



German Sours

A lost tradition

Introduction

- Germany not known for sour beer
- Old North German styles disappeared
- Replaced by bottom-fermenting styles
- Old styles were:
 - Low ABV
 - Lightly hopped
 - Often contained lactic acid



North German beer production

	Top-fermenting		Bottom-fermenting	
	hl	%	hl	%
1882	7,901,207	36	14,211,973	64
1887	8,503,919	31	18,971,927	69
1892	7,664,889	23	25,498,919	77
1897	7,777,049	19	33,654,123	81
1898	7,566,770	18	34,698,630	82
1899	7,280,851	17	35,925,271	83
1900	7,428,980	17	37,300,826	83
1901	7,322,999	16	37,712,996	84

Source:
Jahresbericht über die Leistungen der chemischen Technologie,
1903 page 446.

Introduction

- Today's talk is in two parts:
 - Modern German sour beers:
 - Berliner Weisse,
 - Lichtenhainer,
 - Gose,
 - Münster Alt
 - Extinct German sour beers:
 - Broyhan,
 - Cottbusser,
 - Adambier



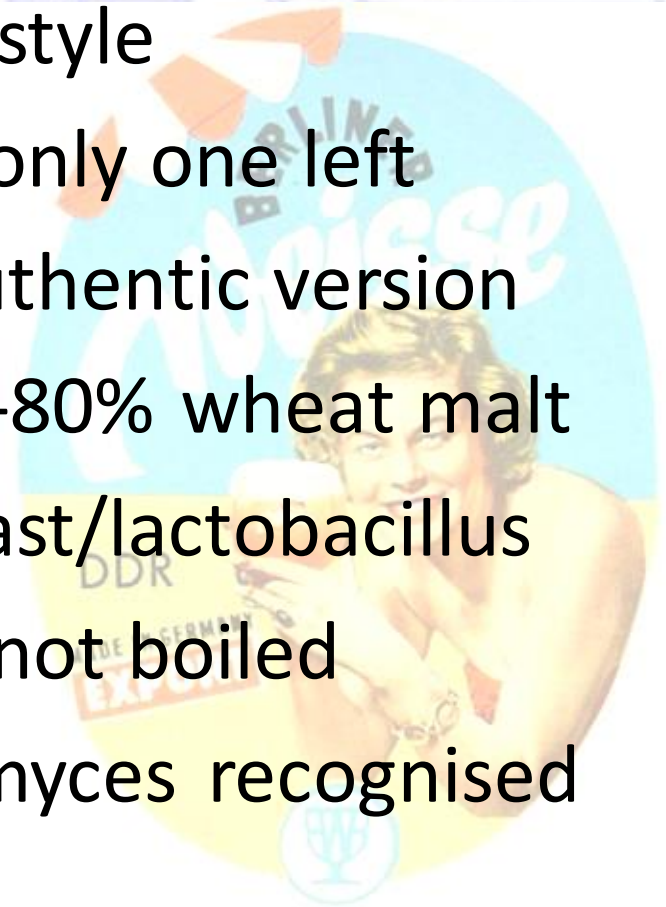
German top-fermenting styles



- Four groups:
 - Low ABV, non-sour, pale beers
 - Cölner, Bremer, Hamburger, Grätzer, Munich Weissbier
 - Low ABV, sour, pale beers
 - Berliner Weissbier, Broyhan, Lichtenhainer, Gose
 - High ABV, sour beers
 - Adambier
 - Low ABV, high gravity beers
 - Braunschweiger Mumme, Danziger Jopenbier

Berliner Weisse today

- Best-known German sour style
- Almost extinct in Berlin – only one left
- Andreas Bogk brews an authentic version
- 8° Plato, 2.5 – 3% ABV, 75-80% wheat malt
- Fermented with mixed yeast/lactobacillus
- Very lightly hopped, wort not boiled
- In 1980's role of *Brettanomyces* recognised



Berliner Weisse

Berliner Weisse

Year	Brewer	Acidity	OG	FG	ABV	App. Attenuation
1850	Unknown	0.85	1032.5	1015.9	2.13	50.12%
1850	Unknown		1037.8	1022.3	1.98	40.00%
1887	Berliner Actien Brauerei	0.363	1022.6	1019.3	1.18	14.21%
1890	Berliner		1051.1	1013.3	4.89	73.95%
1895	Berliner Export Brauerei		1043.5	1009.8	4.40	76.65%
1895	Berliner G		1039.9	1011.4	3.64	70.60%
1895	Unknown		1040.9	1007.1	4.41	81.97%
1898	Unknown		1038.2	1011	3.52	71.20%

