

5. Computers and Social History: building a database from medieval tax-registers for improved information retrieval in Göttingen

Helge Steenweg

Gesellschaft für wissenschaftliche, Datenverarbeitung mbH, Am Faßberg, D-3400 Göttingen, Germany.

This article presents a project which seeks to reconstruct the social structure and social topography in a German town (Göttingen in Lower Saxony) in the 14th and early 15th centuries. It is based on computerized record linkage and connects social and economic data from serial sources. Although the article is chiefly historical the methodological problems and results will, I hope, also be of interest to archaeologists.

The following explanation will be divided into two parts. In the first the problems which occurred by evaluating the serial sources and the possibilities of social-topographical examination will be described and illustrated. A second part will be concerned with the opportunities which appeared by using the database for excavations of house-plots in Göttingen.

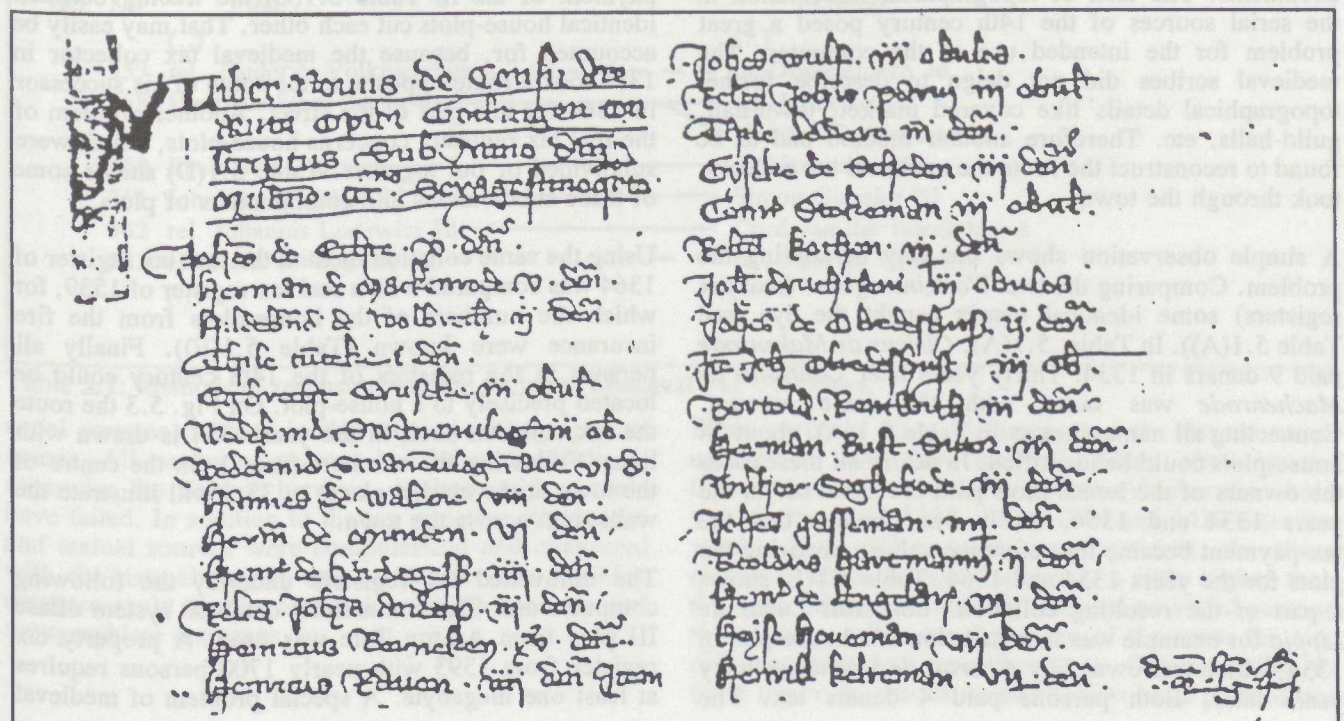
Before describing the building of the database it may be necessary to give a short description of the field of research I am representing. Social topography tries to describe social classes in restricted areas. In spite of the growing interest in social history, observations of medieval towns in Germany are almost entirely lacking. In addition to that of often missing serial sources, another great problem of existing studies — mostly for early modern and modern times — consisted of finding the exact residence of urban population. In most cases the authors of these articles or books could only say, for example that Mr. John Smith lived in the district or quarter of XYZ; or in luckier cases, that he lived in such-and-such street in the district XYZ of the town in question.

In Göttingen, in which nearly 6000 souls were living in the year 1400, it is possible to locate each taxpayer in the years 1334, 1364 and 1393 precisely to a house-plot, because the route the tax-collectors took through the medieval town could be reconstructed with the help of the computer. Locating medieval house-plots all over a whole town with that degree of accuracy is, in Germany, at present only practical in Göttingen. In a comparable project in Lubeck single house-owners but not inmates could be named; a project in Cologne for the 13th century was stopped.

