

## Electronic supplementary material

Hedges SB. 2013. Wormholes record species history in space and time.  
*Biology Letters*. <http://dx.doi.org/10.1098/rsbl.2012.0926> (published online 21 November 2012)

### Supplementary material and methods

**Sampling strategy.** The major difference between northern and southern wormholes was noticed early in the study. Subsequently, effort was made to sample broadly in woodcuts from both regions (hence, most of western Europe), to better delineate the distributions of the two types. Although woodcuts from popular literature (e.g., *chapbooks* and *imagerie populaire*) were the most productive for wormholes, all woodcuts (or their images) that could be examined were sampled. Sampling could have proceeded indefinitely, given the large number of woodcuts printed in Europe, but it was halted after sufficient geographic and temporal coverage was obtained.

**Species identification.** The species most likely responsible for printed wormholes from northern Europe is the Common Furniture Beetle, *Anobium punctatum*, whereas that from southern Europe is the Mediterranean Furniture Beetle, *Oligomerus ptilinoides*. Although many species of European insects are wood-borers, eight beetles of the families Anobiidae and Bostrichidae are among those most likely to cause damage to wooden structures and objects [1-4]. The two native termites, *Reticulitermes santonensis* (Rhinotermitidae) and *Kaloterms flavicollis* (Kalotermitidae), occur in southern Europe but do not normally infest dry wood objects indoors, preferring damp (*Kaloterms*) or rotting (*Reticulitermes*) wood in outdoor situations. Among the beetles, *Coelostethus pertinax* and *Xestobium rufovillosum* also prefer damp and rotting wood, with the former preferring softwoods such as pine. *Hylotrupes bajulus* is another softwood specialist, with elliptical (not round) exit holes. *Lyctus brunneus*, an introduced species in Europe, prefers dry hardwoods, and produces exit holes 1–2 mm, similar in size to the northern printed wormholes. However, it requires wood with pores large enough for its ovipositor (80 µm, average diameter), which excludes the small-pored woods used in most woodblocks: box (35 µm), pear (50 µm), and apple (40–60 µm) [1, 5, 6]. *Ptilinus pectinicornis* prefers hardwoods and produces small exit holes 1–2 mm in diameter but usually confines its attacks to dead trees outdoors and is not known to attack box, pear, or apple [2, 7]. *Nicobium castaneum* has similar habits (preferences) to *Oligomerus ptilinoides*, although it prefers moist and moldy wood and its attacks on woodwork have been considered minor and unimportant compared with its attacks on paper and libraries [7]. Because of known variation in wormhole size within a species, it is important to analyze a population of wormholes, and obtain a mean and variance.

Printed wormhole tracks probably were caused by larvae of *Oligomerus ptilinoides*. Adult beetles do not normally feed but rather focus on reproduction [1, 4]. Larvae of *O. ptilinoides* usually follow the grain while tunneling whereas those of *Anobium punctatum* usually do not [1, 4]. In nature, following the concentric grain would be adaptive, keeping the larva in the tree. However, in a woodblock plank, cut through arcs of grain, the same behavior would cause some tunneling larvae to unintentionally exit the carved surface at a low angle (figure 3b), a feature of tracks in surviving woodblocks (figure 1d). Alternatively, the tracks may represent collapsed larval tunnels, close to the surface. The biology of these species also explains the rarity of wormholes in first edition woodcuts. Larvae hatch within a month, but typically spend 2–4 years tunneling before they pupate [1]. Unless there was a delay in the initial printing, this would not normally allow enough time for printed flight holes to appear in first edition prints.

**Species distributions.** There has been no comprehensive analysis or review of the geographic distributions of *Anobium punctatum* or *Oligomerus ptilinoides*, concerning either their current or historical distributions. *Anobium punctatum* is known from several archaeological sites in northern and central Europe [8-10], which establishes it as a native species, but otherwise does not define its historical distribution in any detail. Fauna Europaea [11] provides some country-based information and there are 676 museum records for this species currently in the Global Biodiversity Information Facility (GBIF) database [12]. However, only 10% of the records are pre-1950, and only six records are pre-20th Century (all six in late 1800s). There are some anecdotal literature records noting the invasive occurrence of this species [13-15]. The available data are sufficient to derive a current distribution by country (figure 2c), but are insufficient to reconstruct the pre-invasive, historical distribution as was done here with wormhole data (Figure 2a). Fewer data are available for *Oligomerus ptilinoides*. GBIF lists only 44 records [12], with the earliest being from 1950, and there are notes on its invasive occurrence as well [16]. Again, this is sufficient to derive a current distribution by country (figure 2d) but not with detail and not with respect to historical changes.