Sources:

Wahl & Henius, pages 823-830

Brockhaus' konversations-lexikon, Band 2 by F.A. Brockhaus, 1898

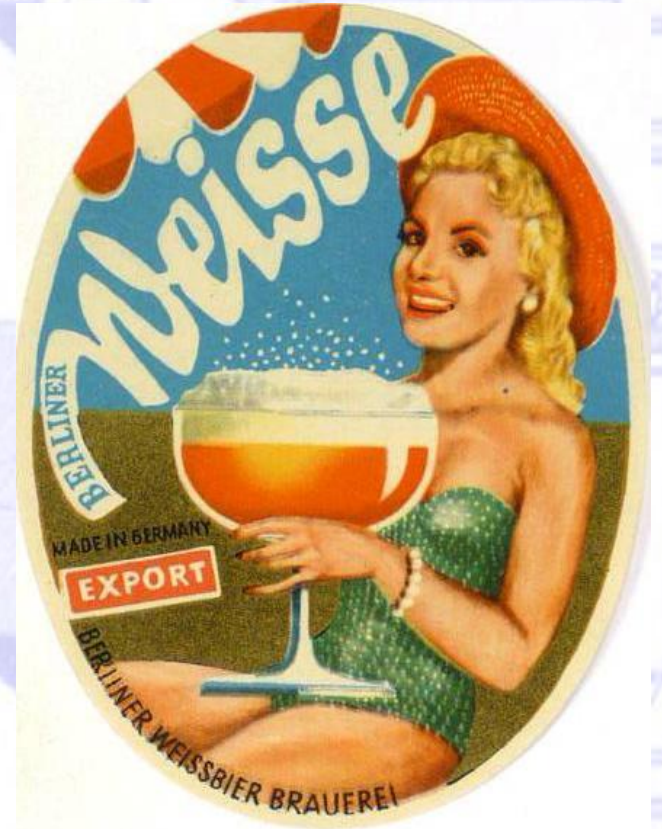
"Archive der Pharmacie", 1855, pages 216-217

Handwörterbuch der reinen und angewandten Chemie by Justus Liebig, Johann Christian Poggendorff, Friedrich Wöhler, 1858, page 1038

"Handbuch der chemischen technologie" by Otto Dammer, Rudolf Kaiser, 1896, pages 696-697

Berliner Weisse history

- Developed from Broyhan
- In 18th C mostly wheat, some oats or barley
- Early 19th C used Cottbus Bitterbier yeast
- Mixed cultures developed around 1840