What were the conditions before the project started? The medieval tradition of historical documents and architectural relics in Göttingen is good compared with other towns in Germany.

From the 14th century two real tax registers from 1334 and 1364, the so called *Wortzinsregister*, and a property tax register from the year 1393, which was named *Schoßregister*, have come down to our time. (Figs. 5.1 and 5.2 are examples of the two kinds of documents). Since 1412 the property tax registers were transmitted year by year with the exception of only a few years. From this time on the information these registers contain was so detailed that Mr. H. Kelterborn produced a handwritten house-book-manuscript within 30 years without the help of a computer. Starting from the first fire insurance register in the middle of the 19th century he filled up his house-book with the names of every inmate of the nearly one thousand house-plots in Göttingen, going backwards year by year, until he reached the tax register of the year 1412.

Figure 5.1: Part of a real tax register (*Wortzinsregister*) 1364, Sp.3a/3b. (Stadtarchiv Göttingen, Ms.11.0).



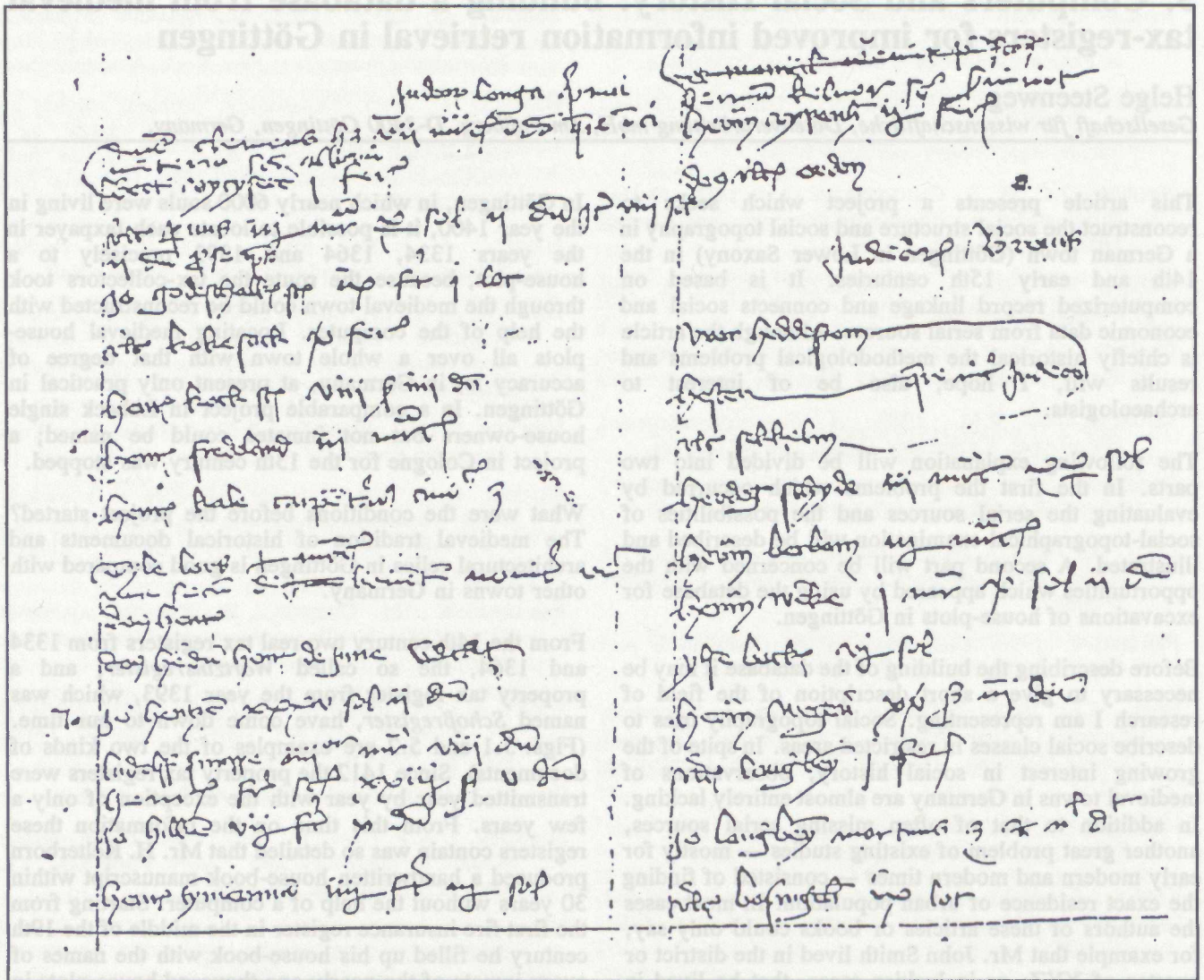


Figure 5.2: Part of a property tax register (Schofregister) 1413/14, Sp. 37/38 (Stadtarchiv Gottingen, Schofregister 1413/14).