**Supplementary Table 1: Summary statistics on printed wormholes, graphed in figure 2:**

City	Dates	Prints	Wormholes	Mean	SDEV	MIN	MAX	SE	95% CI- L	95% CI- H
1. BE: Antwerp	1660-1800	5	74	1.41	0.26	0.72	1.97	0.03	1.35	1.47
2. BE: Brugge	1740	1	11	1.46	0.35	0.97	2.20	0.11	1.25	1.68
3. BE: Ghent	1700	2	106	1.40	0.36	0.62	2.19	0.04	1.33	1.47
4. BE: Tournhout	1700-1800	5	74	1.37	0.29	0.69	2.03	0.03	1.30	1.44
5. DK: Copenhagen	1800	3	106	1.46	0.32	0.66	2.09	0.03	1.40	1.52
6. DK: Odense	1750	1	100	1.41	0.25	0.90	1.98	0.02	1.36	1.45
7. UK: London	1512-1774	61	683	1.42	0.27	0.82	2.41	0.01	1.40	1.44
8. FR: Amiens	1700-1799	1	14	1.36	0.21	0.90	1.70	0.06	1.25	1.47
9. FR: Angers	1800-1899	2	82	1.47	0.38	0.68	2.26	0.04	1.38	1.55
10. FR: Avranches	1700-1799	3	35	1.47	0.22	1.07	1.82	0.04	1.39	1.54
11. FR: Chartres	1700-1772	2	59	1.43	0.27	0.81	2.20	0.03	1.36	1.50
12. FR: Coutances	1800	2	52	1.38	0.24	0.93	2.03	0.03	1.31	1.45
13. FR: Dunkirk	1700	1	20	1.45	0.39	0.83	2.14	0.09	1.27	1.63
14. FR: Laval	1650	1	10	1.51	0.29	1.11	1.98	0.09	1.33	1.69
15. FR: Le Mans	1700-1814	5	71	1.48	0.26	0.93	2.08	0.03	1.42	1.54
16. FR: Lorient	1700-1799	1	16	1.41	0.23	1.12	2.04	0.06	1.30	1.53
17. FR: Orleans	1789-1791	7	45	1.43	0.30	0.86	2.04	0.04	1.34	1.52
18. FR: Quimper	1700-1799	1	37	1.35	0.25	0.85	1.86	0.04	1.27	1.43
19. FR: Rouen	1592-1699	7	29	1.45	0.35	0.68	2.20	0.06	1.32	1.58
20. FR: Saumur	1800	1	27	1.41	0.36	0.85	2.16	0.07	1.27	1.55
21. FR: Strasbourg	1485-1720	24	62	1.42	0.29	0.79	2.06	0.04	1.35	1.50
22. DE: Augsburg	1480-1799	6	43	1.41	0.29	0.63	1.97	0.04	1.33	1.50
23. DE: Cologne	1568	1	12	1.43	0.29	1.14	2.06	0.08	1.27	1.60
24. DE: Hof	1573	1	13	1.48	0.41	0.71	2.16	0.11	1.25	1.71
25. DE: Munich	1470	1	11	1.32	0.16	1.05	1.61	0.05	1.22	1.42
26. DE: Regensburg	1520-1570	2	15	1.44	0.23	1.18	1.87	0.06	1.32	1.56
27. NL: Amsterdam	1509-1603	3	119	1.46	0.25	0.86	2.13	0.02	1.42	1.51
28. NL: Haarlem	1588	3	31	1.43	0.29	0.70	1.93	0.05	1.33	1.53
29. NL: Rotterdam	1800	1	15	1.48	0.31	1.03	2.04	0.08	1.32	1.64
30. SE: Lund	1800	5	66	1.42	0.33	0.73	2.12	0.04	1.34	1.50
31. FR: Avignon	1830	1	25	2.42	0.34	1.76	3.04	0.07	2.28	2.55
32. FR: Chalon	1600-1799	1	12	2.33	0.34	1.91	2.99	0.10	2.13	2.52

33. FR: Epinal	1820	4	26	2.37	0.34	1.89	3.19	0.07	2.23	2.50
34. FR: Foix	1800	1	18	2.18	0.35	1.43	2.62	0.08	2.01	2.34
35. FR: Paris	1495-1635	32	110	2.23	0.59	0.94	3.95	0.06	2.12	2.33
36. FR: Poitiers	1700-1799	1	17	2.28	0.36	1.51	2.97	0.09	2.10	2.45
37. FR: Toulouse	1475-1820	4	21	2.32	0.46	1.53	3.02	0.10	2.12	2.52
38. FR: Troyes	1600-1859	6	49	2.32	0.32	1.65	3.19	0.05	2.23	2.41
39. IT: Bassano	1700-1899	2	28	2.34	0.40	1.65	3.06	0.08	2.19	2.50
40. IT: Bologna	1600-1855	100	261	2.36	0.52	0.93	4.22	0.03	2.30	2.43
41. IT: Brescia	1750-1899	3	115	2.28	0.43	1.31	3.59	0.04	2.20	2.36
42. IT: Florence	1475-1599	6	13	2.36	0.40	1.54	2.96	0.11	2.14	2.58
43. IT: Modena	1646-1752	4	59	2.14	0.37	1.43	2.96	0.05	2.04	2.24
44. IT: Padua	1517	1	71	2.45	0.47	1.32	3.84	0.06	2.34	2.57
45. IT: Rome	1581-1627	2	10	2.29	0.41	1.61	2.92	0.13	2.03	2.55
46. IT: Venice	1510-1699	89	310	2.36	0.48	1.40	4.70	0.03	2.30	2.41
47. ES: Barcelona	1700-1899	1	163	2.38	0.37	1.22	3.48	0.03	2.33	2.44
48. ES: Manresa	1680	1	32	2.26	0.53	1.53	3.54	0.09	2.07	2.45
49. ES: Moia	1669-1680	4	79	2.40	0.54	1.04	3.58	0.06	2.28	2.52
50. CH: Basle	1492-1628	4	36	2.24	0.38	1.45	3.02	0.06	2.12	2.37
51. CH: Yverdon	1650	11	21	2.17	0.45	1.20	2.90	0.10	1.97	2.36
Cities with fewer than 10 wormholes examined:										
52. DE: Bamberg	1462-1463	3	3	1.39	0.25	1.10	1.57	0.15	1.10	1.68
53. DE: Hamburg	1810-1820	1	6	1.49	0.14	1.36	1.76	0.06	1.37	1.60
54. DE: Nuremberg	1503-1560	2	9	1.46	0.20	1.14	1.82	0.07	1.33	1.59
55. DE: Ulm	1475-1498	4	4	1.40	0.31	1.08	1.68	0.15	1.10	1.71
56. UK: Glasgow	1840	3	8	1.32	0.35	0.97	1.90	0.13	1.07	1.57
57. SE: Växjö	1808	1	4	1.66	0.07	1.57	1.75	0.04	1.59	1.74
58. FR: Lyon	1671-1753	5	5	2.34	0.42	1.95	3.02	0.19	1.96	2.72
59. IT: Siena	1500-1606	2	9	2.40	0.56	1.85	3.53	0.19	2.03	2.77
60. PT: Evora	1558-1580	1	4	2.35	0.17	2.17	2.56	0.09	2.17	2.52
61. PT: Lisbon	1545-1587	2	4	2.20	0.26	1.95	2.57	0.13	1.94	2.46
62. ES: Valladolid	1532-1552	4	7	2.34	0.48	1.80	3.00	0.18	1.98	2.70
63. CH: Zurich	1560	3	3	2.30	0.25	2.03	2.53	0.15	2.01	2.60

Cities with wormhole tracks but lack of scale precluded measurements:

64. FR: Limoges	1600- 1699	1	(no measurements taken)
65. FR: Montauban	c. 1600	1	(no measurements taken)
66. FR: Puy	1600- 1699	1	(no measurements taken)

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**Supplementary Table 2. Prints examined:**