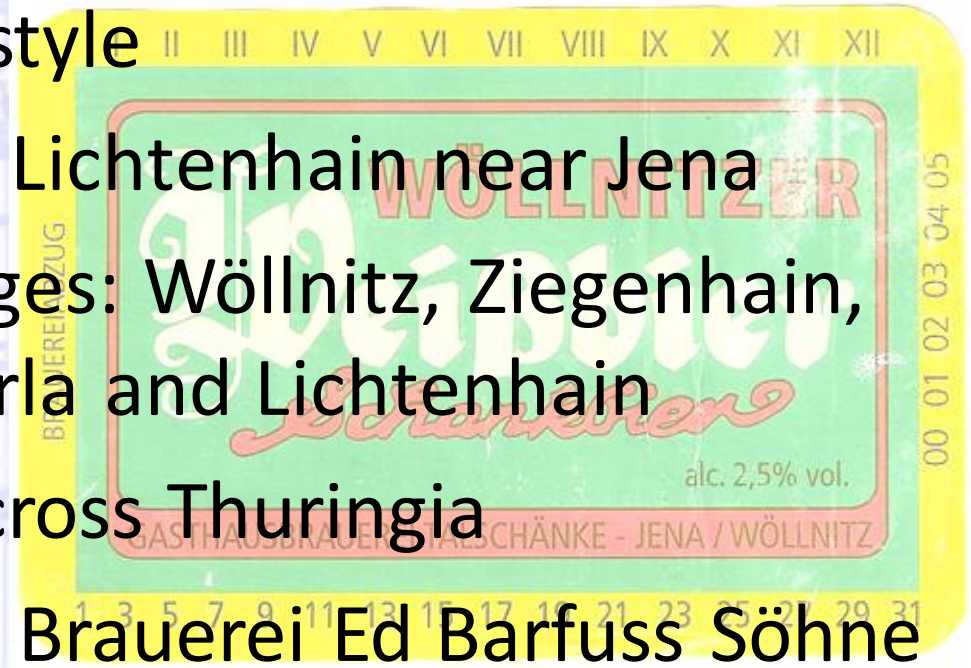
Berliner Weisse history



- Before 1850 sold young: finished and bottled by publicans
- Often watered down at bottling time
- Before 1860 used smoked wheat malt
- 2 constants in 19th Century:
 - Wheat and barley in the grist
 - Wort not boiled
- Separate lactobacillus and yeast fermentations

Lichtenhainer

- A real survivor of a style
- Named after village Lichtenhain near Jena
- First brewed in villages: Wöllnitz, Ziegenhain, Ammerbach, Winzerla and Lichtenhain
- Late 19 C brewed across Thuringia
- 1983 last brewed at Brauerei Ed Barfuss Söhne
- 1997 revived at brewpub in Wöllnitz



Lichtenhainer

Lichtenhainer

Year	Brewer	Acidity	OG	FG	ABV	App. Attenuation
1849	Lichtenhain				3.59	
1886	Lichtenhain	0.238	1036.8	1016.6	3.75	54.10%
1890	Unknown		1043.3	1012.7	3.96	70.66%
1898	Lichtenhain	0.207	1031.2	1007.7	3.04	74.65%
1898	Unknown		1043.0	1012.1	4.00	71.83%

Sources:

"Chemie der menschlichen Nahrungs- und Genussmittel" by Joseph König, 1879, pages 147 - 158

Wahl & Henius, pages 823-830

"Handbuch der chemischen technologie" by Otto Dammer, Rudolf Kaiser, 1896, pages 696-697

Brockhaus' konversations-lexikon, Band 2 by F.A. Brockhaus, 1898

Lichtenhainer characteristics

- Wiessbier – doesn't mean it contained wheat
- 100% barley malt or 33% wheat 67% barley
- Soured either during primary or maturation
- 8° - 10° Plato, 3% - 4% ABV
- lightly hopped (0.5 kg per 100kg malt)
- highly-attenuated, highly-carbonated
- moderately sour

Gose today

- Made by 3 German breweries:
 - Bayerischer Bahnhof,
 - Brauhaus Hartmannsdorf
 - Brauhaus Goslar
- 11° Plato, 4-4.5% ABV
- Wheat malt, barley malt, salt, coriander
- Soured by lactobacillus during primary
- Syrup or a shot often added



Gose in the past

- First brewed in 16th Century in Goslar
- Initially spontaneously fermented
- Later lactobacillus deliberately pitched
- Delivered in barrels to pubs still fermenting
- Bottled in the pub – sealed with plug of yeast
- Matured before drinking
- Some drinkers liked it older



Gose disappears

- By 1900 Rittergutsbrauerei Döllnitz had a virtual monopoly
- Only brewed 7,500 to 10,000 hl a year
- Rationed supply of Gose, only certain pubs allowed to buy it
- Brewery confiscated and closed in 1945
- Last brewer making Gose so style extinct

Gose revival

- 1949 Friedrich Wurzler founded a brewery in Leipzig to brew Gose
- Late 1950s Stepson Guido Pfnister took over
- Closed when Pfnister died in 1966
- 1985 publican Lothar Goldhahn had some made at Schultheiss in Berlin
- 1988 Schultheiss discontinued Gose
- 1991 Goldhahn bought a brewery to make Gose

Gose

Gose

Year	Brewer	Beer	Acidity	OG	FG	ABV	App. Attenuation
1850	Unknown	Quedlinburger Gose	0.85	1044.9	1017.4	3.56	60.25%
1890	Unknown	Goslarsche Gose		1058.0	1020	6.25	65.51%
1898	Unknown	Gose		1055.9	1008.1	6.25	85.50%

Sources:

"Archive der Pharmacie", 1855, pages 216-217

"Handbuch der chemischen technologie" by Otto Dammer, Rudolf Kaiser, 1896, pages 696-697