At this point he stopped his work, because the structure of the 14th century registers differed from the other documents. The lack of topographical information in the serial sources of the 14th century posed a great problem for the intended use of the computer. The medieval scribes did not deign to describe further topographical details like covered market, town-hall, guild-halls, etc. Therefore another method had to be found to reconstruct the route the medieval tax collector took through the town.

A simple observation shows the way of solving the problem. Comparing the two *Wortzinsregister* (real tax registers) some identical names caught the eye (see Table 5.1(A)). In Table 5.1(A), *Olicrus de Makenrode* paid 9 denars in 1334. Thirty years later *Conradus de Machenrode* was taxed with the same amount. Connecting all namesakes as in Table 5.1(A), about 54 house-plots could be identified. In nearly all these cases the owners of the house-plots paid the same tax in the years 1334 and 1364. So it was obvious that the tax-payment became the reference value comparing the plots for the years 1334 and 1364. Table 5.1(B) shows a part of the resulting collation. *Conradus Lucus de Lippia* for example was in possession of a house-plot in 1334, which was owned by *Albertus de Stochusen* thirty years later. Both persons paid 4 denars tax. The

collation did not go smoothly. Sometimes changes were made in the sequence of plots. If we compare the payment of tax in Table 5.1(C) the tracing between identical house-plots cut each other. That may easily be accounted for, because the medieval tax collector in 1334 took a route opposite to the route of his successor in 1364 for this part of the street. Another problem of the real tax registers concerns house-plots, which were subdivided or put together. Table 5.1(D) shows some of these subdivisions and combinations of plots.

Using the same collation method the real tax register of 1364 was compared with a real tax register of 1539, for which the numbers of the house-plots from the fire insurance were known (Table 5.1(E)). Finally all persons in the registers of the 14th century could be located precisely to a house-plot. On Fig. 5.3 the route the tax collector took in the year 1334 is drawn with lines. Following the numbers from 1 (in the centre of the town at the market place) to 33.3 will illustrate the walk right across the town.

The unravelled tax registers underlay the following computer use. The commercial database system dBase III plus from Ashton Tate was used. A property tax register from 1393 with nearly 1700 persons requires at least one megabyte. A special problem of medieval

(A).	1334		1364
	(..)		(..)
	Olricus de Makenrode 9d	—————	Conradus de Machenrode 9d
	Conradus Lewere 3d		Bertoldus Pictor 3d
	Herwicus Ruffus 6d		Johannes de Colle 6d
	Hardmanus Tymmerman 3d	—————	Hartmannus Tymmerman 3d
	Hermann Stote 3d		Thilo de Dransvelde 3d
	Johannes et Hermanus Gyseleri 9d	—————	Gyselerus, filius Johannis 9d
	(..)		(..)
(B).	1334		1364
	(..)		(..)
	Conradus Luscus de Lippia 4d	—————	Albertus de Stochusen 4d
	pueri Henrici de Vredeland 7.5d	—————	Johannes Klingebyl 7.5d
	Thilo Clingebil 4.5d	—————	Henricus Grope sartor 4.5d
	Hermann Advocatisse 7d	—————	Gyseler de Munden 7d
	(..)		(..)
(C).	1334		1364
	(..)		(..)
	pueri de Ludolpheshusen 8d	—————	relicta Hermani Haken 1s
	Henricus de Barke 4d	—————	Vroling de Barke 4d
	pueri Bertoldi de Ludolpheshusen 1s	—————	Conradus de Novali 8d
	(..)		(..)
(D).	1334		1364
	(..)		(..)
	domina Cleynehegeres 3ob	—————	conventus bagutarum 3ob
	Johannes de Geysmaria 3d	—————	Henningus de Vermelsen 2d
	Henricus Roysteyn 3d	—————	Conradus Wedel 1d
			Conradus de Reynhusen 3d
	Ghodfridus de Suthem 6d	—————	Henricus de Grevelsen 3d
	Gertrudis Wedeghen 3.5d	—————	Johannes Sulverclot 3d
	Hardmannus Tymmerman 1d	—————	Helmbertus Wedgehonis 4.5d
	Bertoldus de Marthageshusen 2d	—————	Johannes de Novali 2d
	(..)		(..)
(E).	No. 1364		1539/40
	(..)		(..)
	357 rel. Thiderici Volkmershusen 7.5d	-----	de Dransfeldeze 3d
	358 Henricus Store 3d	—————	de Helmenze 2d
	359		Henrick Oppermans 1d
	360 Ebele Wulf 4d	—————	de Hartmenze 4d
	361 Johannes Gyseleri 9d	—————	Simon Gisseler 9d
	362 rel. Johannis Lodewici 3d	—————	Cord van der Borch hus d
	363 Henricus de Wakene 6d	-----	rel. Henrick Gisselers d
	(..)		(..)

