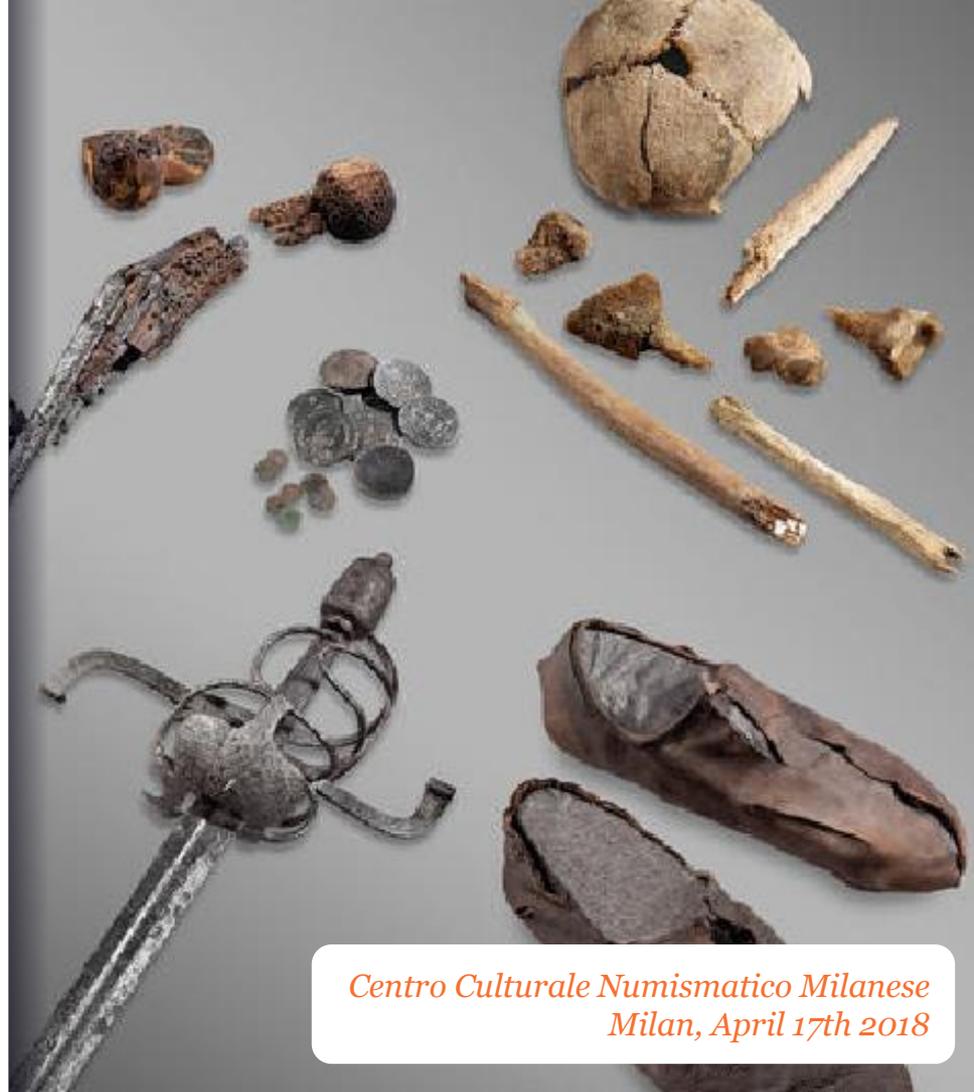


# IN THE POCKET OF THE “MERCENARY”

The find of the Theodul Pass  
(coins of the 15<sup>th</sup>-17<sup>th</sup> centuries)

Luca Gianazza – <https://www.sibrium.org/>



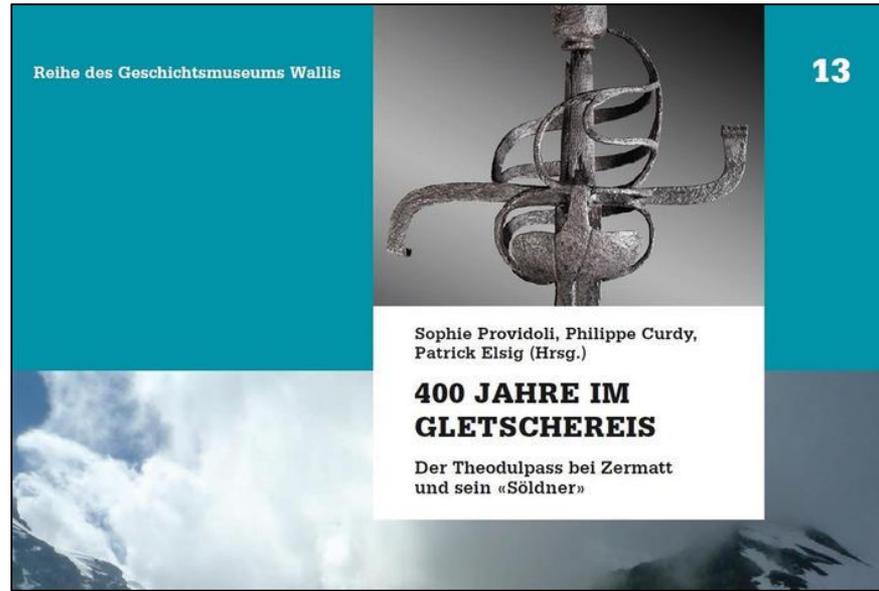
Centro Culturale Numismatico Milanese  
Milan, April 17th 2018

# The book



« NIP-Tevere » award 2017

# A multi- disciplinary project

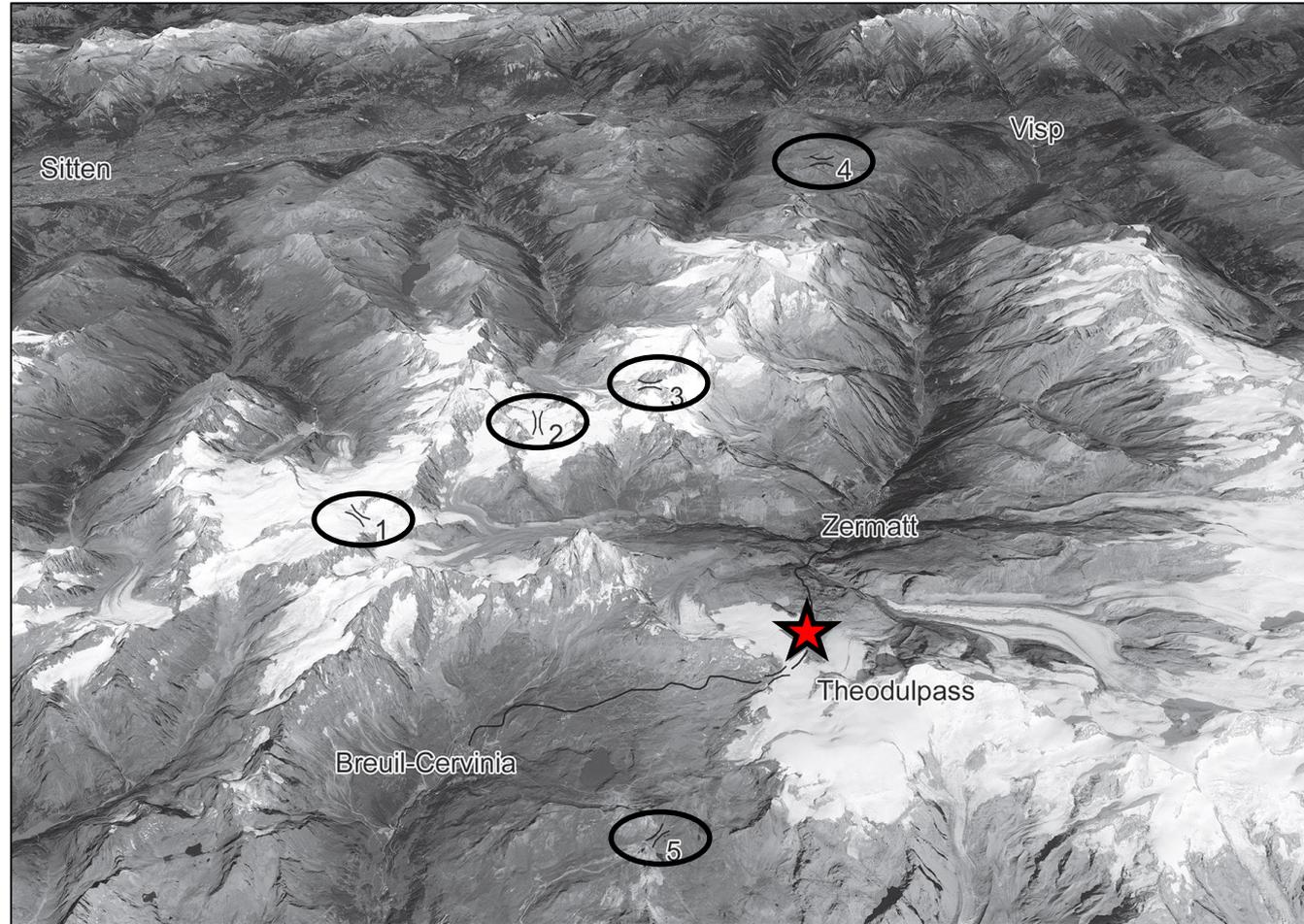


The Theodul Pass (3,301 m):  
straddling  
North and  
South



# Alpine passes linking the Po and Rhône valleys

- 1) Col d'Hérens
- 2) Col Durand
- 3) Triftjoch
- 4) Augstbordpass
- 5) Colle Superiore delle Cime Bianche