Brockhaus' konversations-lexikon, Band 2 by F.A. Brockhaus, 1898

Münster Alt

- Münster home to Keut a relative of Kuit
- Replaced in 19th century by Münster Alt
- Blond, lightly hopped
- 11°-12° Plato, 4.5-5% ABV
- Soured during 8-9 months maturation
- Pinkus Müller last brewery to make one
- Not sour any more

Münster Alt

Münster Altbier

Year	Brewer	Beer	Acidity	OG	FG	ABV	App. Attenuation
1883	Appels	Münster Altbier	0.372	1049.3	1005.0	5.56	89.39%
1883	Brüggemann	Münster Altbier	0.444	1051.0	1011.6	4.84	76.32%

Source:

Wahl & Henius, pages 823-830

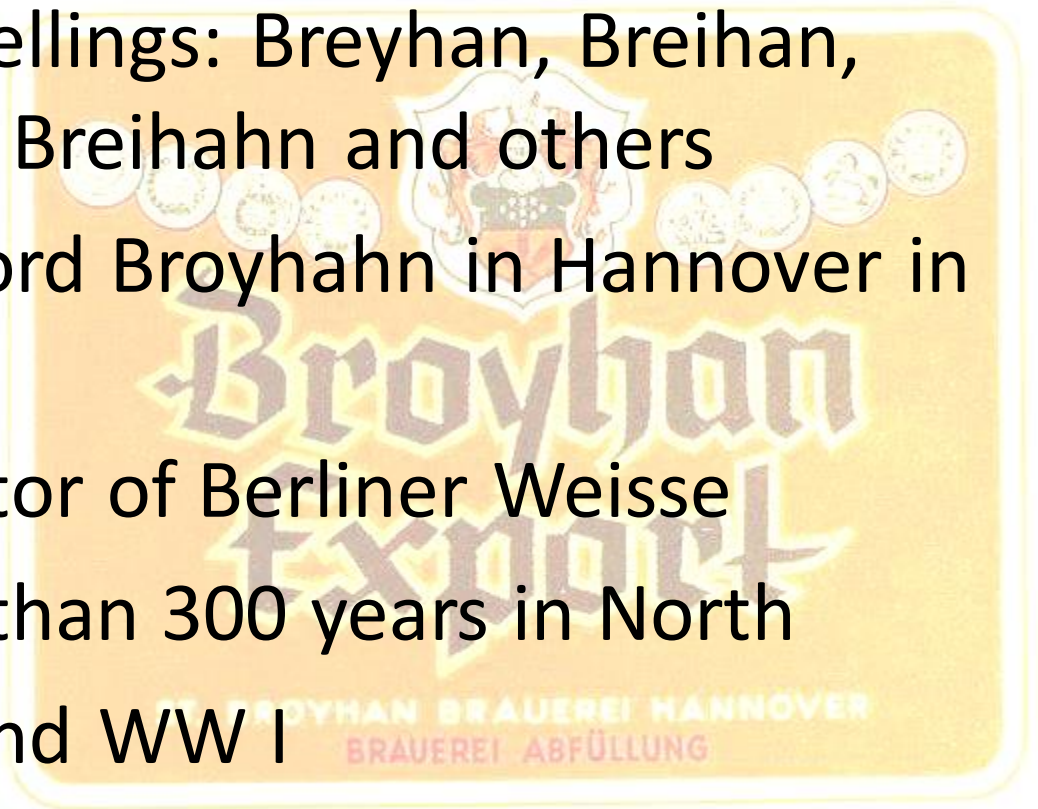
Deutsches Porter



- Description of Porter with *Brettanomyces* secondary in "Leitfaden Für den Brauer und Mälzer" by Rudolf Dickscheit, Leipzig, 1953
- An ideal not how Porter *was* brewed in DDR
- I helped Freigeist brew a version
- Turned out extremely sour
- Not to everyone's taste