Table 5.1: Methods of reconstructing the routes of Medieval Tax Collectors.

serial sources consists in the missing orthography of names. All names of persons had been standardised, otherwise the linkage between database tables would have failed. In addition to the tax registers other serial and textual sources were computerized and connected with the data about tax and residence. The resulting database could then be used to investigate further social topographical questions.

First, criteria for different social classes were established and then mapped. Maps showing the distribution of poor and rich households over the whole town in the years 1334, 1364, 1393 and 1412 were the result. The differentiation was evident. In those districts, which lie geographically a little higher than the other, almost exclusively rich and powerful persons were living, while on the edges of the town the less rich taxpayers had their dwellings. Corresponding to these historical results archaeologists have pointed out

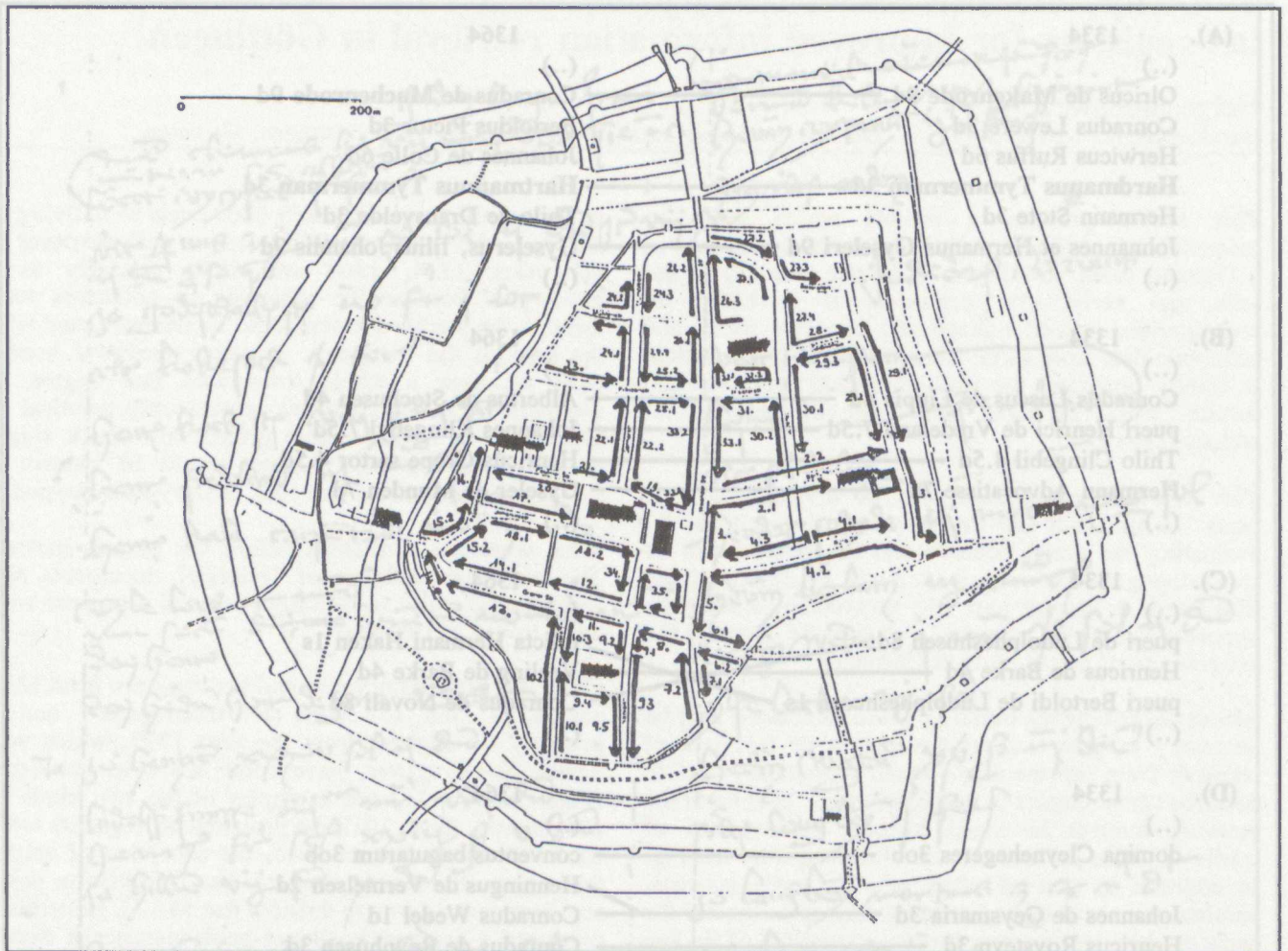


Figure 5.3: The route taken by the tax collector in 1334.