<b>City</b>	<b>Date</b>	<b>Title, subject, page, or print number</b>	<b>Creator</b>	<b>Reference</b>
1. Antwerp	1800	Valentyn en oursson	Valentine	[17, 18]
1. Antwerp	1800	Historie van de vier vroomen ridders genaemd de vier hems-kinderen	Anonymous	[18, 19]
1. Antwerp	1800	Helias	Anonymous	[18, 20]
1. Antwerp	1737	Jerusalem	Josephus, F. and A. Meerbeeck	[18, 21]
1. Antwerp	1660	Jan van Parys	Anonymous	[18, 22]
2. Brugge	1740	Het Dobbel Cabinet	Anonymous	[18, 23]
3. Ghent	1700	Militaires	Anonymous	[24]
3. Ghent	1700	S. Anna Tot Botelaer	Anonymous	[25]
4. Turnhout	1748	Duyvels Dans	Anonymous	[25]
4. Turnhout	1700	Loterie Spirituelle	Anonymous	[25]
4. Turnhout	1800	De Verkeerde Wereld	Anonymous	[25]
4. Turnhout	1700	Hier ziet gy pronken triumphant	Anonymous	[25]
4. Turnhout	1800	De ce chef-d'oeuvre de la nature	Anonymous	[25]
5. Copenhagen	1800	L'Imperatrice caterina di Russia E il Sultano Ahmed IV Turchia	Johan Rud	[26]
5. Copenhagen	1800	Una iena che nella zona di gauvadan in Francia ha sbranato molte persone	Johan Rud	[26]
5. Copenhagen	1800	L'Apparizione di cristo a re christiano IV	Johan Rud	[26]
6. Odense	1750	O Uomo vieni a vedere il cristo crocifisso	P. W. Brandt	[26]
7. London	1512	W. de Worde #410	W. de Worde	[27]
7. London	1518	W. Caxton #346	W. Caxton	[27]
7. London	1519	W. de Worde #859	W. de Worde	[27]
7. London	1526	R. Pynson #1933	Richard Pynson	[27]
7. London	1526	R. Pynson #1944	Richard Pynson	[27]
7. London	1526	R. Pynson #1502	Richard Pynson	[27]
7. London	1526	R. Fakes #2028	R. Fakes	[27]
7. London	1549	p. 1	Coverdale	[28]
7. London	1633	p. 9	Gerard	[29]
7. London	1633	p. 12	Gerard	[29]
7. London	1633	p. 21	Gerard	[29]
7. London	1633	p. 56	Gerard	[29]
7. London	1633	p. 57	Gerard	[29]
7. London	1633	p. 147	Gerard	[29]
7. London	1633	p. 172	Gerard	[29]
7. London	1633	p. 187	Gerard	[29]
7. London	1633	p. 404	Gerard	[29]

7. London	1633	p. 443	Gerard	[29]
7. London	1633	p. 1044	Gerard	[29]
7. London	1633	p. 1183	Gerard	[29]
7. London	1633	p. 1248	Gerard	[29]
7. London	1633	p. 1294	Gerard	[29]
7. London	1633	p. 1411	Gerard	[29]
7. London	1633	p. 1554	Gerard	[29]
7. London	1650	p. 1	Francis Grove	[30]
7. London	1677	p. 1	Anonymous	[31]
7. London	1690	Christ in Glory, Fig. 24 on p. 172	Clarke of Bodnam	[32]
7. London	1700	Hell, Fig. 23	Brown & Norris	[32]
7. London	1774	p. 29a	Harley	[33]
7. London	1774	p. 29b	Harley	[33]
7. London	1774	p. 30a	Harley	[33]
7. London	1774	p. 42	Harley	[33]
7. London	1774	p. 46a	Harley	[33]
7. London	1774	p. 47	Harley	[33]
7. London	1774	p. 55b	Harley	[33]
7. London	1774	p. 90a	Harley	[33]
7. London	1774	p. 134	Harley	[33]
7. London	1774	p. 144	Harley	[33]
7. London	1774	p. 168b	Harley	[33]
7. London	1774	p. 171	Harley	[33]
7. London	1774	p. 203b	Harley	[33]
7. London	1774	p. 239a	Harley	[33]
7. London	1774	p. 239b	Harley	[33]
7. London	1774	p. 241	Harley	[33]
7. London	1774	p. 253a	Harley	[33]
7. London	1774	p. 282a	Harley	[33]
7. London	1774	p. 282b	Harley	[33]
7. London	1774	p. 286	Harley	[33]
7. London	1774	p. 309	Harley	[33]
7. London	1774	p. 358b	Harley	[33]
7. London	1774	p. 360	Harley	[33]
7. London	1774	p. 378	Harley	[33]
7. London	1774	p. 428	Harley	[33]
7. London	1774	p. 471	Harley	[33]
7. London	1774	p. 739	Harley	[33]
7. London	1655-1674	page 1	Deloney	[34]
7. London	1655-1674	page 2	Deloney	[34]
7. London	1663-1665	page 1	Coles	[35]
7. London	1672-1695	page 1	Anonymous	[36]
7. London	1678-1681	page 1	Anonymous	[37]
7. London	1682-1700	page 1	D'Urfrey	[38]
7. London	1700?	The glorious resurrection, p. 170 (holes calibrated to original scale from online EEBO scaled image)	Coles	[32]
8. Amiens	1700-1799?	Sainte-Helene, fig. 33, p. 255	Anonymous	[39]