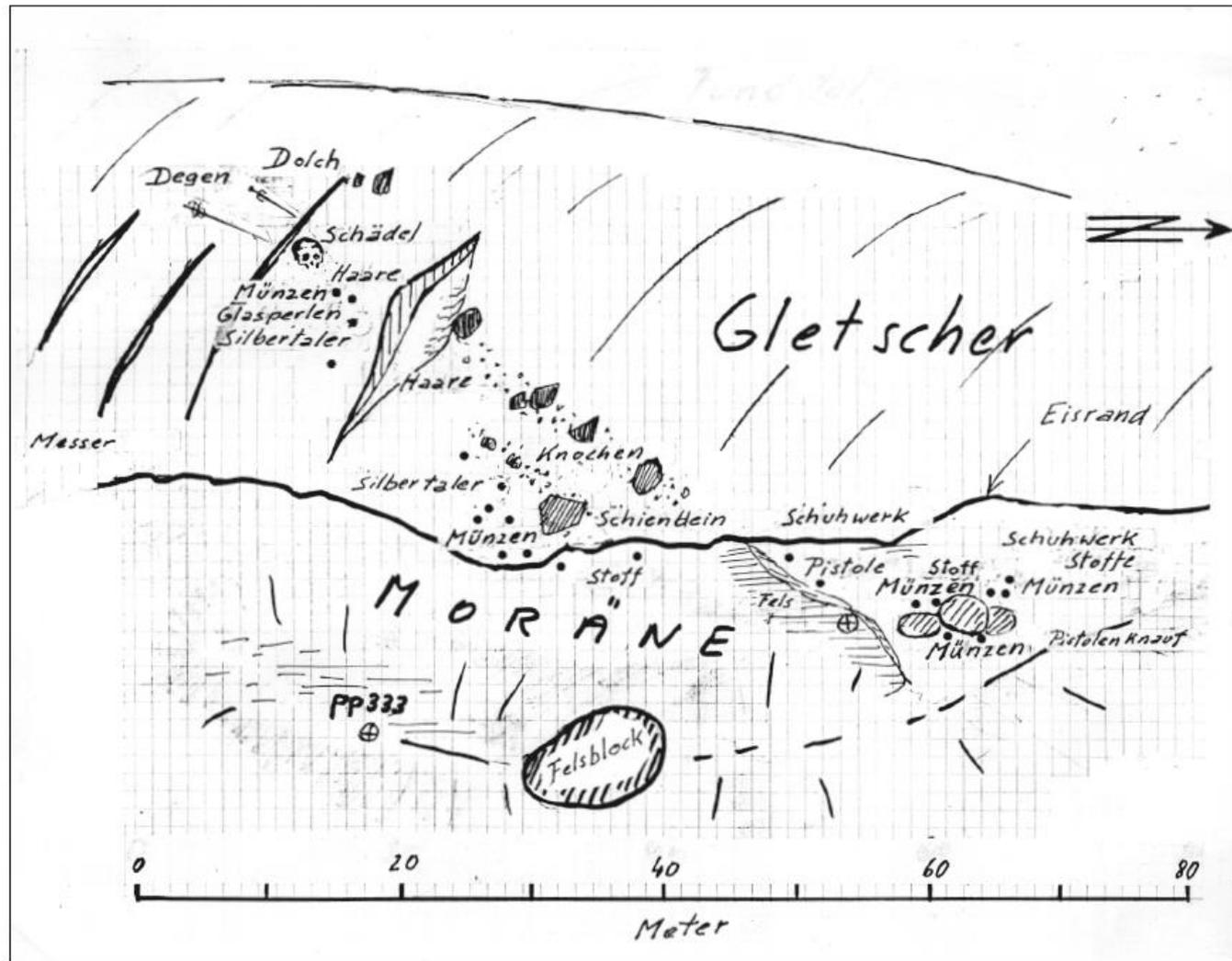


The findspot in  
a photo taken  
on September  
2<sup>nd</sup>, 2013

On the left, the Upper  
Theodul glacier; in the  
middle, the cable car  
station

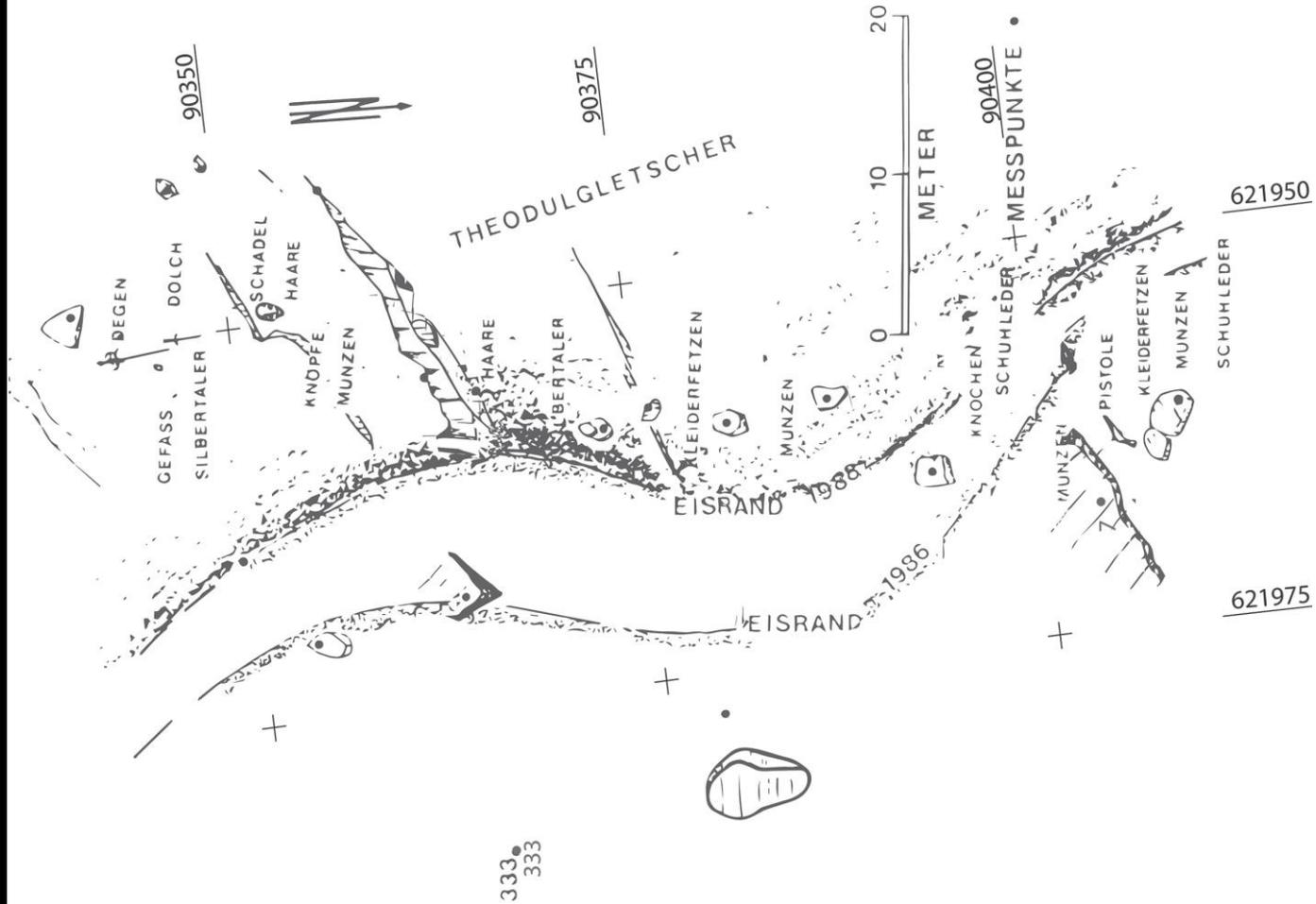


Sketch of the findspot with the objects found between 1984 and 1989



The glacier edge corresponds to the 1986 level

Map of the findings by Peter Lehner (1999)



Overview of the  
most important  
finds of the  
“mercenary”  
from the  
Theodul Pass



# Why are the coins found at the Theodul Pass so important?



A purse, not a hoard, belonging to a person travelling across the Alps



Coins found in an archaeological context supposed to be still unviolated



Coins ranging from mid. 15th century to c. 1610



Presence of clipped silver pieces of large module



No less than 10 different monetary systems, mostly uncorrelated, represented there



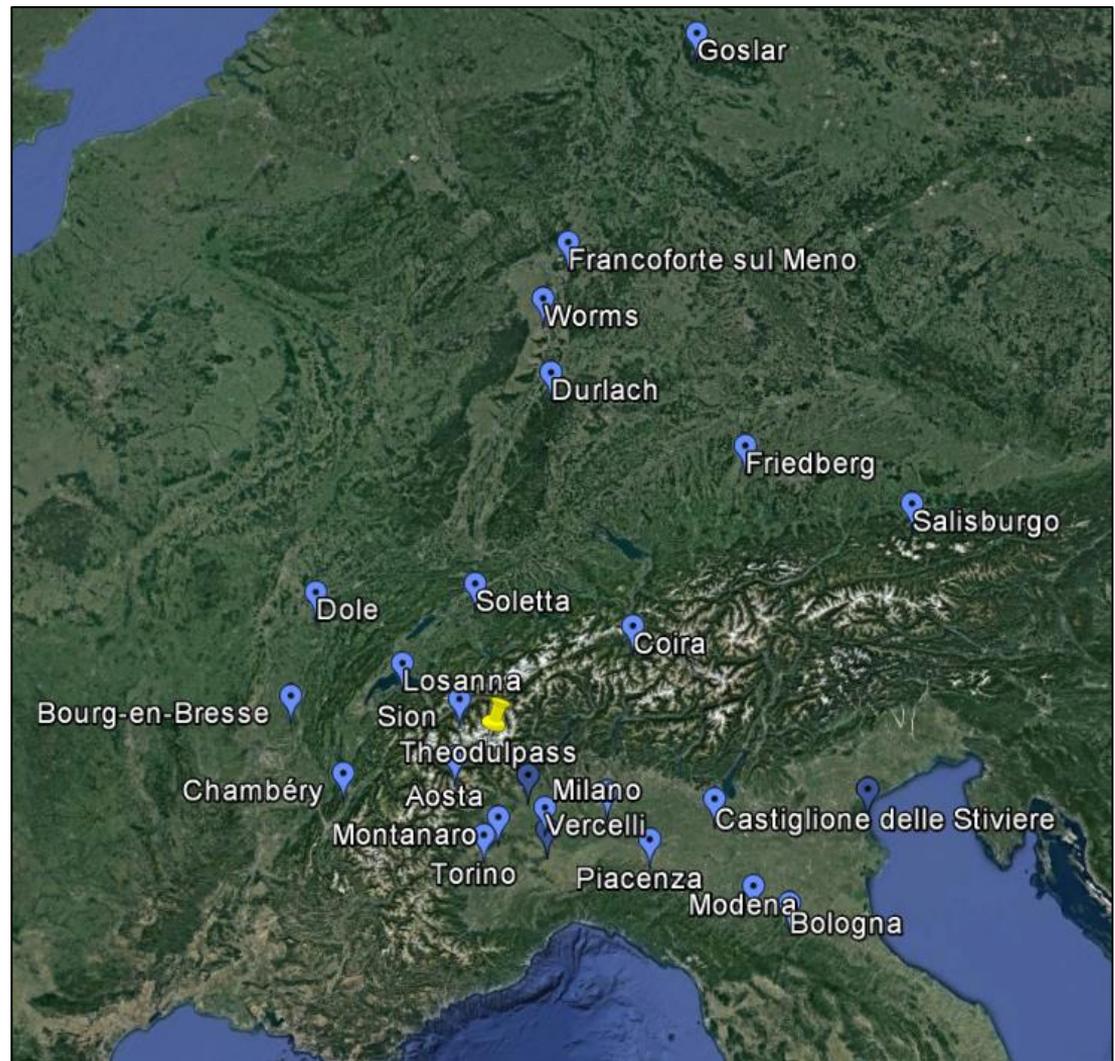
Coins presenting several iconographic elements in common