that the districts with the rich households all lie above the water-level at that time of the river Leine, which runs through Göttingen. For the year 1412 it was also possible to map the professions of the taxpayers. About 720 (42%) of the 1703 persons in the tax register were identified with a profession. (see Figs. 5.4–5.7) The maps show a huge concentration of wool-weavers (*wullenwever* or *lanifices*, Fig. 5.4) living in the so-called 'Neustadt', a suburban settlement of the 13th century, probably because the river Leine ran nearby. The wool-weavers need the water for washing the wool, bleaching and perhaps dyeing the woollen-cloth. On the other side of the river towards the centre of the town, the shoemakers (*scomeker* or *sutores*, Fig. 5.5) also lived near one another, mainly concentrated along the main arteries, the Groner and the Weender street. The butchers (*knokenhauer* or *carnifices*, Fig. 5.6) had their homes in the Nikolai-district to the south. No such concentration could be found for the other craft-guilds, such as merchants (*koplude* or *mercatores*), bakers (*becker* or *pistores*, Fig. 5.7) and linen-weavers (*linenwever* or *linifices*). Further questions about the coherence between social rank and wealth in the 14th and early 15th centuries could be examined with the help of this database.

In addition to the maps already made, the database will also enable us to get information about the people formerly living in any particular district of Göttingen, which may be explored archaeologically in the future.

An archaeological excavation of a plot in the Johannisstreet in Göttingen in the years 1984/85 may serve as an example for the possibilities, which resulted from the use of historical information about the background of the 14th and early 15th century inhabitants of that plot.

According to the building-plan of the planning authorities the house was carefully modified, that is to say only the wooden beams remained from the half-timber house. So the building structure could be studied and the archaeologists had time to explore the house plot. In Fig. 5.8 the reconstructed front and the floor plan of the building are illustrated. Obviously the three-storied half-timber house with the great entrance is recognizable. This is typical of a medieval house in Göttingen. Passing the entrance one entered the so-called *Diele*, a great room, which reached over two floors from the ground-floor to the second floor. The rooms close by served as working or office rooms. All over the intermediate floor the family of the occupant lived in a confined space, which could be decorated like the house in the Johannisstreet number 27. The jutting out third floor was often used as a store. On the roof the so-called nun-and-monk-tiles kept out rain and storm. We have only a little information about the interior accommodation of the rooms. About 30 inventories and 25 testaments before the year 1600 were deposited in the town record office (archive) of Göttingen, but so far none of them fits with an