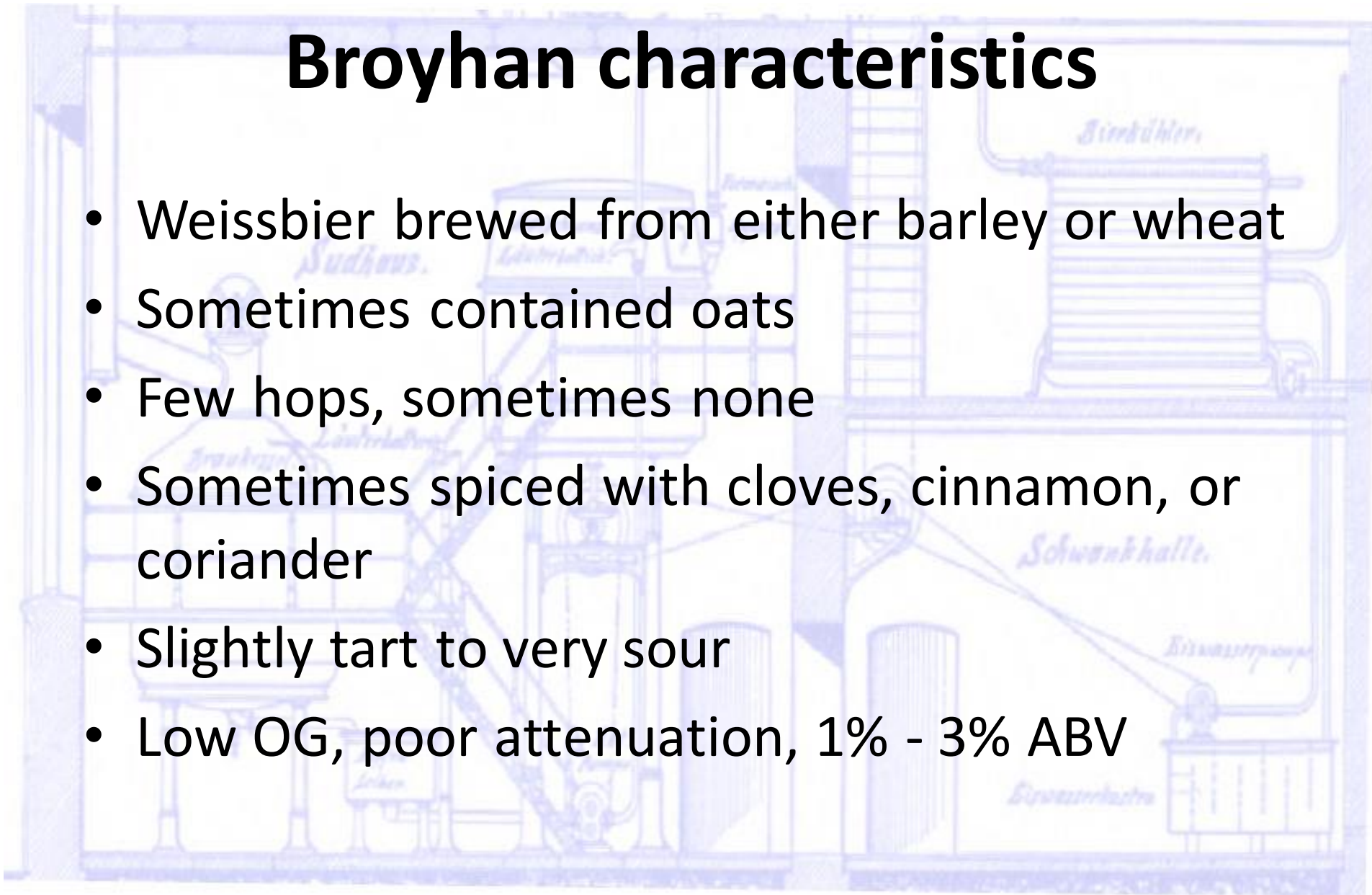
Broyhan

- Many different spellings: Breyhan, Breihan, Broihan, Breyhan, Breihahn and others
- First brewed by Cord Broyhahn in Hannover in 1526
- Thought an ancestor of Berliner Weisse
- Popular for more than 300 years in North
- Disappeared around WW I



Broyhan characteristics

- Weissbier brewed from either barley or wheat
- Sometimes contained oats
- Few hops, sometimes none
- Sometimes spiced with cloves, cinnamon, or coriander
- Slightly tart to very sour
- Low OG, poor attenuation, 1% - 3% ABV