9. Angers	1800-1899	Scene de Cirque	Guillauine	[40]
9. Angers	1800	Saint Honore	Pierre Lesourde	[40]
10. Avranches	1700-1799	Madonna, fig. 1	Anonymous	[41]
10. Avranches	1726	l'Adoration, fig. 5	Lecourt	[41]
10. Avranches	1700-1799	Jesus, fig. 9	Anonymous	[41]
11. Chartres	1772	L'Assomption, p. 13	Bridan	[40]
11. Chartres	1700	Les Plaisirs, p. 73	Moquet	[40]
12. Coutances	1800	Playing Cards I	Anonymous	[41]
12. Coutances	1800	Playing Cards II	Anonymous	[41]
13. Dunkirk	1700	Jeu de L'oie, fig. 163	Emmanuel Laurenz	[24]
14. Laval	1650	Nuestra Senora Del Pilar de Caragoca, p. 63	Anonymous	[40]
15. Le Mans	1814	La Famille Royal, p. 122	Le Loupe	[40]
15. Le Mans	1800	La Liberté des Cultes	Le Loupe	[40]
15. Le Mans	1738	Representation	Anonymous	[40]
15. Le Mans	1750	Quatre Guardes du Corps	Anonymous	[40]
15. Le Mans	1783	Le Globe aerostatique, p. 290	Portier	[39]
16. Lorient	1700-1799	Notre Dame, fig. 42, p. 327	Bernar	[39]
17. Orleans	1789	A Faut Esperer	Letourmy	[42]
17. Orleans	after july 1790	Représentation de la Fête de la Fédération du 14 Juillet 1790	Letourmy	[42]
17. Orleans	1789	Portraits des amis du thiers Mr de Lafayette General/ de la Milice Parisienne Mr Labe Gregoire/ Depute de Lorraine	Letourmy	[42]
17. Orleans	1789	Etat deputez / Aux etats	Letourmy	[42]
17. Orleans	8/1790- 12/1791	Portrait de M. des Ilse	Letourmy	[42]
17. Orleans	1790-1791	Je Suis Marin. F. Francais / Pour La Vie. Et Je M'apelle. Jean Bart. A Orleans	Letourmy	[42]
18. Quimper	1700-1799	Isaac Laquedem, Calzolaio, p. 13	Anonymous	[43]
19. Rouen	1592	p. 13	Aubert	[44]
19. Rouen	1592	p.14	Aubert	[44]
19. Rouen	1592	p. 16	Aubert	[44]
19. Rouen	1592	p. 176	Aubert	[44]
19. Rouen	1600-1699	p. 81	Coste	[45]
19. Rouen	1600-1699	p. 158	Coste	[45]
19. Rouen	1600-1699	p. 215	Coste	[45]
20. Saumur	1800	Chef Vendeen ou Bonaparte, p. 38?	Anonymous	[40]
21. Strasbourg	1577	p. 413	Bock	[46]
21. Strasbourg	1577	p. 420	Bock	[46]
21. Strasbourg	1577	p. 425	Bock	[46]
21. Strasbourg	1577	p. 429	Bock	[46]
21. Strasbourg	1577	p.448	Bock	[46]
21. Strasbourg	1485-1529	p.50	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p65	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p79	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p82	Johannes Cuba	[47]

21. Strasbourg	1485-1529	p87	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p90	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p102	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p108	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p109	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p112	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p134	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p138	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p151	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p159	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p160	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p172	Johannes Cuba	[47]
21. Strasbourg	1485-1529	p236	Johannes Cuba	[47]
21. Strasbourg	1506	fig. 620, p355: Le christ menacé de lapidation devant le portique de Salomon	J. Geiler	[48, 49]
21. Strasbourg	1506	fig. 625, p. 360: Parabole du fuguiet stérile	J. Geiler	[48, 49]
21. Strasbourg	1506	fig. 627, p. 362: Judas s'entend avec les grands prêtres pour leur livrer Jésus	J. Geiler	[48, 49]
21. Strasbourg	1506	fig. 632, p. 367: Désespoir de Judas et Dérision du Christ	J. Geiler	[48, 49]
21. Strasbourg	1506	fig. 634, p. 369: Jésus devant Hérode	J. Geiler	[48, 49]
21. Strasbourg	1506	fig. 635, p. 370: Jésus est ramené devant Pilate	J. Geiler	[48, 49]
21. Strasbourg	1720	Inri, fig. 20, p. 151	Nicke	[39]
22. Augsburg	1480	Madonna, fig. 172	Anonymous	[50]
22. Augsburg	1494	Saints Valentine, Stephen, and Maximillian, fig. 1.20 (p. 38)	Hans Burgkmair	[51]
22. Augsburg	1720	A La Memoire du saltimbanque kilian brustfleck, fig. 92	Anonymous	[52]
22. Augsburg	1775-1799	L'Ogre et la Méchante sorcière, fig. 113	Schmidt, Albrecht.	[52]
22. Augsburg	1775-1799	L'Ogre et la Méchante sorcière, Fig. 114		[52]
23. Cologne	1568	Portrait of a fool, right (p. 408)	Hanberg	[53]
24. Hof	1573	Dismemberment, p. 517	Pfeilschmidt	[53]
25. Munich	1470	La truie des Juifs (Bruckner fig. 22; Schreiber Katalog 1961; print based on one from Alsace, now in Munich; printed in Munich or nearby in southern Germany)	Anonymous	[52, 54]
26. Regensberg	1562	Portrait of a clergyman (p. 517)	Kirchmaier	[53]
26. Regensberg	1520-1570	Renaissance Piazza (p. 627)	Loy	[53]

27. Amsterdam	1544	Die vermaerde Coopstadt van Amstelredam	Cornelis Anthoniszoon Schilder	[55]
27. Amsterdam	1509-1603	Man van Smarten	Cornelis Anthoniszoon Schilder	[56]
27. Amsterdam	1541	De rijke man en de arme Lazarus	Cornelis Anthoniszoon Schilder	[57]
28. Haarlem	1588	Mars in half-length (print 406)	Gotzsius	[58]
28. Haarlem	1588	Gillis Van Breen (print 404)	Gotzsius	[58]
28. Haarlem	1588	Pike Bearer (print 401)	Gotzsius	[58]
29. Rotterdam	1800	Jeu de des, Imite deu Jeude L'Oie (print 165)	Masier	[24]
30. Lund	1800	Il Mondo alla rovescia (Fig. 99 in Clausen)	C. G. Berling	[26]
30. Lund	1800	Manifesto per L'Esibizione del Cavallerizzo iacob bates nel parco di dyrehaven (Fig. 110)	T. L. Borup	[26]
30. Lund	1800	Il sacrificio D'Isacco (Fig. 92)	C. G. Berling	[26]
30. Lund	1800	Donna seduta (Fig. 100)	C. G. Berling	[26]
30. Lund	1800	Re a cavallo (Fig. 97)	C. G. Berling	[26]
31. Avignon	1830	Saint Symphorien (p. 426)	Leblond	[39]
32. Chalon	1600-1799	Saint Jacques de Compostelle, Fig. 4, p. 53	Anonymous	[59]
33. Epinal	1820	Le Sainte Famille	Francoise Georgin	[60]
33. Epinal	1820	L'Horloge de la Passion	Francoise Georgin	[61]
33. Epinal	1820	Lazzarone	Francoise Georgin	[62]
33. Epinal	c. 1820	La fête Villageoise	Francoise Georgin	[63]
34. Foix	c. 1800	Triomphe de Napoleon (p. 411)	Berard Muard	[39]
35. Paris	1495-1497	title page	Denidel & de la Barre	[64]
35. Paris	1500	A warning againt playing dice (Fig. 283)	Jean Lambert	[50]
35. Paris	1612-1635	plate 1	J. Le-Clerc	[65]
35. Paris	1612-1635	plate 2	J. Le-Clerc	[65]
35. Paris	1612-1635	plate 5	J. Le-Clerc	[65]
35. Paris	1612-1635	plate 9	J. Le-Clerc	[65]
35. Paris	1612-1635	plate 11	J. Le-Clerc	[65]
35. Paris	1612-1635	plate 12	J. Le-Clerc	[65]
35. Paris	1612-1635	plate 13	J. Le-Clerc	[65]
35. Paris	1612-1635	plate 15	J. Le-Clerc	[65]
35. Paris	1612-1635	plate 18	J. Le-Clerc	[65]
35. Paris	1612-1635	plate 19	J. Le-Clerc	[65]
35. Paris	1612-1635	plate 21	J. Le-Clerc	[65]
35. Paris	1612-1635	plate 22	J. Le-Clerc	[65]
35. Paris	1612-1635	plate 23	J. Le-Clerc	[65]