# The coins

	Münzherrschaft	Datierung	Anzahl Münzen	Kat.Nr.
GROSSSILBER	Mailand, Herzogtum	post 1577-1594	7	1-7
	Savoyen, Herzogtum	1591	1	8
	Spanische Niederlande, Brabant	1558	1	9
KLEINSILBER	Chur, Bistum	1581-1627	2	10-11
	Lausanne, Bistum	1476-1491	1	12
	Sitten, Bistum	1565-1604	7	13-19
	Solothurn, Stadt	1566	1	20
	Bologna, Signorie	1446-1506	3	21-23
	Castiglione delle Stiviere, Markgrafschaft	1580-1616	5	24-28
	Kirchenstaat	1503-1513	1	29
	Mailand, Herzogtum	ca. 1515-1593	9	30-38
	Messerano, Markgrafschaft	1571-1581	37	39-75
	Modena, Herzogtum	1505-1559	2	76-77
	Monferrato, Markgrafschaft (Mzst. Casale Monferrato)	1494-1572	2	78-79
	Monferrato, Herzogtum (Mzst. Casale Monferrato)	1579-1609	21	80-98; N1-N2
	Parma und Piacenza, Herzogtum	ca. 1584-1588	2	99-100
	Reggio, Herzogtum	ca. 1534-1540	1	101
	San Benigno di Fruttuaria, Abtei (Mzst. Montanaro)	post 1562-1581	6	102-107
	Siena, Stadt	1503	1	108
	Venedig, Republik	1486-1538 (?)	2	109-110
	Savoyen, Herzogtum	1482-1587 (?)	56	111-165; N3
	Burgund, Freigrafschaft	1578	1	166
	Baden-Durlach, Markgrafschaft	1577-1604	4	167-170
	Frankfurt, Stadt	1572	1	171
	Friedberg, Reichsburg	1591	1	172
	Goslar, Stadt	4. Viertel 16. Jh.	1	173
	Worms, Bistum	1552-1580	1	174
	Salzburg, Erzbistum	1540	1	175
	Unbestimmte Münzherrschaft	16. Jh. (?)	6	176-181
	<b>TOTAL</b>			<b>184</b>

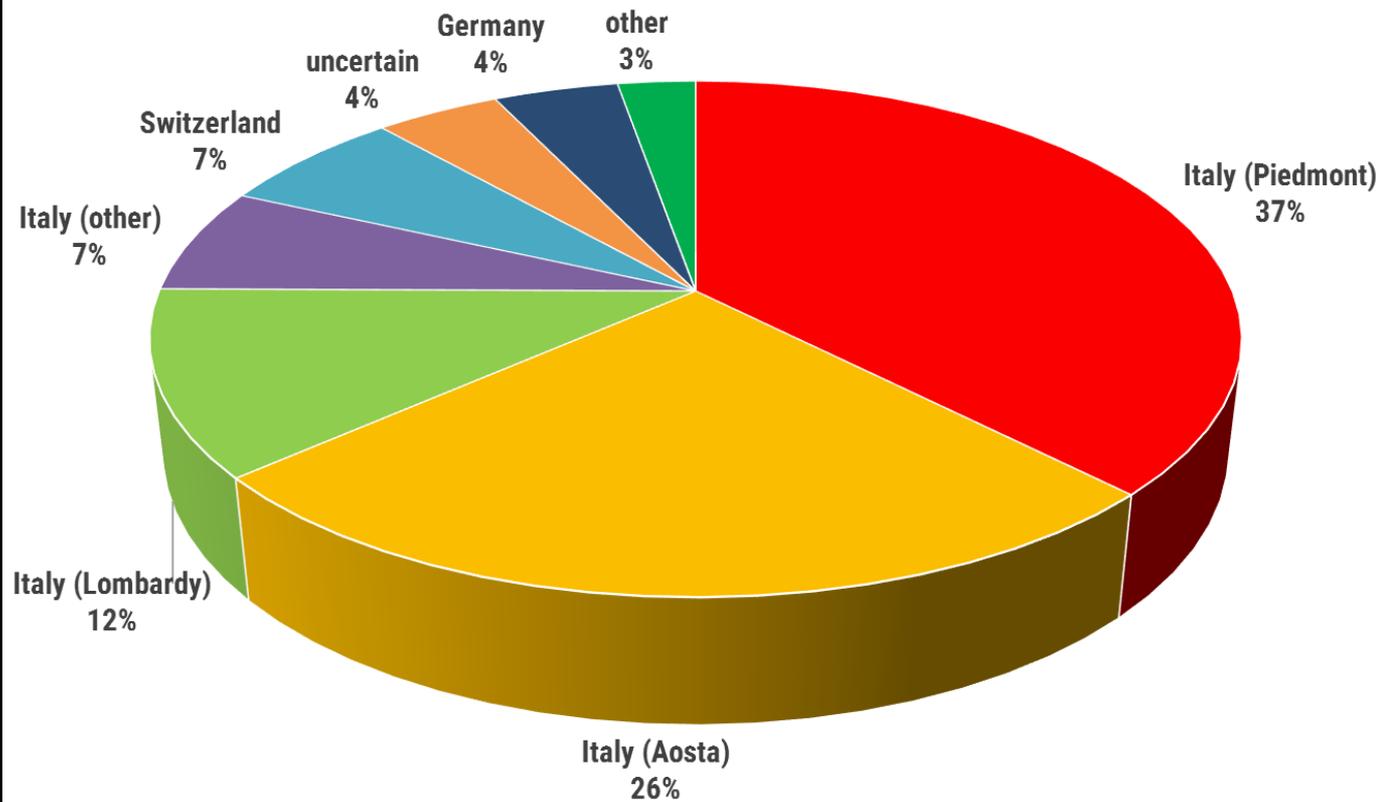
# Origin of the coins

The mints

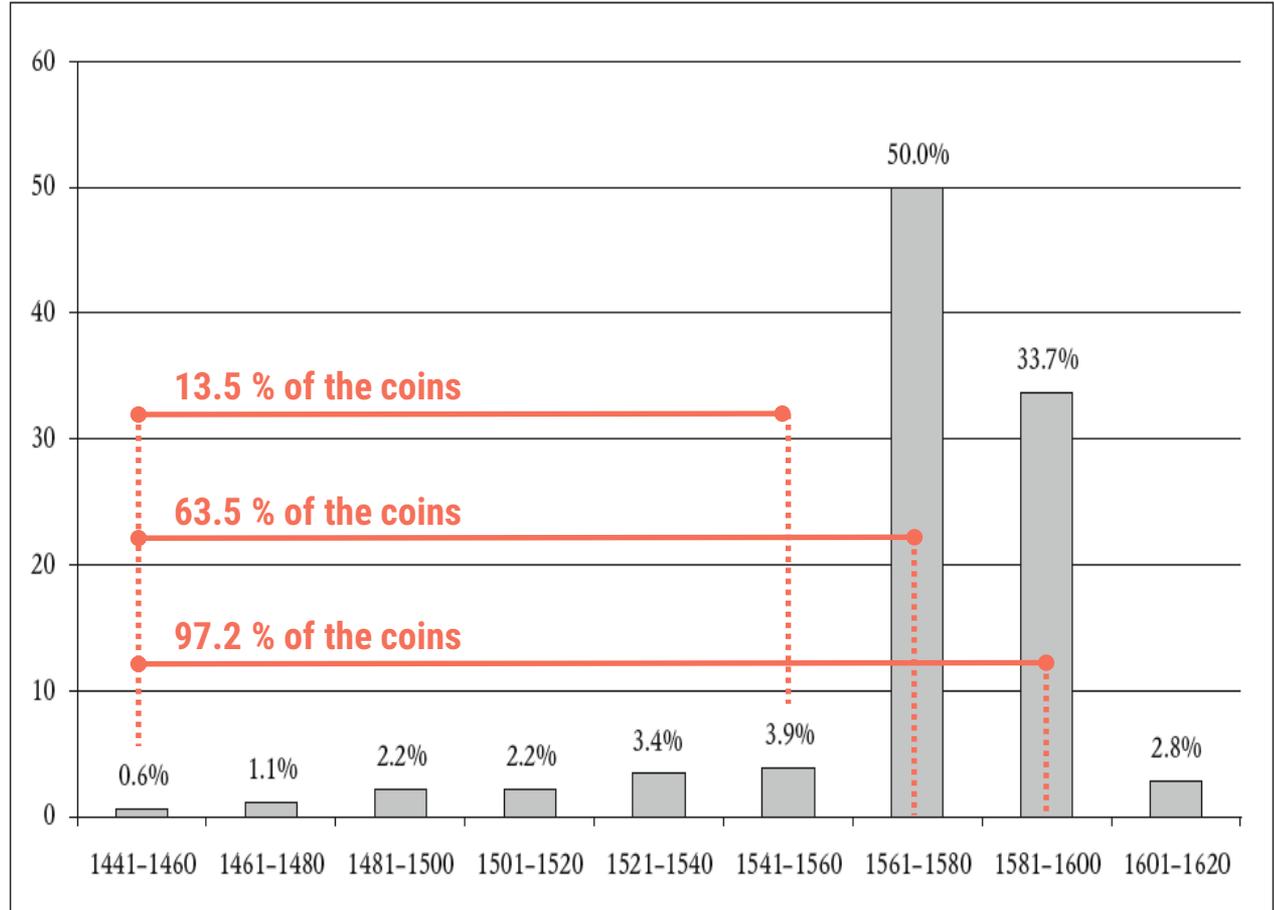


# Origin of the coins

The geographic areas  
(modern borders)