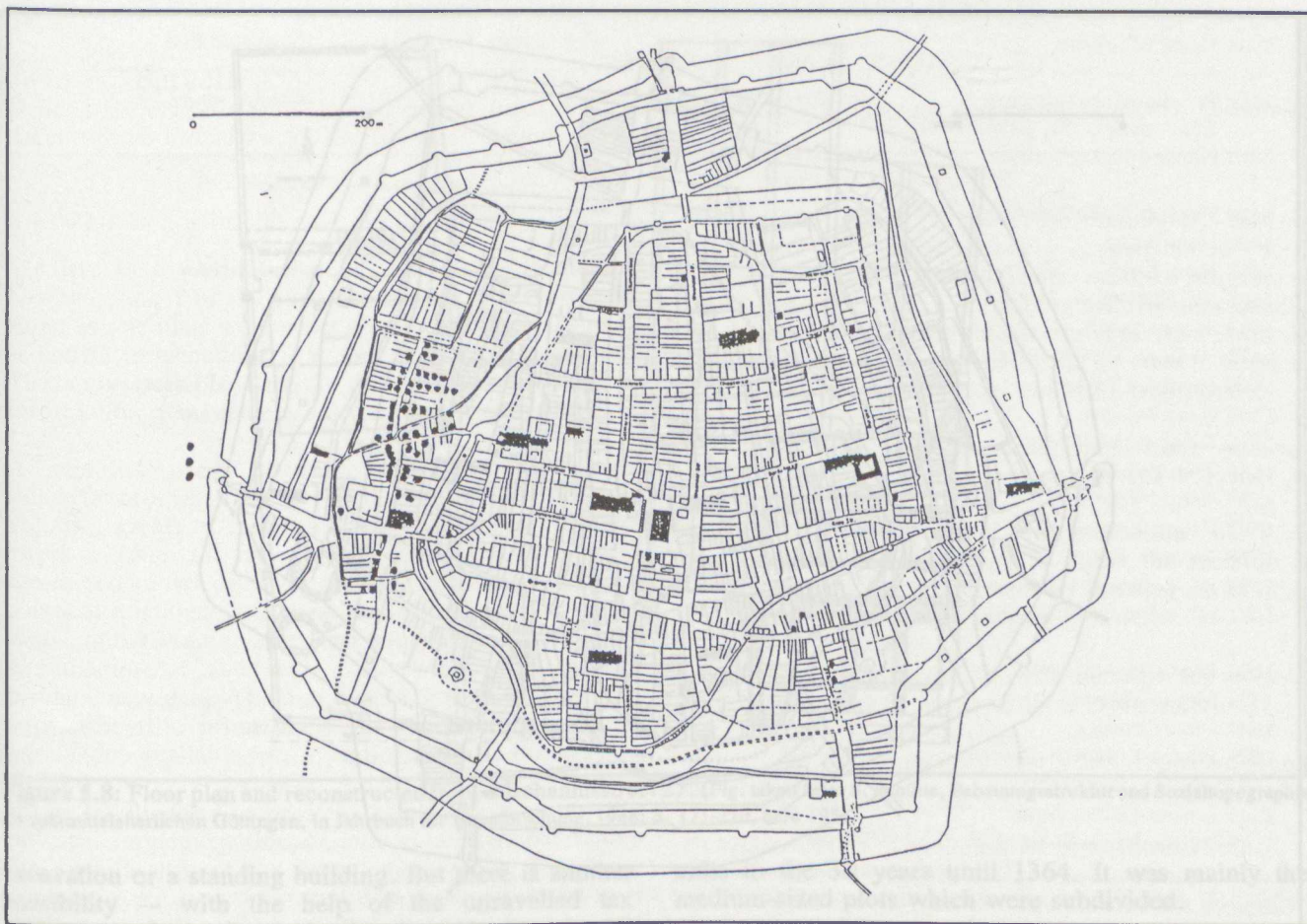


Figure 5.4: Households of wool-weavers in 1413.

Figure 5.5: Households of shoemakers in 1413.





Figure 5.6: Households of butchers in 1413.

Figure 5.7: Households of bakers in 1413.