35. Paris	1612-1635	plate 24	J. Le-Clerc	[65]
35. Paris	1612-1635	Plate 20	J. Le-Clerc	[65]
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35. Paris	1612-1635	plate 45	J. Le-Clerc	[65]
35. Paris	1612-1635	plate 46	J. Le-Clerc	[65]
36. Poitiers	1700-1799	Le Miracle (fig. 47, p. 367)	Bertrand	[39]
37. Toulouse	1475-1499	Print of the confraternity of the millers of Le Bazacle. Toulouse, France (fig. 100)	Anonymous	[66]
37. Toulouse	1650-1799	Print of the confraternity of the five wounds of christ. Toulouse, France (fig. 104)	Anonymous	[66]
37. Toulouse	1820	Exercices de piété	Anonymous	[67]
37. Toulouse	1792	Association de Ste Barbe	Anonymous	[67]
38. Troyes	1600-1699	Le Vray Miroir du Pecheur	Anonymous	[40]
38. Troyes	1626	Le Romant de Florent et Lyon. Troyes: Nicolas Oudot. (p. 138)	Oudot	[68]
38. Troyes	1699	Title Page	d'Arras	[68]
38. Troyes	1859	Fig 17	Varlot	[69]
38. Troyes	1859	Fig. 18	Varlot	[69]
38. Troyes	1859	Fig. 53	Varlot	[69]
39. Bassano	1700-1799	Il Cane Barbino (Fig. 124)	Remondini	[70]
39. Bassano	1800-1899	Il Gatto Domestico (Fig. 125)	Remondini	[70]
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40. Bologna	1642	p. 25	Aldrovandi	[71]
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40. Bologna	1668	Ulyssis Aldrovando Dendrologiae naturalis	Ulisse	[72]
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40. Bologna	1815	Dialogo tra morte e un guerriero (Fig. 78)	Anonymous	[70]
40. Bologna	1855	Gioco del cucualla nuova fabbrica (Fig LI)	Anonymous	[70]
41. Brescia	1800	San Crispino (print 148)	Maccanelli	[73]
41. Brescia	1750-1799	Il Salto (print 90)	Anonymous	[73]
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42. Florence	1620	Rappresentazione di Abramo e Isacco (Fig. 2)	Anonymous	[70]
42. Florence	1620	Storia di san Basilo (Fig. 3)	Anonymous	[70]
42. Florence	1475-1499	Title page, Nouella piaceuole chiamata la viola. Nuouamente Stampata (p. 53, Florence, Italy?)	Anonymous	[74]
42. Florence	1500-1599	La Regina D'Oriente (Fig. 4)	Anonymous	[70]
42. Florence	1500-1599	La historia e morte di Lucretia Romana (Fig. 162)	Anonymous	[70]
43. Modena	1747	Maschera mostrusa (Fig. XLVI)	Soliani	[70]
43. Modena	1748	Maschera mostrusa (Fig XLVIII)	Soliani	[70]
43. Modena	1749	Maschera mostrusa (Fig. XLVII)	Soliani	[70]
43. Modena	1749	Maschera mostrusa (Fig. XLVII)	Soliani	[70]
43. Modena	1646-1752	Vecchia Gobba (Fig. XVI)	Soliani	[70]
44. Padua	1517	The Massacre of the Innocents	Campagnola	[75]
45. Rome	1627	The alliance of peace and abundance (fig. 131)	Coriolano	[75]
45. Rome	1581	Title page	Clavius	[76]
46. Venice	1510	The Triumph of Christ, block 3	Titian	[75]
46. Venice	1510	The Triumph of Christ, block 4	Titian	[75]
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46. Venice	1514	Susannah and the Elders, bottom block, left	Titian	[75]
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46. Venice	1540	The Mystic Marriage of St. Catherine	Titian	[75]
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46. Venice	1606	Print 1	Ramusio	[78]
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46. Venice	1600-1699	Dichiarazione D'Amore (Fig. 88)	Anonymous	[70]
47. Barcelona	1700-1899	S. Christophore, ora pro nobis. Barcelona: Tecla pla Viuda administrada per Verdaguer [printed in 19th century but author lived 1682-1770, therefore the wide interval assumed here, 1700-1899 (p. 66)	Jolis I Oliver, Isabel	[80]
48. Manresa	1680	Sant Maurici	Abadal	[81, 82]
49. Moia	1669	Crist a Getsemani (p. 36-37)	Abadal	[81]
49. Moia	1672	Sant Jordi (p. 70-71)	Abadal	[81]
49. Moia	1680	Sant Pau (p. 103)	Abadal	[81]
49. Moia	1678	Abres el oio (p. 29)	Abadal	[81]
50. Basle	1492-93	Das Theater (Vol. 3, 262.1)	Durer	[83]
50. Basle	1494	Das Narren schyff (Vol. 3, 266.1)	Durer	[83]
50. Basle	1543	De humani corporis fabrica libri septem	Vesalii	[75]
50. Basle	1572-1628	The massacre of St. Bartholomew's Day. P. 205 in Münster's Cosmographia, 1628, Basel, Switzerland	Scharfenber g	[53]
51. Yverdon	1650	p. 254	Bauhin	[84]
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51. Yverdon	1650	p. 293	Bauhin	[84]
51. Yverdon	1650	p. 312	Bauhin	[84]
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51. Yverdon	1650	p.401	Bauhin	[84]
51. Yverdon	1650	p.424	Bauhin	[84]
51. Yverdon	1650	p.139,viii	Bauhin	[84]
51. Yverdon	1650	p. 347,viii	Bauhin	[84]
51. Yverdon	1650	p.176, xv	Bauhin	[84]
52. Bamberg	1462-63	p. 29	Pfister	[85]
52. Bamberg	1462-63	p. 31	Pfister	[85]
52. Bamberg	1462-63	p. 27	Pfister	[85]
53. Hamburg	1810-1820	Fig. 144	Krogmann, J. H.	[52]
54. Nuremberg	1503-1511	Presentation of the Virgin in the Temple (Fig. 70, p. 97)	Durer	[86]
54. Nuremberg	1560	Porträt Pfalzgraf (Fig. 16, p. 36)	Virgil Solis	[87]
55. Ulm	1475	print 1	Anonymous	[88]
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56. Glasgow	1840	page 17	Anonymous	[90]
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57. Växjö	1808	La passione di Cristo (Fig. 106)	S. Rask	[26]
58. Lyon	1671	p. 46	Bauhin	[92]
58. Lyon	1671	p. 128	Bauhin	[92]
58. Lyon	1671	p. 316	Bauhin	[92]
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59. Siena	1606	La divota istoria di san Giuliano (Fig. 6)	Anonymous	[70]
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60. Evora	1558-1580	Title page	Silva, Feliciano de.	[94]
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63. Zurich	1560	page 20	Gessner	[99]
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63. Zurich	1560	p 118	Gessner	[99]
Tracks observed, but lack of scale precluded measurements:				
64. FR: Limoges	1600-1699	Saint-Jacques de Compostelle (fig. 49, p. 383)	Chapoulaud, Jean	[39]