# Time distribution of the coins



# Time distribution of the coins

The problem of the  
“terminus post quem”

Last dated coin:

- Phillip II of Habsburg (1556-1598), mint of Milan, SCUDO D'ARGENTO **1594**

Coins potentially issued later:

- Bistum Johann V. Flugi von Aspermont, mint of Chur, PFENNIG **1601-1627**
- Francesco Gonzaga, mint of Castiglione delle Stiviere, TERLINA **1593-1616**
- Vincenzo I Gonzaga, mint of Casale Monferrato, QUARTO **1587-1609**
- Ernst Friedrich, mint of Durlach, SCHÜSSELPFENNIG **1577-1604**
- Bistum Hildebrand I von Riedmatten, mint of Sion, VIERER **1565-1604**
- Bistum Peter II Rascher, mint of Chur, PFENNIG **1581-1601**

A clipped  
PHILIPSTHALER



Phillip II of Habsburg (1555-1581)  
mint of Antwerp – PHILIPSTHALER 1558

A fake SCUDO  
D'ARGENTO of  
Milan



Phillip II of Habsburg (1554-1598)  
mint of Milan – SCUDO D'ARGENTO 1588 (forgery)

# The Duchy of Savoy: the predominance of the alpine mints



Types of FORTI DA 8 AL SOLDI of the Duchy of Savoy in the Theodul Pass find:  
Emmanuel Philibert (1559-1580) and Charles Emmanuel I (1580-1630)

# Types of QUARTI found at the Theodul Pass



Types of QUARTI in the Theodul Pass find.

First row: Charles Emmanuel I, duke of Savoy (1580-1630);  
second row: Guglielmo Gonzaga, duke of Montferrat (2575-2587)

# Counterfeits of the coins of Savoy from the mints of Piedmont



Besso Ferrero Fieschi (1559-1584)  
mint of Messerano – QUARTO 1581

# Counterfeits of the coins of Savoy from the mints of Piedmont



Ferdinando Ferrero (1547-1580)  
mint of Montanaro – QUARTO (*post* 1562-1580)

## TERLINE of the mint of Milan in the find of the Theodul Pass

Cat.	Autorità emittente	Nominale	Datazione proposta	Peso in grammi
30	Franz I. von Angoulême	Terlina	1515-1521	0.84
31	Francesco II. Sforza	Terlina	1521-1535	0.89
32	Karl V. von Spanien	Terlina	1535-1556	0.75
33	Karl V. von Spanien	Terlina	1535-1556	0.68
34	Karl V. von Spanien	Terlina	1535-1556	0.97
35	Philipp II. von Spanien	Terlina	ca. 1560-1593	0.90
36	Philipp II. von Spanien	Terlina	ca. 1560-1593	0.87
37	Philipp II. von Spanien	Terlina	ca. 1560-1593	0.79
38	Philipp II. von Spanien	Terlina	ca. 1560-1593	0.73

# A counterfeited TERLINA from Castiglione delle Stiviere



Phillip II of Habsburg (1554-1598)  
mint of Milan – TERLINA



Francesco Gonzaga (1593-1616)  
mint of Castiglione delle Stiviere – TERLINA



# Counterfeited LIARDS from Castiglione delle Stiviere e Casale Monferrato



Ferrante Gonzaga (1580-1586)  
mint of Castiglione delle Stiviere – LIARD

# Sion vs. Savoy: imitation or counterfeit?



Hildebrand I von Riedmatten (1565–1604)  
mint of Sion – VIERER



Charles Emmanuel I of Savoy (1580-1630)  
mint of Chambéry – QUARTO DI SOLDI

# Different mints, common iconographic elements

Coins with letters (crown / bishop's miter)



# Italian coins minted outside North-western Italy

Cat.	Stato/signoria	Autorità emittente	Zecca	Nominale	Datazione proposta
21-23	Bologna, Signorie	anonyme Prägungen der Bentivoglio	Bologna	Quattrino	1446-1506
29	Kirchenstaat	Julius II.	Viterbo	Quattrino	1503-1513
76	Modena, Herzogtum	Alfonso I. d'Este	Modena	Quattrino	1505-1534
77	Modena, Herzogtum	Ercole II. d'Este	Modena	Sesino	1534-1559
99	Parma und Piacenza, Herzogtum	Ottavio Farnese	Piacenza	Sesino	ca. 1584-1586
100	Parma und Piacenza, Herzogtum	Ottavio Farnese	Piacenza	Quattrino	ca. 1584-1586
101	Reggio, Herzogtum	Ercole II. d'Este	Reggio Emilia	Quattrino	ca. 1534-1540
108	Siena, Stadt		Siena	Quattrino	1503
109	Venedig, Republik	Agostino Barbarigo (?)	Venedig	Tornesello	1486-1501 (?)
110	Venedig, Republik	Andrea Gritti (?)	Venedig	Tornesello	1523-1539 (?)

# Italian coins minted outside North-western Italy

Mints tightly linked to  
Milan



Ottavio Farnese (1556-1586)  
mint of Piacenza  
SESINO (c. 1584-88)



Ottavio Farnese (1556-1586)  
mint of Piacenza  
QUATTRINO (c. 1584-88)

# Italian coins minted outside North-western Italy

A Venetian coin for the  
colonies: the  
TORNESELLO



Agostino Barbarigo (1486-1501) (?)  
mint of Venice – TORNESELLO

# The value of the purse

Numero	Nominale	Corso delle valute in Piemonte	Valore in moneta di Piemonte	Corso delle valute a Payerne	Valore in moneta secondo contratto Payerne
6	<i>ducatoni / scudi</i>	11 <i>fiorini</i> 6 <i>grossi</i>	69 <i>fiorini</i>	6 <i>florins</i> 4 <i>gros</i> 6 <i>deniers</i> (= 25 1/2 <i>batzen</i> )	38 <i>florins</i> 3 <i>gros</i> (= 153 <i>batzen</i> )
2	<i>ducatoni</i> di peso ridotto	ca. 11 <i>fiorini</i>	22 <i>fiorini</i>	ca. 6 <i>florins</i> (= 24 <i>batzen</i> )	ca. 12 <i>florins</i> (= 48 <i>batzen</i> )
1	<i>philippstaler</i> di peso ridotto	ca. 11 <i>fiorini</i>	11 <i>fiorini</i>	6 <i>florins</i> (= 24 <i>batzen</i> )	6 <i>florins</i> (= 24 <i>batzen</i> )
175	monete in mistura	-	ca. 3-4 <i>fiorini</i>	-	ca. 1-2 <i>florins</i> (= 6-7 <i>batzen</i> )
<b>TOTALE</b>			ca. 106 <i>fiorini</i>		ca. 60 <i>florins</i> (= 240 <i>batzen</i> )

“

*The find of the Theodul Pass is the evidence of a monetary crisis which affected the North-western Italy from the 1580s/90s to the early 1610s and had its peak at the end of the 1600s, when the coins of this find were probably dispersed*

Northern Italy  
during the  
Renaissance  
(c. 1494)



North-western  
Italy after the  
treaty of  
Cateau-  
Cambrésis  
(April 3, 1559)





From the  
GROSSONE to the  
silver QUARTO



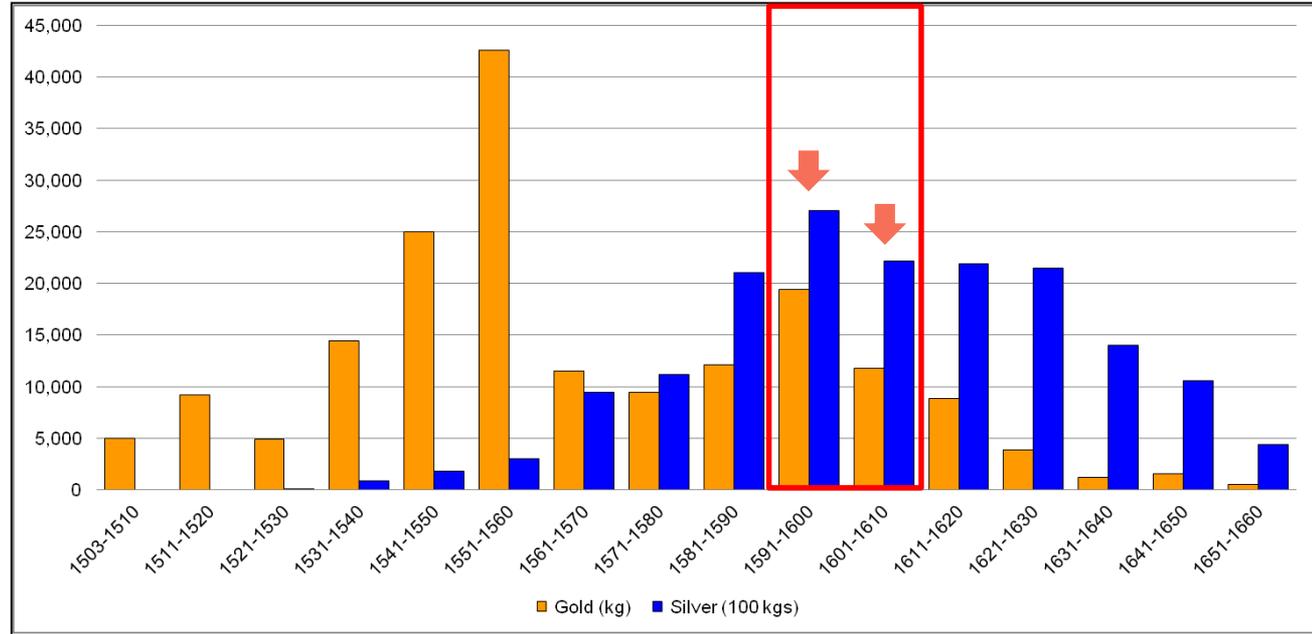
Galeazzo Maria Sforza (1466-1476)  
mint of Milan  
GROSSONE DA 20 SOLDI (post 1474)



Charles V of Habsburg (1535-1556)  
mint of Milan  
QUARTO DI SCUDO D'ARGENTO (1551?)