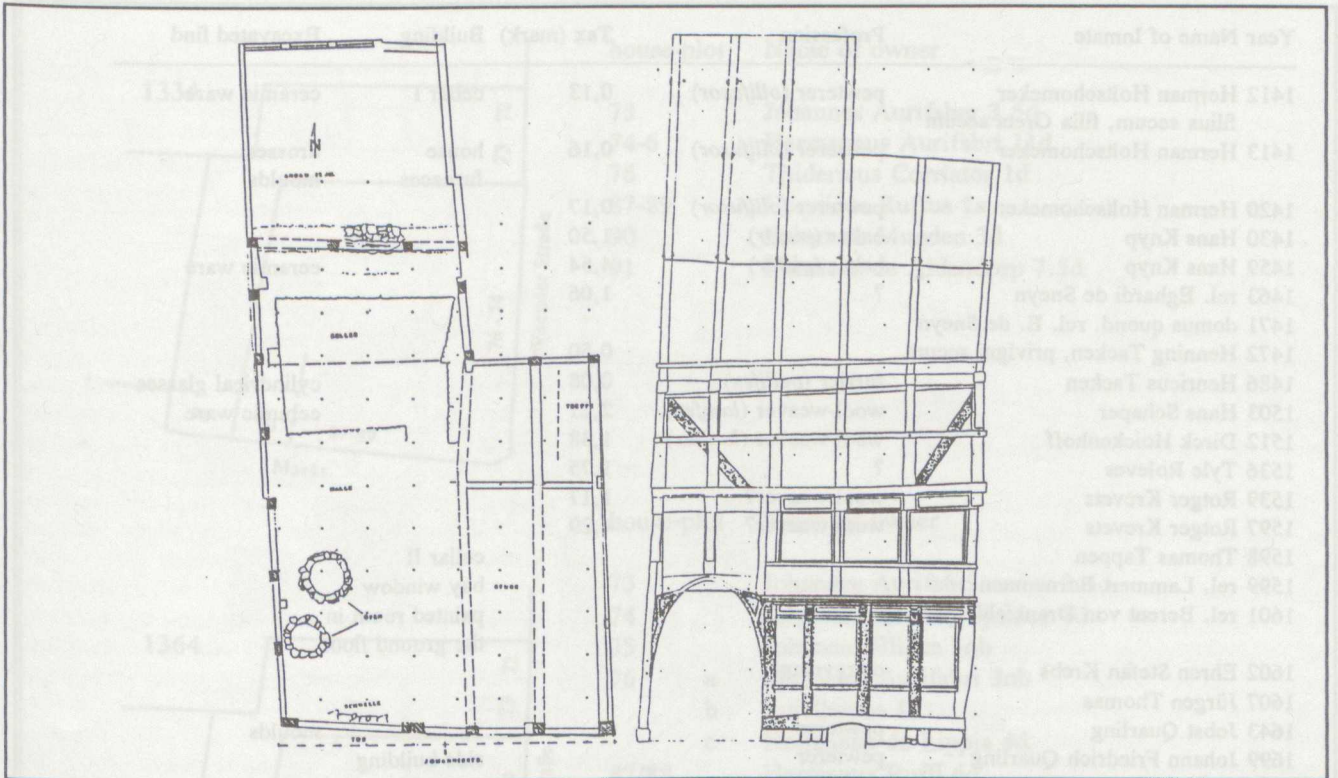


Figure 5.8: Floor plan and reconstructed front of Johannisstreet 27. (Fig. taken from S. Schütte, *Bebauungsstruktur und Sozialtopographie im spätmittelalterlichen Göttingen*, in *Jahrbuch für Hausforschung*, 1988: S. 171-220, here 195).

excavation or a standing building. But there is another possibility — with the help of the unravelled tax registers and the house-book-manuscript nearly all inhabitants of this house could be identified. The dendrochronological (tree ring dating) result suggests that the examined house was built in the year 1413 or thereabouts. The archaeologists also found relics of furnaces with drosses and moulds, which were dated from the beginning of the 15th century. Additional historical information makes the background clear (Table. 5.2). *Herman Holtschomeker* lived in the year 1412 with his family (at least 2 children above 16 years and of course his wife) on this excavated house plot. It is pretty safe to say that he was the builder of this house, although the documents only state that he occupied the house to this time. Because he was known as a pewterer (*ollifusor*), he might have used the excavated furnaces.

The taxability of some inmates is interesting. The house-builder, *Herman Holtschomeker* for example, was taxed only a little bit more 18 years later, while his successor, the baker *Hans Knyp*, tripled his fortune within 30 years. This process repeats a second time with *Rotger Krevets*, possibly a wool-weaver, from 1539 to 1597.

It is also seen that mostly pewterers and wool-weavers lived in this house — perhaps a continuity by profession?

Another possible use of the database is to observe the changes which have taken place in the course of time in the boundaries of the house-plots. Between 1334 and 1364 these changes could be exactly localized. Of a total of 453 plots in the year 1334 in all 36 were subdivided, whereas only 8 were combined into larger

units in the 30 years until 1364. It was mainly the medium-sized plots which were subdivided.

A reconstruction of a house-plot at the corner Market/Weender-street shows the subdivision of a large plot over 30 years (Fig. 5.9). Looking at the plot-numbers from 74 to 76 and from 87 to 89 for example, radical changes are visible. The great house-plot of *Herwicus Ruffus* (number 87–89) in front of the market was divided into 5 parts. Only half the plot remained in the ownership of the family *Rode* (= *Ruffus*). A similar development took place with the area of *Hermannus Aurifaber* and *Thidericus Corriator* (number 74–76). This house-plot was also divided in 5 parts while again only half the plot remained to members of the family *Aurifaber*. Compared with the state of the same plot in the year 1862, the year the first official town map appeared, it is evident that the boundaries of the years 1364 and 1862 do not match. The broken lines in the pictures indicate rather great differences. So it seemed impossible to transfer the first officially measured boundaries of the 19th century to the middle ages in Göttingen, but the original distribution of plots, extracted from the serial sources, correspond to the archaeological map of cellars (Fig. 5.10). On the house-plots 290–293 in the Red street a single house takes up the place of 4 medieval house plots. According to the historical sources the cellar register indicates that there were 3 formerly separated cellars (numbers 291–293) covered with a barrel vault. The result of this part of discussion is as follows: A cellar-register, which locates the medieval cellars in a town is by far a more accurate aid for locating the medieval boundaries of house-plots than the first official map.

Year	Name of Inmate	Profession	Tax (mark)	Building	Excavated find
1412	Herman Holtschomeker filius secum, filia Greta secum	pewterer (<i>ollifusor</i>)	0,13	cellar I	ceramic ware
1413	Herman Holtschomeker	pewtèrer (<i>ollifusor</i>)	0,16	house furnaces	drosses moulds
1420	Herman Holtschomeker	pewterer (<i>ollifusor</i>)	0,17		
1430	Hans Knypp	baker (<i>pistor</i>)	1,50		
1459	Hans Knypp	baker (<i>pistor</i>)	4,54		ceramic ware
1463	rel. Eghardi de Sney	?	1,06		
1471	domus quond. rel. E. de Sney				
1472	Henning Tacken, privigni secum		0,50		
1486	Henricus Tacken	furrier (<i>pellifex</i>)	0,08		cylindrical glasses
1503	Hans Schaper	wool-weaver (<i>lanifex</i>)	2,21		ceramic ware
1512	Dirck Hoickenhoff	wool-weaver (<i>lanifex</i>)	1,38		
1536	Tyle Roleves	?	1,75		
1539	Rotger Krevets	wool-weaver?	1,17		
1597	Rotger Krevets	wool-weaver?	4,29		
1598	Thomas Tappen			cellar II	
1599	rel. Lammert Bornemann			bay window	
1601	rel. Berent von Dransfeld			cellar II painted room in the ground floor	
1602	Ehren Stefan Krebs	clergyman?			
1607	Jürgen Thomas				
1643	Jobst Quarling	pewterer			moulds
1699	Johann Friedrich Quarling	pewterer		side-building	
1737	rel. Joh. F. Quarling				drosses
1745	Johann Christ. Apels				relics of metal, glasses
1748	Johann Barthold Isengart	cooper			hoops