Broyhan

Broyhan

Year	Brewer	Beer	Acidity	OG	FG	ABV	App. Attenuation
1850	Unknown	Halberstädter Breyhan	1.29	1034.7	1012.7	2.84	62.59%
1884	Hannover, Städtisch	Einfacher Broyhan	0.158	1031.4	1022.5	1.03	27.67%
1884	Hannover, Städtisch	Doppelter Broyhan	0.06	1053.4	1043.6	1.20	17.55%

Source:

“Archive der Pharmacie”, 1855, pages 216-217

Wahl & Henius, pages 823-830

Cottbusser

- Came from Silesian town of Cottbus
- Weissbier – usually contained wheat malt
- Also oats and honey
- Low OG 7° – 8° Plato, 2% - 2.5% ABV
- Very lightly hopped, extremely sour
- Soured during primary by lactobacillus in kit
- Disappeared around 1900

Cottbusser

Cottbusser

Year	Brewer	Beer	Acidity	OG	FG	ABV	App. Attenuation	
1850	Unknown	Cottbuser Bier		1.11	1025.6	1009.2	2.12	63.50%

Source:

“Archive der Pharmacie”, 1855, pages 216-217

Adambier

- Beer brewed in Dortmund before Lager
- Soured during long secondary fermentation
- Brown, 18° Plato, 9% ABV, highly-attenuated
- Heavily hopped
- High lactic acid, low dextrin content
- Had a Porter-like taste
- Picking up *Brettanomyces* from barrels?
- Revived by 2 US breweries and 1 German

Adambier

Dortmunder Adambier

Year	Brewer	Beer	Acidity	OG	FG	ABV	App. Attenuation
1889	Dortmunder	Adambier	0.62	1074.6	1000.9	9.23	98.73%
1897	Dortmunder	33 years old	0.36	1112.0	1041.9	9.19	60.23%
1898	Unknown	Adambier		1071.0	1001.3	9.23	98.17%

Sources:

Wahl & Henius, pages 823-830

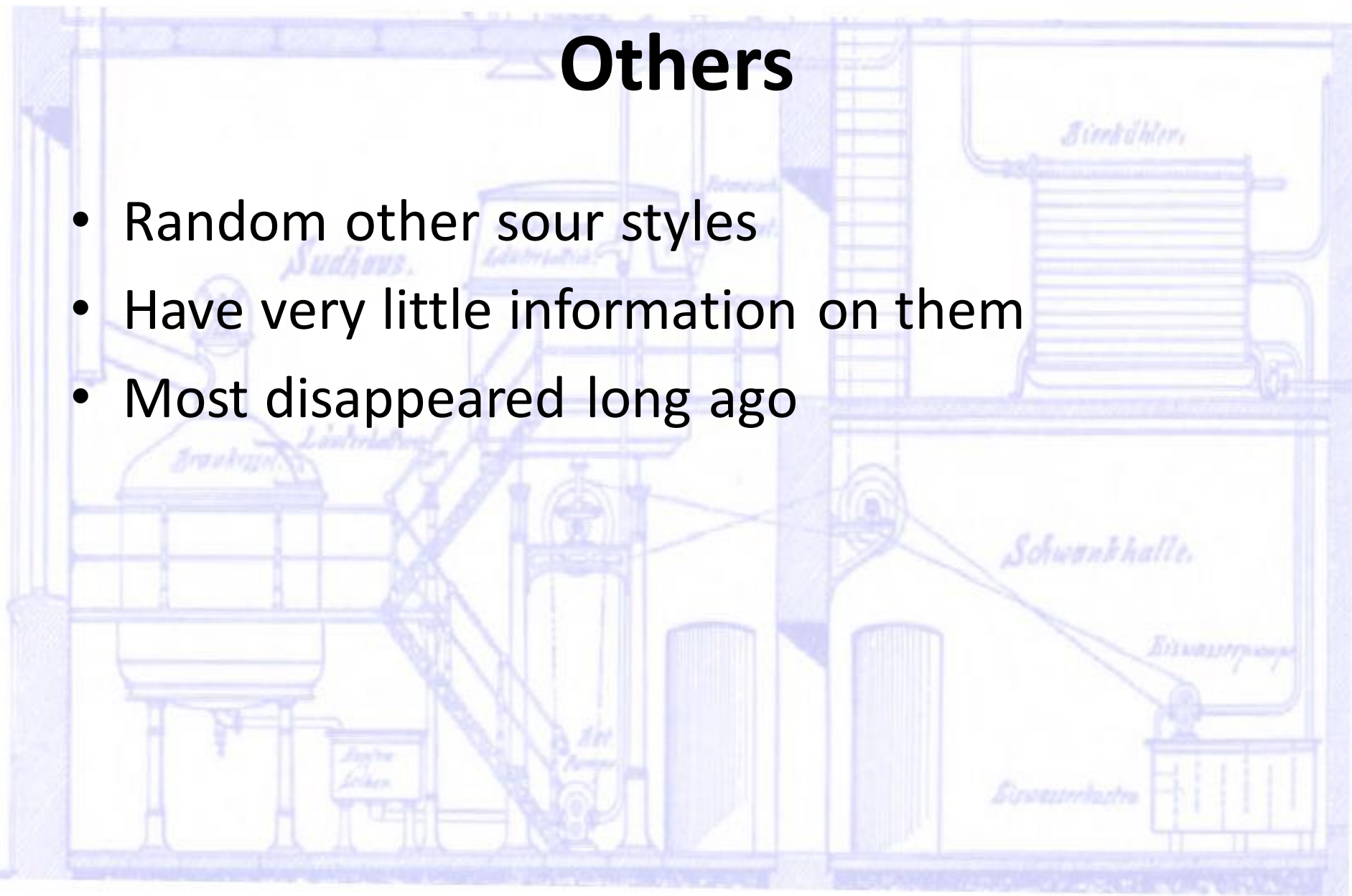
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Malzwein