# Gold money vs. silver money

The arrival of bullion  
from the Americas



# Gold money vs. silver money

The Cerro Rico of  
Potosí: the richest  
silver mine of the  
world



# Gold money vs. silver money

A gold ingot from the 400-year-old Spanish galleon "Nuestra Senora de Atocha" wreckage



# Gold money vs. silver money

A silver ingot from the 400-year-old Spanish galleon "Nuestra Senora de Atocha" wreckage



# Which coins from the payments?

(Casale Monferrato, 1562 October 20)

*“Item che apparendo et constando per li instrumenti o altre  
dispositione di certo corpo di monette **como seriano  
ducato o scuti, testoni et altre simile monette quale  
hanno certa forma**, che li pagamenti s’habbino a fare  
secundo le conventioni et dispositione, non havendo  
rispetto ad alcuno augumento o diminutione. Et se pur di  
ragione li fosse permesso pagar in monette debbiano  
**pagar in tante monete di quella che al tempo dil  
pagamento correrano et per quello correrano  
secundo il nostro ordine**, di modo che se monette  
faciano o scuto o ducato overo altro corpo di quale parlano  
et disponeno esse conventioni et dispositione secundo il  
presente ordine,,*

(Casale Monferrato, 1539 June 6)

# The appreciation of gold coins

1 silver GROSSONE/TESTONE  
= ¼ DUCATO D'ORO

1 LIRA of Milan = 1 ½ LIRA of  
Montferrat

<i>Doppi ducati</i>	ll. 17 ss. 8
<b><i>Ducati d'oro larghi</i></b>	<b>ll. 8 ss. 14</b>
<i>Ducati rolini</i>	ll. 8 ss. 8
<i>Scuti dal sole di Francia, Gienua,</i> <i>papali vechii et di Milano</i>	ll. 8 ss. 8
<i>Scuti del re sive corona di Francia</i>	ll. 8 ss. 6
<i>Scuti d'oro</i>	ll. 8 ss. 5
<i>Scuti de Italia</i>	ll. 8 ss. 5
<b><i>Testoni sive quarti di ducato</i></b>	<b>ll. 2 ss. 3 dd. 6</b>
<b><i>Testoni ducali di Milano,</i></b> <b><i>Mantua, Portugal,</i></b> <b><i>Gienua, Ferrara</i></b>	<b>ll. 2 ss. 3 dd. 6</b>
<i>Testoni fatti novamente in Milano</i>	ll. 2 ss. 8

4:1

(Casale Monferrato, 1542 January 17)

# The appreciation of gold coins

1 silver GROSSONE/TESTONE  
= ¼ SCUDO D'ORO

<i>Doppi ducati d'oro larghi</i>	ll. 24 ss. 4
<i>Ducati d'oro larghi</i>	ll. 12 ss. 2
<i>Ducati roverini</i>	ll. 11 ss. 6
<b><i>Scuti dal sole di Francia,</i></b>	
<b><i>scuti vecchi di Genoa et Milano</i></b>	<b>ll. 11 ss. 4</b>
<i>Corone di Francia</i>	ll. 11 ss. 2
<i>Scuti de Italia</i>	ll. 11
<i>Scuti de l'aquila di Monferrato</i>	
<i>et Salucio</i>	ll. 8 ss. 10
<b><i>Testoni di Milano, Genoa,</i></b>	
<b><i>Mantova et Ferrara</i></b>	<b>ll. 2 ss. 16</b>
<i>Testoni di Portogallo</i>	ll. 2 ss. 14
<i>Testoni di Francia</i>	ll. 2 ss. 12

4:1

1 LIRA of Milan = 1 ½ LIRA of  
Montferrat

(Casale Monferrato, 1562 October 20)

## The appreciation of gold coins

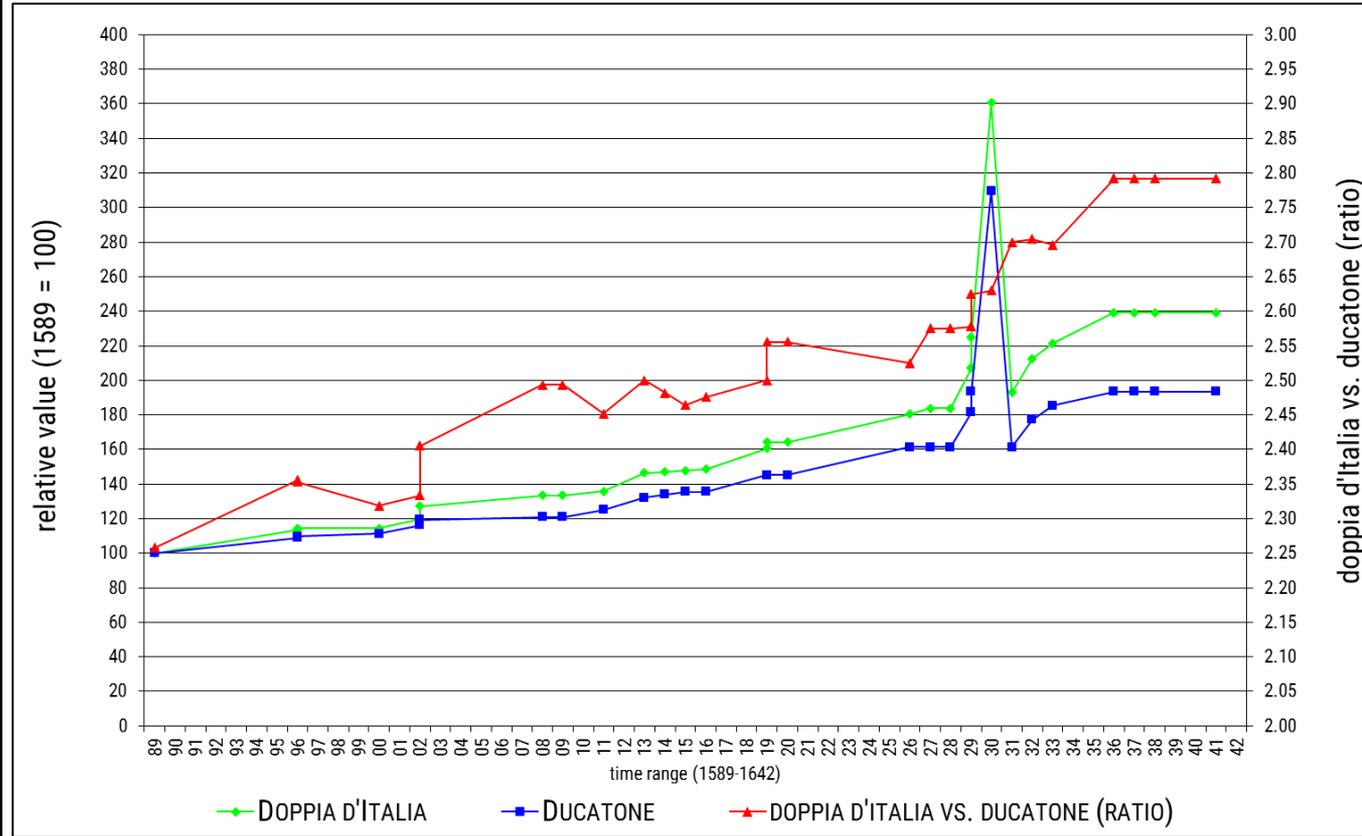
No official link between  
gold and silver SCUDI, but  
¼ SCUDO D'ARGENTO  
= 1 TESTONE/GROSSONE

<i>Ducati d'oro di Spagna, Milano, Venetia, Fiorenza, Genoa, Portugallo, ungari e boemi</i>	<i>ll. 9 ss. 18</i>
<i>Ducati di Mantoa, Ferrara, Bologna et papali</i>	<i>ll. 9 ss. 15</i>
<i>Ducati di Portugallo con la grande croce</i>	<i>ll. 9 ss. 4</i>
<i>Ducati roverini</i>	<i>ll. 9 ss. 5</i>
<i>Scudi d'oro nostri et d'Italia d'ogni sorte</i>	<i>ll. 9</i>
<i>Scudi di Franza del sole</i>	<i>ll. 9 ss. 4</i>
<i>Scudi di Genoa vecchii</i>	<i>ll. 9 ss. 2</i>
<b><i>Mezzi scudi d'argento di Milano</i></b>	<b><i>ll. 4 ss. 7</i></b>
<b><i>Quarti de scudi d'argento</i></b>	<b><i>ll. 2 ss. 3 dd. 6</i></b>
<b><i>Testoni di Milano, Franza, Genoa e Portugallo</i></b>	<b><i>ll. 2 ss. 3 dd. 6</i></b>
<b><i>Testoni di testa nuda fatti tanto in Savoia come in Piemonte</i></b>	<b><i>ll. 2 ss. 3 dd. 6</i></b>

1 LIRA of Milan = 1 ½ LIRA of  
Montferrat

# The appreciation of gold coins

The example of the Duchy of Mantua



# Monetary reforms in the 1560s-70s: (still) chasing a fixed ratio between gold and silver

The *grida* of the Duchy of Montferrat (1562 October 20)



The silver  
coins of large  
module in  
Northern Italy

From the silver SCUDO  
to the DUCATONE

(1551 October 16)

*“Scuti, mezzi scuti e quarti scuti si sono fatti con gli  
argenti di Sua Maestà venuti dall’Indie per gli eserciti,,*



Phillip II of Habsburg (1556-1598)  
mint of Milan – SCUDO D’ARGENTO (late 1570s?)