65. FR:	c. 1600	Purgatoire, p. 386	Forestié	[39]
Montauban				
66. FR: Puy	1600-1699	Saint-Jacques de Compostelle (p. 421)	Bufferne	[39]

## References

- Hickin N.E. 1976 *The Insect Factor in Wood Decay*. New York, St. Martin's Press; 383 p.
- Hickin N.E. 1981 *The Woodworm Problem*. Third ed. East Grinstead, U.K., Rentokil Ltd.
- Cymorek S. 1984 Schadinsekten in Kunstwerken und Antiquitäten aus Holz in Europa. In *Holzschutz: Forschung und Praxis* (eds. Cymorek S., Ehrentreich W., Metzner W.), pp. 37-56. Leinfelden-Echterdingen, DRW-Verlag, Weinbrenner-KG.
- Unger A., Schniewind A.P., Unger W. 2001 *Conservation of Wood Artifacts*. Berlin, Springer; 578 p.
- Doley D. 1974 Alternatives to the assessment of earlywood and latewood in Dicotyledonous trees: a study of structural variation in growth rings of apple (*Malus pumila* Mill.). *New Phytol* **73**, 157-171.
- Richter H.G., Dallwitz M.J. 2006 *Commercial timbers: descriptions, illustrations, identification, and information retrieval* (<http://delta-intkey.com>). Jalisco, Mexico, University of Guadalajara.
- Español F. 1969 Anobiides nusibles en Espangne au bois ouvré. *Mem Soc Entomol Ital* **48**, 25-29.
- Osborne P.J. 1969 An insect fauna of late Bronze Age date from Wilsford, Wiltshire. *J Anim Ecol* **38**, 555-566.
- Coope G.R., Elias S.A. 2000 The environment of Upper Palaeolithic (Magdalenian and Azilian) hunters at Hauterive-Champréveyres, Neuchâtel, Switzerland, interpreted from coleopteran remains. *Journal of Quaternary Science* **15**, 157-175.
- Whitehouse N.J. 2006 The Holocene British and Irish ancient forest fossil beetle fauna: implications for forest history, biodiversity and faunal colonisation. *Quaternary Sci Rev* **25**(15-16), 1755-1789.
- Fauna Europaea. 2012 *Fauna Europaea Version 2.4* (<http://www.faunaeur.org>). Accessed 9 May 2012 Amsterdam, The Netherlands, University of Amsterdam.
- GBIF. 2012 *Global Biodiversity Information Facility (GBIF) database* ([www.gbif.org](http://www.gbif.org)). Accessed 30 August 2012. Copenhagen, Denmark, GBIF Secretariat.
- Español F. 1960 Notas sobre Anóbidos. *Publicaciones del Instituto de Biología Aplicado* **32**, 172-175.
- French J.R.J. 1968 The distribution of the furniture beetle, *Anobium punctatum* (de Geer) (Coleoptera: Anobiidae) in New South Wales. *Aust J Entomol* **7**, 115-122.
- Wittenberg R. 2005 An inventory of alien species and their threat to biodiversity and economy in Switzerland. (p. 155. Bern, Switzerland, Federal Office for the Environment of Switzerland.
- Halperin J. 1992 Occurrence of *Oligomerus ptilinoides* in Israel. *Phytoparasitica* **20**, 51-52.
- Valentine. 1800 *Een schoone Historie van de twee Gebroeders en vroom Ridders Valentyn en Oursson den Wilden-Man, zoonen Alexander Keyser van Constantinopelen, ende Neven van Pipinus Koning van Vrankryck. Van nieuws overzien, ende op veële plaetsen verbeterd*. Antwerp, Belgium, J. H. Heyliger.
- Heurck E.M.v. 1931 *Les Livres Populaires Flamands*. Antwerp, Belgium, J.-E. Buschmann; 160 p.
- Anonymous. 1800 *Historie van de vier vroom ridders genaemd de vier hems-kinderen*. Antwerp, Belgium, J. H. Heyliger; 60 p.
- Anonymous. 1800 *Een schoone historie van den ridder van aventueren helias genaemd den ridder met de zwaen*. Antwerp, Belgium, J. H. Heyliger; 32 p.
- Josephus F., Meerbeeck A. 1737 *De verderffnisse ... van Jerusalem. Synde een waerachtig verhael hoe de stadt Jerusalem vernielt is door de Keyzers Vespasianus en de Titus Getrouwelyck getrocken uyt de Boeken van Josephus ende Egesippus, door M. A. Meerbeeck, etc*. Antwerp, Belgium, Thieuller.
- Anonymous. 1660 *Een schoone historie van den edelen Jan van Parys, coninck van Vrankryck, die door groote vromigheid, geschicktheyt end subtielheit verkreegh, ende toudede [!] de dochter van den coninck van Spagnien, de welck onder-trouw was met den coninck van Engellant .....* Antwerp, Belgium, Joris Willemsens; 36 p.