- A rare strong sour beer
- Left to sour at 50° C after mashing
- 14° Plato but sugar additions made it effectively 30°-40° Plato, 13% ABV
- Fermented with pure wine yeast
- Matured for a long time
- Acquired a Tokay-like dessert wine flavour

Others

- Random other sour styles
- Have very little information on them
- Most disappeared long ago



Berlin area beers

Berlin area beers

Year	Brewer	Beer	Acidity	OG	FG	ABV	App. Attenuation
1850	Unknown	Bernauer Bier	0.51	1043.8	1021.7	2.84	49.41%
1850	Unknown	Ruppiner Bier	0.77	1039.8	1017.8	2.84	54.35%
1850	Unknown	Crossener Bier	0.85	1037.1	1015.0	2.84	58.58%
1850	Unknown	Carthäuser Bier	1.07	1029.8	1010.6	2.49	63.89%
1850	Unknown	Brandenburgisch Bier	0.34	1036.5	1022.6	1.77	37.15%

Source:

“Archive der Pharmacie”, 1855, pages 216-217

Berlin area beers

- Like a list of popular styles over time
- < 1750 Bernauer Bier most popular
- 1750 – 1800 Ruppiner Bier most popular
- > 1800 Brandenburg Broyhan pushed out Crossener and Carthäuser
- Ruppiner beer made from barley, malty, lightly hopped and pale red
- Carthäuser was similar to Broyhan

Braunbier

Braunbier

Year	Brewer	Beer	Acidity	OG	FG	ABV	App. Attenuation
1850	Freundes	Braunbier	0.43	1056.9	1036.6	2.60	34.57%
1850	Unknown	Werder'sches Braunbier		1030.4	1012.0	2.37	59.74%
1850	Unknown	Berliner Braunbier	0.51	1058.1	1041.4	2.12	27.63%
1850	Unknown	Cöpenicker Moll	1.19	1033.7	1022.5	1.43	32.35%