The silver  
coins of large  
module in  
Northern Italy

The DUCATO DA 124  
SOLDI of Venice



Girolamo Priuli (1559-1567)  
mint of Venice – DUCATO DA 124 SOLDI (post 1562)

# The silver coins of large module in Northern Italy

The Milanese **DUCATONE** as a standard: the turning point of the 1580s

- **1551**: Milan, Charles V of Habsburg → **silver SCUDO** (37.4 gr; 909.7 ‰ Ag) (\*)
- **1562**: Venice → **DUCATO DA 124 SOLDI** (32.9 gr; 947.9 ‰ Ag)
- **1567**: Genua → **silver SCUDO** (37.3 gr; 958.3 ‰ Ag)
- **1568**: Florence → **silver PIASTRA** (32.5 gr; 958.3 ‰ Ag)
- **1574**: Piacenza, Ottavio Farnese → **silver SCUDO** (35.5 gr; 951.4 ‰ Ag)
- **1575-87**: Mantua, Guglielmo Gonzaga → **SCUDO DA 120 SOLDI** (31.5 gr.; unknown, perhaps 958.3 ‰ Ag)
- **1583**: Piacenza, Ottavio Farnese → **DUCATONE** (32.1 gr; 958.3 ‰ Ag, but corrections according to the changes in the standard applied by the mint of Milan)
- **1587**: Savoy, Charles Emmanuel I → **DUCATONE** (same as Milan)
- **1588**: Casale Monferrato → **DUCATONE** (same as Milan)
- **1589**: Mantua → **DUCATONE** (unknown, perhaps same as Milan)

(\*) silver **QUARTO DI SCUDO** already documented in 1549

# The silver coins of large module in Northern Italy

The (official) evolution of weight and finess in Milan

year	finess (pre-decimal)	finess (decimal)	pieces per marc	weight	Value
1551	10.22 den.	909.7 ‰	$6 \frac{1}{4} \frac{1}{8}$	37.413 gr.	5.12 liras
1557	7.22.22 o. per marc	994.4 ‰	$7 \frac{1}{2}$	31.333 gr.	5.12 liras
1577 (*)	11.12 den.	958.3 ‰	$7 \frac{21}{55} \frac{1}{6}$	31.822 gr.	5.12 liras
			$7 \frac{8}{55} \frac{1}{3}$	32.860 gr.	
1579	11.12 den.	958.3 ‰	$7 \frac{16}{55} \frac{1}{12}$	32.225 gr.	5.12 liras
1581	11.12 den.	958.3 ‰	$7 \frac{1}{28} \frac{2}{3}$	33.288 gr.	5.12 liras
			$7 \frac{1}{4} \frac{1}{28} \frac{2}{3}$	32.374 gr.	
1583	11.12 den.	958.3 ‰	$7 \frac{1}{3} \frac{2}{28} \frac{1}{24}$	31.941 gr.	5.13 liras (November 11th)
1587	11.12 den.	958.3 ‰	$7 \frac{1}{3} \frac{2}{28} \frac{1}{24}$	31.941 gr.	5.15 liras (October 15th)
1608	11.12 den.	958.3 ‰	7 + 7.6 den. <i>al compimento del marco</i>	32.303 gr.	5.15 liras (October 21st)

(\*) *remedium in lege*:  $1 \frac{1}{4}$  gr. per ounce; *remedium in pondere*: 1.12 den. per marc

The first  
evidences of  
the name  
DUCATONE

The Duchy of Mantua

*(Casale Monferrato or Mantua, 1586 January 8 or 10)*

*“Giovanni Francesco Lu [...] si obligarà di battere in dette  
cecche [of Mantua and Casale Monferrato] metà a fino et  
metà a lega [...], et la moneta a lega s’intende essere sesini,  
soldi et barbarine, et quella a fino iustine, **mezzi  
ducatoni et ducatonii,***



Vincenzo I Gonzaga (1587-1612)  
mint of Mantua – DUCATONE 1589

The first  
evidences of  
the name  
DUCATONE

The Duchy of Milan

(Milan, 1587 January 14)

“*ducatoni di Milano, di Ferrara, Mantova, Parma,*”



Phillip III of Habsburg (1598-1621)  
mint of Milan – DUCATONE 1608 (but potentially a later issue)

The first  
evidences of  
the name  
DUCATONE

The Duchy of Savoy

(Turin, 1587 June 28)

*“poiché havevano publicato di far una moneta che valesse  
tre fiorini, il qual prezzo non poteva scontrare a modo  
alcuno con nostro, et hora oltre il **ducatone et mezzo  
ducatone** dell’istesso peso et bontà di quello di essa città  
[of Milan],,*



Charles Emmanuel I of Savoy (1580-1630)  
mint of Turin – DUCATONE 1590

The first  
evidences of  
the name  
DUCATONE

The Duchy of  
Montferrat

(Casale Monferrato, 1587 October 15)

*“che habiamo autorità di **spendere le monete che si  
baterano a la rata del ducato di Milano per libre  
cinque soldi quatordecì come valeno al presente in detto  
loco di Milano,**”*



Vincenzo I Gonzaga (1587-1612)  
mint of Casale Monferrato – DUCATONE 1588

The DUCATONE:  
a standard for  
Northern Italy,  
and beyond

(Ferrara, 1597 March 3-4)

*“ducato di Milano, di Ferrara, Mantova, Parma, Savoia,  
e altri di tal peso e lega lire 4.2; **ducato di Venezia, e  
le sette lire veneziane a sua proportione lire 4.2;**  
ducato fiorentino lire 4.3,,*



Niccolò da Ponte (1578-1585)

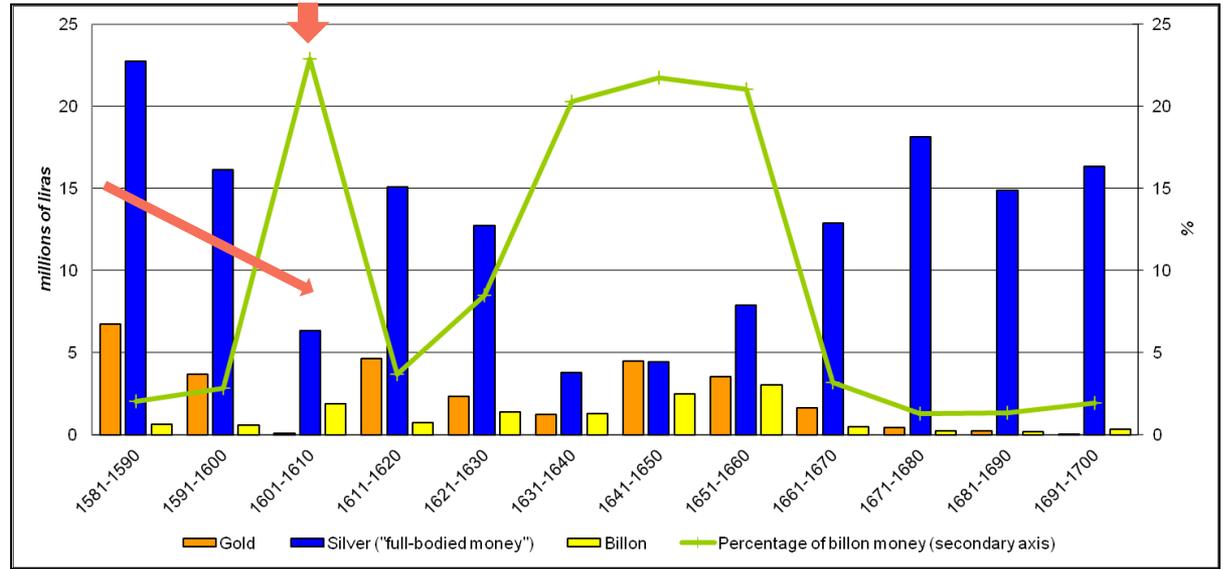
mint of Venice – SCUDO DELLA CROCE DA 140 SOLDI (1583/4)

# The economic and political crisis of the 1590s-1600s

- Several **international events** influencing the movements of bullion across Europe:
  - **War in Flanders**
  - **Increasing commercial supremacy of the United Provinces in Northern Europe**
  - **Spanish royal bankruptcy in 1596-97 and in 1607**
  - **Exports of silver from Spain forbidden in December 1596 and March 1597**
- Major **consequences**:
  - **More Spanish silver REALS driven to North, money shortage in the South**
  - **Increase of the course of the coins**
  - **Diffusion of over-rated coins** (i.e., coins whose value exceeded the official change)
- **A re-balancing in the monetary flows** tends to emerge only after the sign of the **Twelve Years' Truce (1609)**

# The shortage of money in the 1590s-1600s

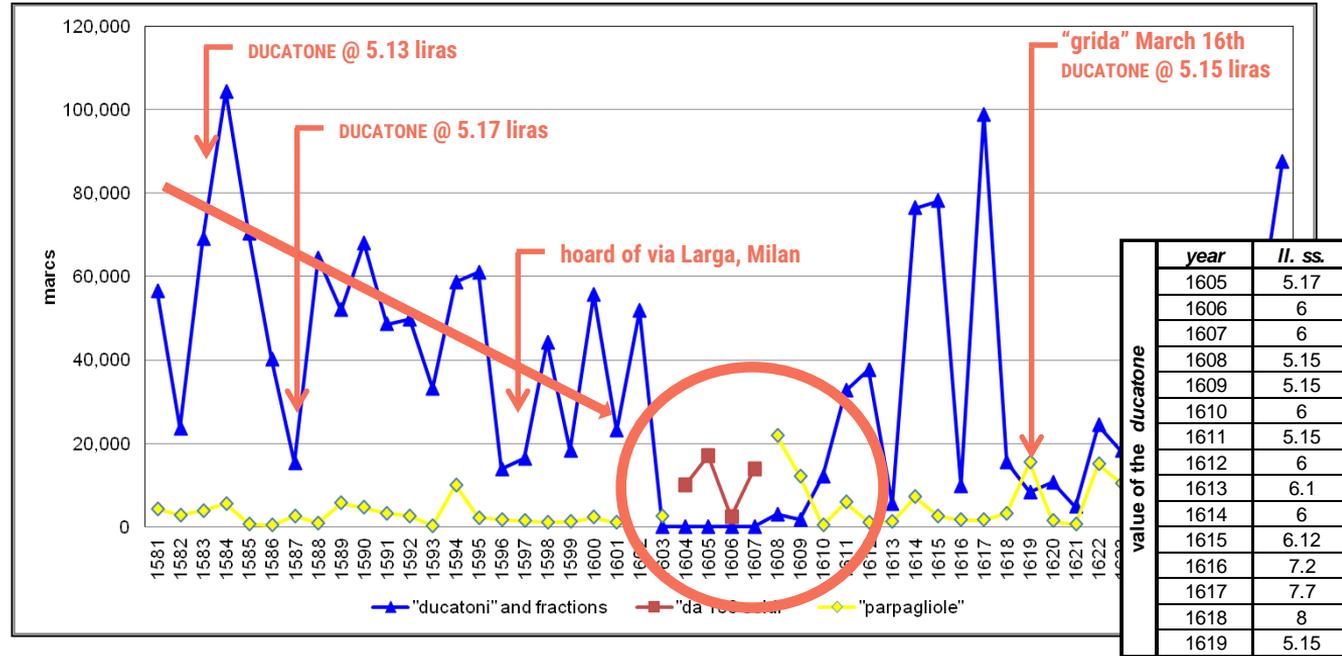
The fall of the production in the mint of Milan



period	million of liras issued	percentage of		
		Gold	Silver	Billon
1581-1590	30.09	22.4	75.5	2.1
1591-1600	20.42	18.2	79.0	2.8
1601-1610	8.34	0.9	76.1	22.9
1611-1620	20.51	22.7	73.6	3.7
1621-1630	16.50	14.2	77.3	8.5
1631-1640	6.37	19.9	59.8	20.3
1641-1650	11.43	39.2	39.1	21.7
1651-1660	14.53	24.5	54.4	21.1
1661-1670	15.00	10.8	86.0	3.2
1671-1680	18.82	2.3	96.5	1.3
1681-1690	15.35	1.6	97.1	1.3
1691-1700	16.70	0.2	97.9	1.9