23. Wysheyd C. 1740 *Het Dobbel Cabinet*. Brugge, Belgium, Martinus de Sloovere; 12 p.
24. Meyer M.d. 1970 *Imagerie populaire des pays-bas*. Milan, Italy, Electa; 216 p.
25. Heurck E.M.v. 1930 *L'imagerie populaire des Pays-bas, Belgique-Hollande*. Paris, France, Editions Duchartre & van Buggenhoudt.
26. Clausen V.E. 1973 *Stampe Popolari Scandinave*. Venice, Italy, Electa Editrice; 216 p.
27. Hodnett E. 1935 *English woodcuts, 1480-1535*. Oxford, Oxford University Press; 483 p.
28. Coverdale M. 1549 *The psalter or psalmes of Dauid after the tra[n]lacion of the great Byble poynted as it shall be sayed or song in churches*. London, UK, Humfrey Powell, for Edwarde Whitechurche; 340 p.
29. Gerard J., Davyes R., Dodoens R., Johnson T., Priest R. 1633 *The herball: or, Generall historie of plantes*. (p. 1630. London, UK, Adam Islip, Joice Norton and Richard Whitakers.
30. Grove F. 1650 *The Dying Tears of a Penitent Sinner*. London, Francis Grove.
31. Anonymous. 1677 *The bachelor's ballad*. London, Philip Brooksby; 1 p.
32. Watt T. 1991 *Cheap print and popular piety, 1550-1640*. New York, Cambridge University Press; 370 p.
33. Harley R. 1774 *Ancient songs and ballads*. London, Thomas Pearson.
34. Deloney T. 1674 *The most rare and excellent history, of the Duchess of Suffolks calamity*. London, For F. Coles, T. Vere, and J. Wright.
35. Anonymous. 1665 *The downfall of William Grismond*. London, F. Coles, T. Vere, W. Gilbertson, and J. Wright.
36. Anonymous. 1695 *The bachelor's triumph*. London, Philip Brooksby; 1 p.
37. Anonymous. 1681 *The dying tears of the pentinent sinner*. London, F. Coles, T. Vere, J. Wright, W. Thackeray, and T. Passinger.
38. D'Urfrey. 1700 *Beauty's cruelty, or the passionate lover*. London, I. Deacon; 1 p.
39. Duchartre P.L., Saulnier R. 1925 *L'Imagerie populaire*. Paris, France, Librairie de France; 448 p. p.
40. Saulnier R. 1945 *L'Imagerie Populaire du Val de Loire*. Angers, France, Éditions Jacques-Petit.
41. Seguin J. 1930 *Cent reimpressions de vieilles gravures sur bois ou metal*. Paris, Groves & Michaux; 100 figs. p.
42. Demange F. 1989 *Images de la Révolution: Imagerie populaire orléanaise à l'époque révolutionnaire*. Orleans, France, Muse des Beaux-arts D'Orleans; 94 p.
43. Adhemar J. 1967 *Stampe popolari Francesci*. Milan, Italy, Electa; 224 p.
44. Aubert R. 1592 *Le grand calendrier & compost des bergers: avec le compost manuel reformé selon le retranchement des dix iours & Cale[n]drier Gregorian. plus y est adiousté la maniere comme se doit gouverner le berger (digital copy, Univ. Madrid, correct date = 1592, not 1529 in Google Books)*. Rouen, France, Richard Aubert.
45. Coste V.L. 1600-1699 *Le grand calendrier et compost des bergers : composé par le berger de la grand montaigne, avec le compost manuel reformé selon le retranchement des dix jours et le calendrier gregorien*. Rouen, France, V. L. Coste.
46. Bock H. 1577 *Kreütterbuch darin unterscheidt Nammen und Würckung der Kreütter (1964 facsimile)*. Strassburg, France, Gedruht; 450 p.
47. Cuba J.v. 1529 *Hortus sanitatis*. Strassburg, France, Beck; 144 p.
48. Geiler J. 1506 *Passionis Christi Vnvm ex quattuor euangelistis textum*. Strassburg, France, Ioannes Knoblouchus; 26 p.
49. Dupeux C., Lévy J., Wintzerith A., Wirth J. 2000 *La gravure d'illustration en Alsace au XVIe siècle. II* Strasbourg, France, Presses universitaires de Strasbourg; 432 p.
50. Field R.S. 1965 *Fifteenth century woodcuts and metalcuts from the National Gallery of Art, Washington, D.C*. Washington, D.C., National Gallery of Art; 365 ill. p.
51. Hults L.C. 1996 *The print in the Western World*. Madison, The University of Wisconsin Press; 968 p.
52. Brückner W. 1969 *Imagerie populaire Allemande*. Milan, Italy, Electa; 222 p.
53. Strauss W.L. 1975 *The German single-leaf woodcut, 1550-1600*. New York, Abaris Books, Inc.; 1429 p. p.
54. Keel O., Staubli T., Bickel S. 2003 *Les animaux du beme jour*. Fribourg, Switzerland, Saint-Paul.
55. Anthoniszoon C. 1544 *Die vermaerde Coopstadt van Amstelredam*. (p. Die vermaerde Coopstadt van Amstelredam (woodcut). Amsterdam, The Netherlands, Cornelis Anthoniszoon Schilder.
56. Anthoniszoon C. 1509-1603 *Man van Smarten*. (p. Man van Smarten (woodcut). Amsterdam, Cornelius Anthoniszoon.
57. Anthoniszoon C. 1541 *De rijke man en de arme Lazarus*. (p. De rijke man en de arme Lazarus (woodcut). Amsterdam, Cornelius Anthoniszoon.
58. Strauss W.L. 1977 *Hendrik Goltzius: the complete engravings and woodcuts*. New York, Abaris Books.