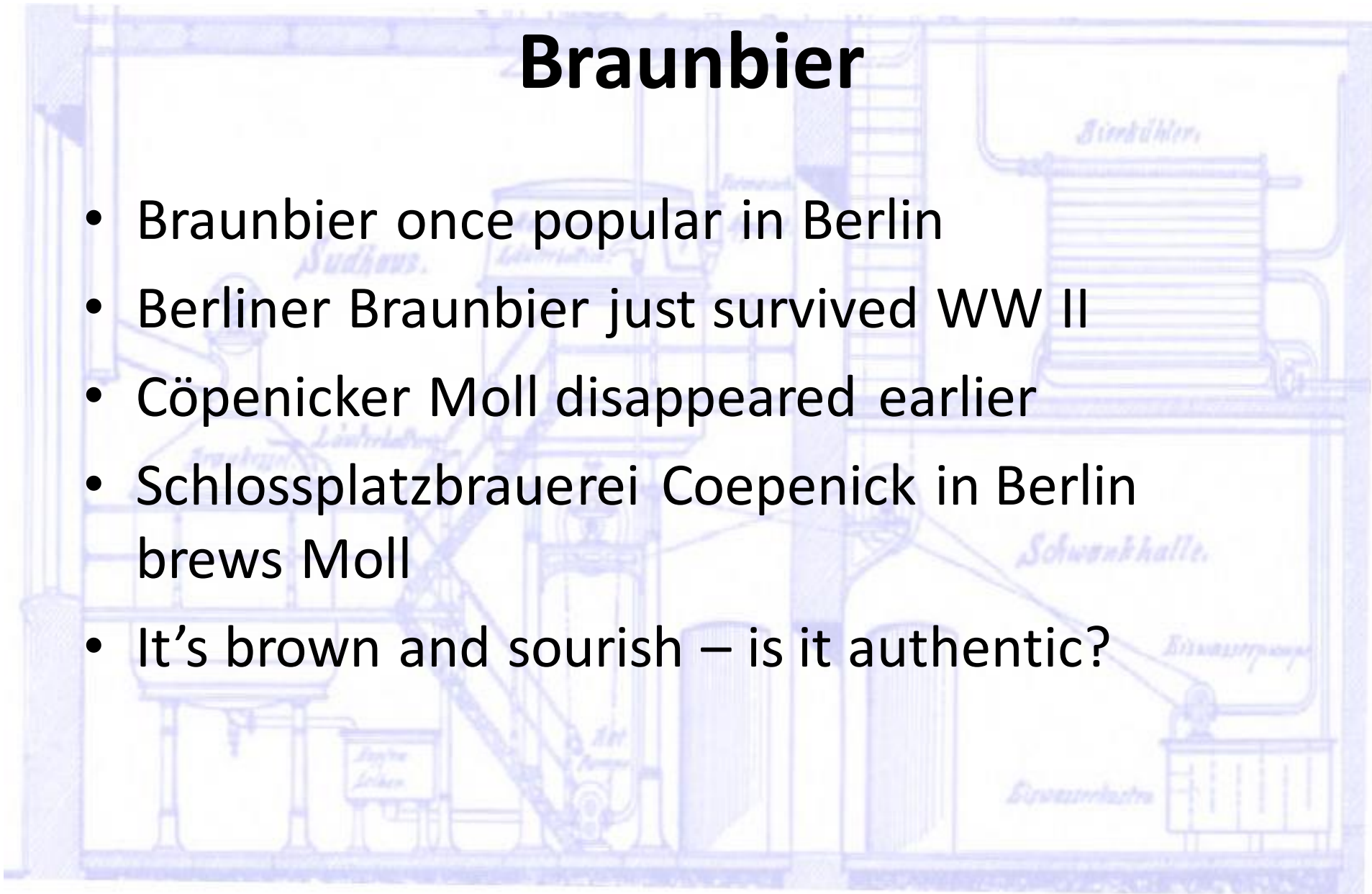
Sources:

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“Archive der Pharmacie”, 1855, pages 216-217

Braunbier

- Braunbier once popular in Berlin
- Berliner Braunbier just survived WW II
- Cöpenicker Moll disappeared earlier
- Schlossplatzbrauerei Coepenick in Berlin brews Moll
- It's brown and sourish – is it authentic?



Others

Others

Year	Brewer	Beer	Acidity	OG	FG	ABV	App. Attenuation
1850	Unknown	Lebuser Bier	1.19	1039.4	1025.5	1.77	34.31%
1850	Unknown	Roden'sche Speise-Bier	0.51	1040.6	1029.4	1.42	26.72%
1850	Unknown	Speise-Bier	0.51	1038.3	1029.9	1.06	21.21%
1890	Löwenbrauerei Hamburg	Braunbier	0.297	1029.9	1015.5	1.85	48.24%
1884	Hamburger Weissbier	Weissbier	0.578	1032.9	1009.5	2.98	70.48%

Sources:

"Archive der Pharmacie", 1855, pages 216-217

Wahl & Henius, pages 823-830

"Handbuch der chemischen technologie" by Otto Dammer, Rudolf Kaiser, 1896, pages 696-697

Questions?