# The shortage of money in the 1590s-1600s

The decline of the DUCATONE and the birth of the PEZZO DA 100 SOLDI



# New silver currencies

The PEZZO DA 100 SOLDI  
of Milan

(Milan, 1604 April 13)

*“Per ordine dell’illustrissimo Magistrato, bontà denari 11.9,  
marco tenga d’argento fino onze 7.14, rimedio in peso  
denari  $1\frac{1}{2}$  per marco, in bontà grani 1 per  $\frac{1}{4}$  d’onza,  
siano a n.  $8\frac{40}{187}$  per marco, cioè che detti denari pesino  
un marco meno 5 denari, che sono onze 7.19,,*



Phillip III of Habsburg (1598-1621)  
mint of Milan – DA 100 SOLDI 1605

# New silver currencies

## SCUDI and DUCATI of Venice

### Niccolò da Ponte (1578-1585)

**ducato da 124 soldi**

scudo da 160 soldi

scudo della croce da 140 soldi

32.8 gr.

(until 1578)

36.4 gr.

(from 1578)

31.8 gr.

(from 1578)

### Pasquale Cicogna (1585-1595)

scudo da 160 soldi

scudo della croce da 140 soldi

**ducato da 124 soldi**

36.4 gr.

31.8 gr.

28.1 gr.

(from 1587-88)

### Marino Grimani (1595-1605)

scudo da 160 soldi

scudo da 140 soldi

**ducato da 124 soldi**

ducato col Redentore

ducato mozzo da 120 soldi

36.4 gr.

(until 1595? – only fractions after)

31.8 gr.

28.1 gr.

27.3 gr.

(from 1601)

26.2 gr.

(from 1601)

# New silver currencies

Alternative use of  
coins

(Casale Monferrato, 1608 October 7)

***“lasciando li denari da otto fiorini [...], ancorché a questa piazza si spendano a fiorini nove per caduna pezza senza difficoltà, che danno grossi dodeci oltre il consueto, causata tal crescimonia per lo valore c’hora ha il ducato et altri argenti,,***



Vincenzo I Gonzaga (1587-1612)  
mint of Casale Monferrato – THALER used as PEZZO DA 8 FIORINI

“

- *Shortage of “fresh” money, especially of small change, drove people to re-use old coins (especially if showing familiar types) and not pay too much attention to the issuing authorities*
- *Gold and silver coins were overrated, and could not be used as in the previous decades, being replaced by new (lighter) currencies*

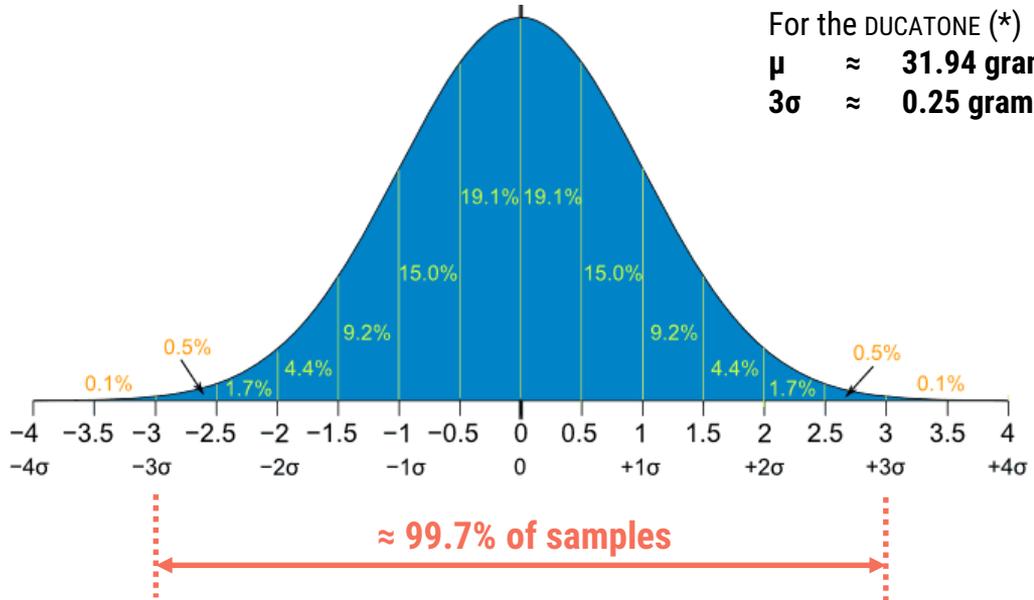
# A statistical approach to the study of the clipped DUCATONI

## The Gaussian distribution

$$N(\mu, \sigma) \rightarrow f(x) = \frac{1}{\sqrt{2\pi} \cdot \sigma} \cdot e^{-\left(\frac{x-\mu}{\sigma}\right)^2}$$

$\mu$   $\approx$  theoretical weight  
 $3\sigma$   $\approx$  *remedium in pondere*

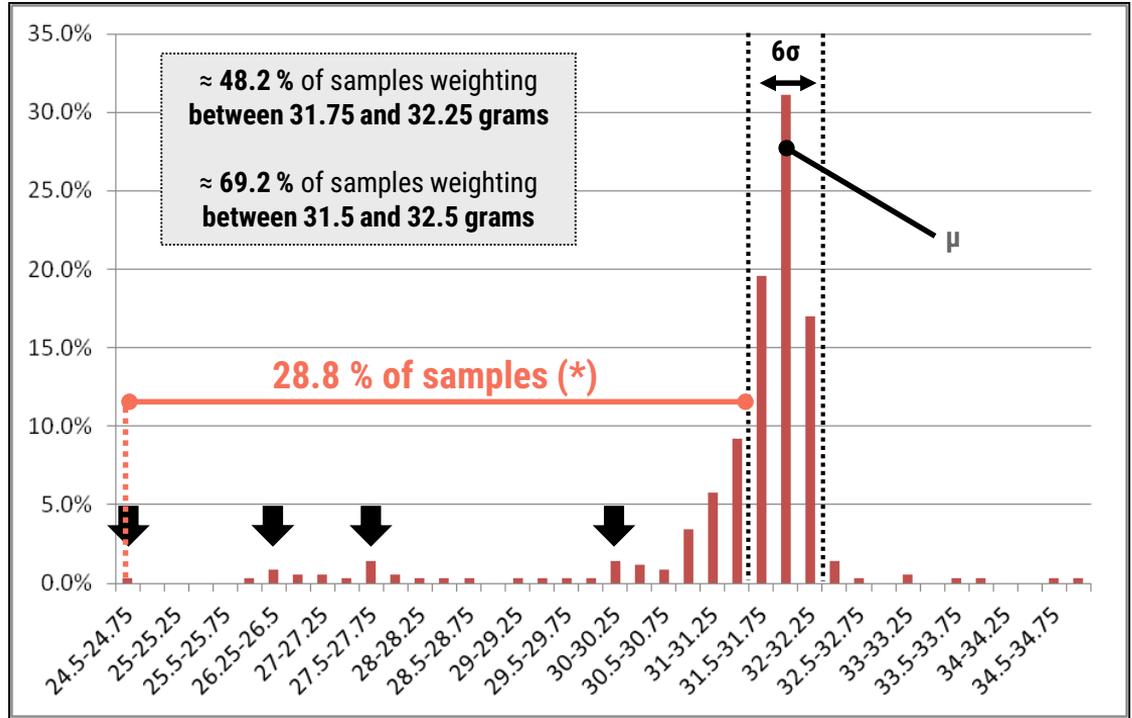
For the DUCATONE (\*)  
 $\mu$   $\approx$  **31.94 grams**  
 $3\sigma$   $\approx$  **0.25 grams**



(\*) impacts of consumption and errors in measurement can be modelled as two further independent Gaussian variables