Table 5.2: Additional historical information regarding the site of Johannistreer No. 27.

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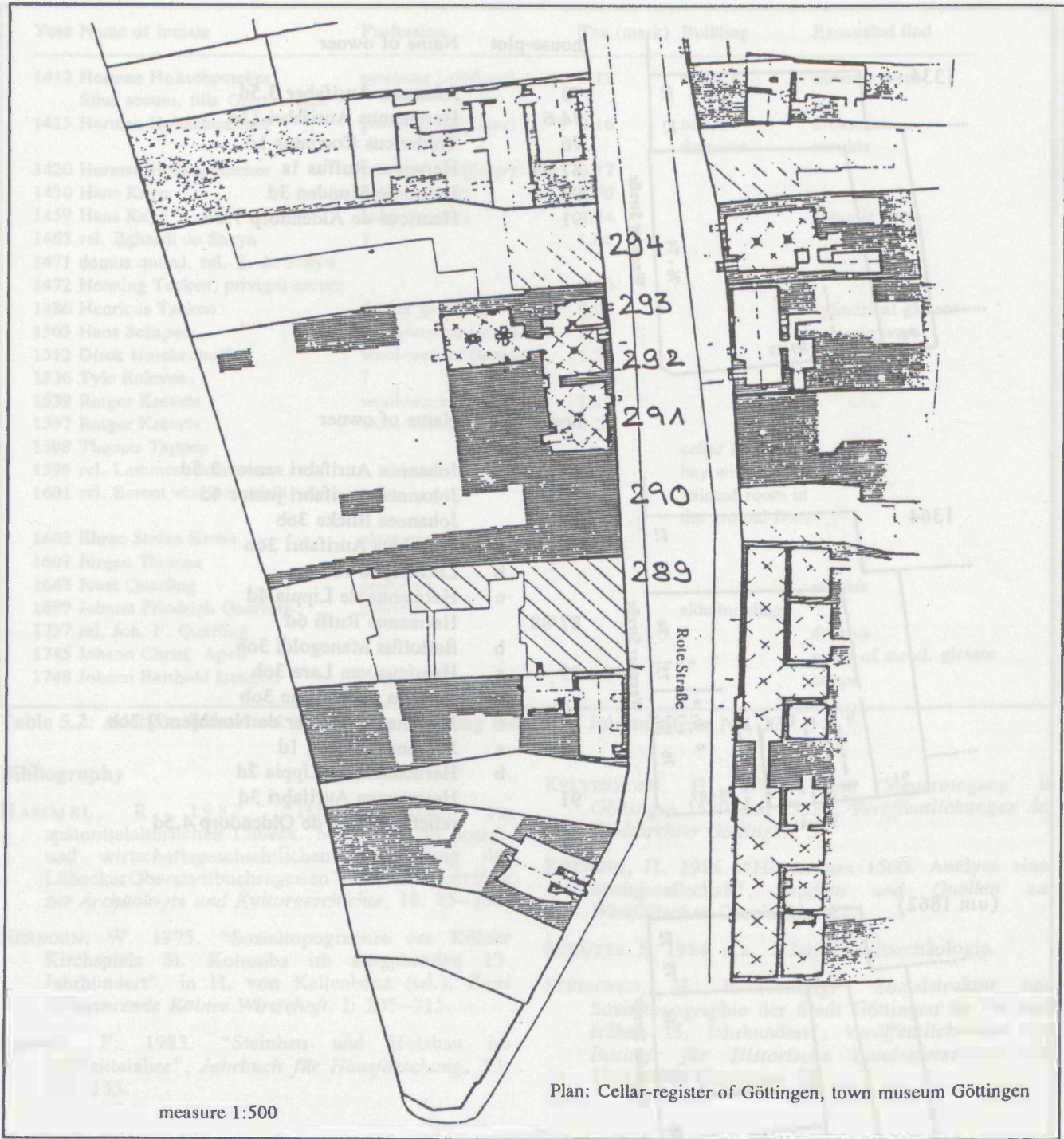


Figure 5.10: Extract from the cellar-register (Rote Straße).