59. Garnier N. 1990 *L'Imagerie populaire française*. Paris, Editions de la Réunion des musées nationaux; 481 p. p.
60. GeorGIN F. 1820 Le Sainte Famille. (p. Le Sainte Famille (woodcut). Epinal, F. GeorGIN.
61. GeorGIN F. 1820 L'Horloge de la Passion. (p. L'Horloge de la Passion (woodcut). Epinal, F. GeorGIN.
62. GeorGIN F. 1820 Lazzarone. (p. Lazzarone (woodcut). Epinal, F. GeorGIN.
63. PerrouT R. 1914 *Les images d'Épinal*. Paris, France, P. Ollendorf; 160 p.
64. Denidel N., de la Barre N. 1495-1497 *Elegantiarum viginti praecepta*. Paris, France, Antoine Denidel and Nicolas de la Barre.
65. Le-Clerc J. 1635 *Figures de la sainte bible, accompagnées de briefs dicovrs, etc.* Paris, France, Chez Guillaume Le Be; 272 p.
66. Anonymous. 1974 *French popular imagery: five centuries of prints*. London, UK, Hayward Gallery; 147 p.
67. Musée Paul-Dupuy. 1952 *L'Estampe Toulousaine: L'Imagerie Populaire et les graveurs en taille d'épargne de 1660 à 1830*. Toulouse, France, Musée Paul-Dupuy; 110 p.
68. Delcourt T., Parinet E. 2000 *La Bibliothèque Bleue*. Chartres & Troyes, France, École nationale des chartres-La Maison du Boulanger de Troyes; 288 p.
69. Varlot L. 1859 *Xylographie de l'imprimerie troyenne pendant le XVe, le XVIe, le XVIIe et le XVIIIe siècle, précédée d'une lettre du Bibliophile Jacob, sur l'histoire de la gravure en bois*. Troyes, Varlot.
70. Toschi P. 1964 *Stampe Popolari Italiane*. Milan, Italy, Electa; 258 p.
71. Aldrovandi U. 1642 *Monstrorum Historia*. Bologna, Italy, Typis Nicolai Tebaldini; 907 p.
72. Aldrovandi U. 1668 *Vlyssis Aldrovandi Dendrologiae natvralis scilicet arborum historiae libri duo*. Bologna, Italy, I. B. Ferroni; 660 p.
73. Lise G. 1976 *Stampe Popolari Lombarde*. Milan, Italy, Electa.
74. Lippmann F. 1888 *The art of wood-engraving in Italy in the fifteenth century*. London, UK, Bernard Quaritch; 179 p.
75. Rosand D., Muraro M. 1976 *Titian and the Venetian woodcut*. Washington, D.C., International Exhibitions Foundation; 315 p.
76. Clavius C. 1581 *Christophori Clavii Bambergensis ex Societate Iesv, In Sphaeram Ioannis de Sacro Bosco commentariiv...* Rome, Italy, Pavli Gellii; 639 p.
77. Serlio S. 1544 *Regole generali di architettvra di Sabastiano Serlio Bolognese, sopra le cinque maniere de gli edifici*. Venice, Italy, F. Marcolini; 76 p.
78. Ramusio G.B. 1606 *Delle navigationi et viaggi*. Venice, Appresso i Giunti
79. Rusconi G. 1660 *I dieci libri d'architettvra* Venice, Italy, Nicolini; 148 p.
80. Blanc D., Albert-Llorca M. 1988 *L'imagerie Catalane*. Paris, Garae-Hesiode; 107 p.
81. Immaculada Socias Batet, Biblioteca de Catalunya. 2006 *Catàleg del Fons Abadal de la Biblioteca de Catalunya*. Barcelona, Spain, Biblioteca de Catalunya; 319 p.
82. Duran-Sanpere A. 1970 *Stampe Popolari Spagnole*. Milan, Italy, Electa Editrice; 224 p.
83. Dürer A. 2001 *Albrecht Dürer: das druckgraphische Werk*. Munich, Germany, Prestel; 560 p.
84. Bauhin J. 1650 *Historia plantarvm [plantarum] vniversalis [universalis], nova, et absolutissima [absolutissima]*. Yverdon, Switzerland, Typographia Caldoriana; 1041+1074+1094 p.
85. Pfister A. 1462-1463 *Biblia pauperum*. Bamberg, Germany, Albrecht Pfister.
86. Dürer A. 1971 *Albrecht Durer: master printmaker*. Boston, Massachusetts, Museum of Fine Arts; 295 p.
87. O'Dell I. 1993 *Jost Ammans buchschnuck-holzschnitte für Sigmund Feyerabend*. Wiesbaden, Otto Harrassowitz; 327 p.
88. Anonymous. 1475 *Ars Moriendi*. Ulm, Ludwig von Ulm; 24 p.
89. Anonymous. 1498 *Kalendar Iatromathematisches Hausbuch*. Ulm, Johann Schäffler.
90. Anonymous. 1840 *The history of Moses, Embellished with cuts*. Glasgow, Scotland, Printed for the Bookseller; 24 p.
91. Anonymous. 1840 *History of the Kings & Queens of England and Scotland, Part II*. Glasgow, Scotland, Printed for the Bookseller; 24 p.
92. Bauhin G. 1671 *Histoire des plantes de l'Europe, et des plus usitées qui viennent d'Asie, d'Afrique & d'Amérique*. Lyon, France. Lyon, France, J.-B. de Ville; 866 p.
93. Bauhin G. 1753 *Histoire des plantes de l'Europe, et des plus usitées qui viennent d'Asie, d'Afrique & d'Amérique*. Lyon, France. Lyon, France, J.-B. de Ville; 866 p.
94. Silva F.d. 1580 *La tercera parte de la Coronica del muy excelente principe...* Evora, Portugal, Andres de Burgos.
95. Galharde G. 1545 *Comiença la coronica del valiente y esforçado...* Lisbon, Portugal, German Gallarde.

96. Silva F.d. 1587 *Lisuarte de grecia, libro septimo de Amadis, enel qual se tratã los grandes hechos en armas de Lisuarte de Grecia*. Evora, Portugal, Alfonso Lopez.
97. Silva F.d. 1532 *La cronica de los muy valientes y efforçados y inuencibles caualleros...* Vallodid, Juan de Spinosa.
98. Diaz Tanco V. 1552 *Jardin del alma xpiana do se tracta las significaciones d'la missa y de las horas canonicas y de las nueue ordenes ecclesiasticas*. Valladolid, Spain, Caruajal.
99. Gessner C. 1560 *Icones auium omnium*. Zurich, Switzerland, Excudebat C. Froschouerus; 237 p.