# A statistical approach to the study of the clipped DUCATONI

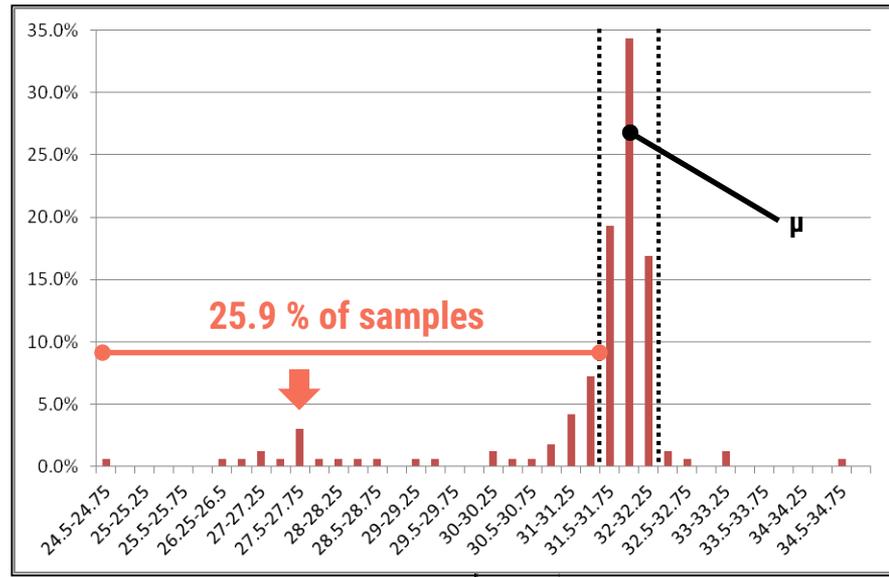
The evidence of the known coins



(\*) analysis conducted on 1,200+ DUCATONI from Northern Italy

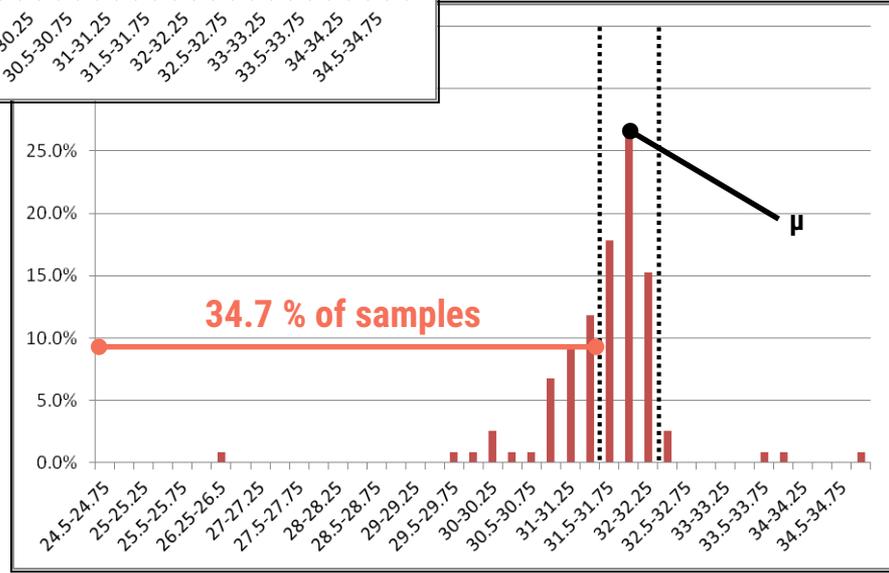
# A statistical approach to the study of the clipped DUCATONI

The evidence of the known coins



← DUCATONI issued before 1600

DUCATONI issued after 1608, or not dated →



# Coin finds with clipped DUCATONI

**Margno** (Como, Italy) 1928  
(*t.p.q.*: 1599)

- Milan, Philip II of Habsburg (1556-1598), 1 DUCATONE 1579: **29.77** gr.
- Venice, doge Nicolò da Ponte (1578-1585): 4 DA 80 SOLDI: **16.22**; **15.96**; **15.85**; **15.69**; **15.55** gr.
- Other coins: 1 half DUCATONE from Milan; 4 DUCATONI from Milan (3) and Piacenza (1); 3 DA 80 SOLDI from Venice. All showing the expected weight

**Bourg-St-Pierre** (Valais, Switzerland) 1972 (*t.p.q.*: 1599)

- Milan, Philip II of Habsburg (1556-1598): 2 DUCATONI 1582: **27.90**; **30.75** gr.
- Milan, Philip II of Habsburg (1556-1598): 2 DUCATONI 1588: **30.16**; **26.63** gr.
- Other coins: 13 DUCATONI from Casale Monferrato (1), Milan (11), Piacenza (1); 328 billon coins, mainly from Northern Switzerland. All showing the expected weight

# Coin finds with clipped DUCATONI

**Wädenswil** (Zurich, Switzerland)  
1918 (*t.p.q.*: 1632)

- Milan, Phillip II of Habsburg (1556-1598): 1 DUCATONE 1594: **28.17** gr.
- Venice, doge Francesco Erizzo (1631-1646): 1 DA 140 SOLDI: **29.05** gr.
- Other coins: 58 DUCATONI from Milan (54: 9 of Phillip II, 14 of Phillip III; 31 of Phillip IV), Tassarolo (1), Turin (2), Urbino (1); 34 DA 140 SOLDI from Venice; 1 Philippstaler from Nijmegen; 1 Reichstaler from Goslar; 8 unknown. All showing the expected weight

**Casalmaggiore, loc. Vicomoscano**  
(Cremona, Italy) 1929 (*t.p.q.*: 1640)

- Ferrara, pope Urbano VIII (1623-1644): 1 DUCATONE 1624: **28.99** gr.
- Parma, Odoardo Farnese (1622-1646): 1 DUCATONE 1630: **27.36** gr.
- Venice, doge Nicolò da Ponte (1578-1585): 1 DA 140 SOLDI: **27.46** gr.
- Other coins: 25 DUCATONI from Bardi, Casale Monferrato, Ferrara, Mantua, Milan, Modena, Parma, Tassarolo, Turin; 8 DA 140 SOLDI (SCUDI DELLA CROCE) and 4 DA 80 SOLDI (MEZZI SCUDI DELLA CROCE) from Venice. All showing the expected weight

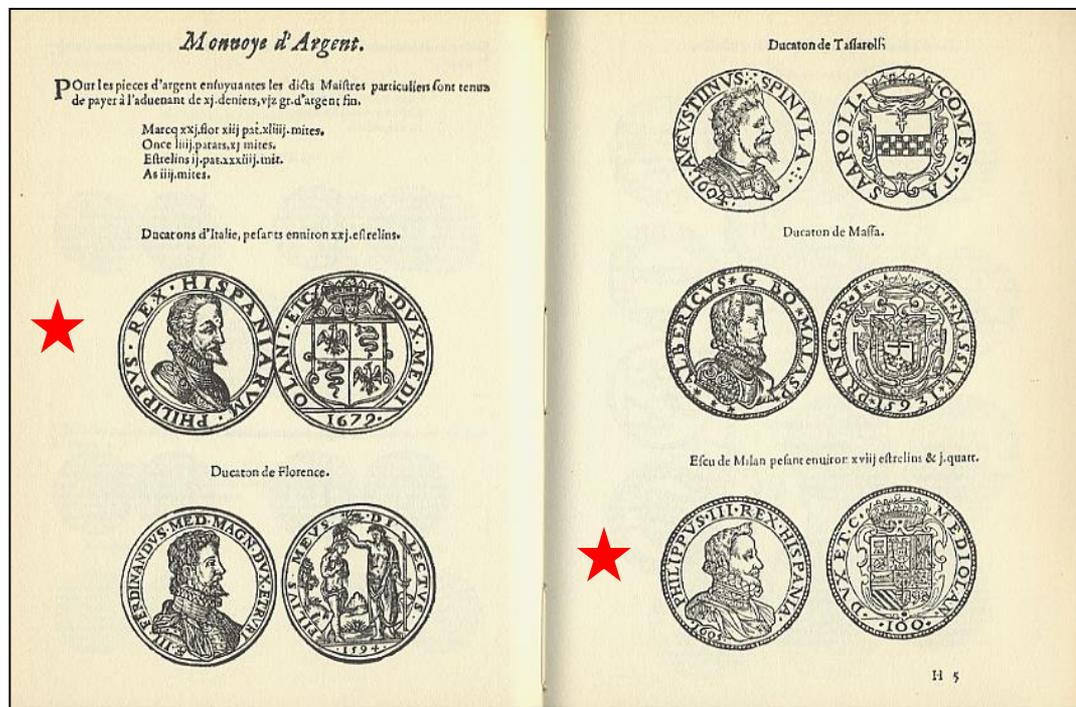
# Coin finds with non-clipped DUCATONI

**Ronago** (Como, Italy) 1898  
(*t.p.q.*: 1611)

- Venice, doge Nicolò da Ponte (1578-1585): 1 DA 80 SOLDI: **16.51** gr.
- Other coins: 1 DOPPIA D'ORO from Genua; 6 DUCATONI and 1 half DUCATONE from Milan. All showing the expected weight

# Coin clipping as a search for a new standard

Equivalence in terms  
of finess between the  
DUCATONE and the  
PEZZO DA 100 SOLDI



**Carte ou Liste contenant la declaration du pris & valeur [...], Anvers 1627**

# Coin clipping as a search for a new standard

The price of the  
currencies in the  
Duchy of Montferrat

value in grossi (groats) of Montferrat	date	CROSAZZO	DUCATONE	CROSONE	DA 100 SOLDI	TALLERO	SCUDO DI ZECCA
	1595 June 8	-	140	112	-	-	-
	1603 June 26	-	140	112	-	-	-
	1608 August 11	-	150	120	138	-	-
	1611 October 1	189	156	126	138	123	-
	1612 May 21	189	156	126	138	120	-
	1613 January 12	189	156	126	138	120	-
	1615 November 8	195	162	129	-	126	-
	1620 February 8	240	204	168	180	-	126

expected weight (in grams) for an equivalent clipped DUCATONE	date	CROSAZZO	DUCATONE	CROSONE	DA 100 SOLDI	TALLERO	SCUDO DI ZECCA
	1595 June 8	-	32.0	25.6	-	-	-
	1603 June 26	-	32.0	25.6	-	-	-
	1608 August 11	-	32.0	25.6	29.4	-	-
	1611 October 1	38.8	32.0	25.8	28.3	25.2	-
	1612 May 21	38.8	32.0	25.8	28.3	24.6	-
	1613 January 12	38.8	32.0	25.8	28.3	24.6	-
	1615 November 8	38.5	32.0	25.5	-	24.9	-
	1620 February 8	37.6	32.0	26.4	28.2	-	19.8

Coin clipping in  
England: the  
'Toenail Hoard,  
(c. 1645)

500 silver clippings in the  
Forest of Dean  
(Gloucestershire)



# Coin clipping: a wrap up

- **Coin clipping done with the precise intention to reduce the weight of the coin to a new, lighter standard**
  - The large majority of the clipped DUCATONI belongs to **two decades only: 1590s and 1600s**
  - DUCATONI dating **from 1610s** onwards tend to show a reduced deviation from the expected weight
- **Coin clipping as a quick adaptation to the appreciation of the bullion and – in turn – to the depreciation of the money of account**
  - **‘Debasement’ driven by the market, not by the government:** coin clipping to adapt the value of the coin to the price officially proposed by the decrees
  - **Only in 1610s the governments took the proper actions (debasement vs. brand new, lighter coins)**

## It all comes to an end...

*If you have any questions about this document, please don't hesitate to contact me at:*

- <https://www.sibrium.org/>
- [mail@sibrium.org](mailto:mail@sibrium.org)

