THE STREETS OF MEDIEVAL WROCŁAW
SUMMARY

I. INTRODUCTION

The principal aim of the present study is to reconstruct the environment and changes in the functioning of the streets of medieval Wrocław, understood as an element of urban public space. An attempt was made to gain a better understanding of the natural and human topography of the development of the street plan, road building techniques, methods of keeping the street surface in a suitable technical and sanitary condition and to determine the status of communication within the town. The main body of evidence relevant to the project was secured in the course of excavation made in a number of streets in the historic district of Wrocław (the Old Town) mostly in Kiełbaśnicza, Szewska and Wita Stwosza streets. The cultur deposit in these streets retained both the traces from road building and maintenance as well as a rich assortment of small finds. Results of their analysis illustrate the character of the urban public space. The method adopted in the study assumed integrated action by representatives of several research disciplines who used their specific methods of inquiry to enrich and cross-check the end result emerging from their combined efforts.

J.P.

II. THE GEOMORPHOLOGY AND TOPOGRAPHY OF WROCŁAW OLD TOWN AND ADJACENT AREAS

Retracing the original configuration of the terrain in Wrocław is important for determining the natural boundaries of the built over area, possiblity of inundation during flooding, as well as access to surface and groundwater and also for understanding the trends of development of the urban infrastructure. This topographic setting was of essence when planning and building the town defences. Our concept of the geomorphology has hed an impact on the way in which evolutionary trends have been reconstructed.

Starting from the 13th century the configuration of the area of the Old Town had been subject to significant man-induced changes. In some places, the culture deposit has a thickness of not less than 5 m, which adds to the difficulty of reconstructing the original relief. Hydrotechnical alterations made within the valley of the Odra itself also make it difficult to assess the shape of the banks and the pattern of the meandering river channel.

The part of Wrocław covered by the study lies on a terrace of the left bank of the Odra at 3–5 m above the surface of the river. At present, the Market Square is on a level of 119–121 m above the sea level, its northern area slightly higher than its southern area. The most elevated part of the town has the form of a natural "ridge" which runs E–W from the church of St Wojciech (Adalbert) to St Elisabeth church. Going south, the ground surface decreases almost imperceptibly to the level of 118 m. In the area of the moat there is a more apparent depression, with an E–W alignment. In the east, this depression continues as far as Komuny Paryskiej Street and on to the area of Żabia Ścieżka Street near the Oława River.

The ground surface descends moving towards the Odra forming 2–3 distinct levels, presumably relics of ancient river terraces now buried by the anthropogenic deposit. The present day level of the Odra river in the region of the University is at c. 116 m

above the sea level, higher by 5 m than its natural level due to ponding at hydro-power plants near the University bridges. Considerable problems for interpretation are posed by the which stretches from Nowy Targ Square as far as the University complex. Its level is lower by 2 m than that of the Market Square with a hard to interpret bulge perceptible near Kotlarska Street. Unfortunately, the depth of the culture deposit in this region is so substantial that the original ground surface could not be determined.

Analysis of the surface of the Old Town not disturbed by human activity was made using input from archival records and by investigating in the field. An attempt was made to classify the lithology of sediments which build the subsurface section of the geological profile. First of all, attention was paid to the occurrence of humus levels associated with undisturbed soil levels. Analysis was made of the position of the fen soils associated with the surface of the flooded planes. All the identified occurrences of a natural surface were charted on the map of Wrocław within a system of rectangular coordinates 92. The present day terrain of the Old Town was analysed also basing on a digital model. Using the above data a reconstruction was made of the profile of the original land surface. Petrography analyses of the gravel fraction discovered in the outcrops helped demonstrate that only the Odra river had transported the rock material which built the terrace later occupied by the chartered town of Wrocław. Basing on analyses of geomorphology of fluvial terraces near Wrocław, the occurrence of periglacial structures and wind-blown sand, a reconstruction was made of the evolution of the Odra valley around Wrocław and, in effect, of its topography during the period antedating the emergence of the town.

The modern valley of the Odra had developed as a result of transformation of the ice-marginal valley of Wrocław–Bremen into a river valley. During the Warthe stage (recessive stadial of the Middle Polish glaciation) waters issuing from the ice sheet started to carve a valley in the foreland of the glacier. Following the retreat of the ice sheet and climatic warming the ice-marginal valley of Wrocław–Bremen no longer drained waters from the melting continental glacier. Instead, the rivers of Sudety and Carpathian mountains which drained the Moravian Gate started flowing down this depression. During the Eemian stage the valley became more incised and continued to carry the waters to the North Sea. During the early Weichsel glacial period, as the climate grew colder, the valley was gradually filled with new deposits. In the period 50–60 ka ky the terrace of the Odra took form, rising to a height of 15 m above the level of the river. Relics of this terrace have been identified in Hallera Street. Later still the river gradually cut down deeper. Presumably in the period 26––34 kyr, a terrace rising 5 m above the river level took form, now occupied by the Old Town. During the maximum range of the ice sheet of the Leszno phase, ice wedges, laminated structures associated with the seasonal melting of the permafrost, formed on the surface of this terrace, which gradually accumulated also a layer of wind-eroded sand. At the end of the ice age on a level up to 5 m higher than the river level the waters of the Odra flowed in conditions of cold weather. On the eastern side of Wrocław we find relics of a channel of a braided river. At this time, the river continued to move across the valley which was 12–19 km wide. The downstream reaches of the Oława and the Widawa now flow down ancient channels of the Odra, forming a so-called captured delta. Traces of similar channels survive at Poświętne and Widawa on a monadnock situated within the Odra valley. Another probable trace of a braided channel were identified between Żabia Ścieżka Street and the outer moat, as far as the Świebodzki railway station building. The valley of the Odra in the north and the braided channel in the south created a favourable sites for a large settlement district (Walloon district) by the church of St Maurice situated on a distinct elevation. The depressed area left by ancient braided channel became apparent during the great floods of 1903 and 1997.

The transition from the Pleistocene to the Holocene saw the formation of lower erosion-accumulation terraces in the Odra valley. At present they survive as monadnocks between the modern valleys of the Odra and the Widawa, and in the eastern district of Wrocław. Probably the highest erosion level, its edge perceptible along the Kotlarska Street, dates from this period.

During the Holocene the Odra was a meandering river. It is likely that the cut off meander necks with time developed into a series of small islands on which Wrocław now stands, eg. Ostrów Tumski (Cathedral Island). In the study area large depressions left by the meanders were identified in the region of Purkyniego Street and in Nowy Targ Square. Most likely, the curve of the street in Nankiera Square follows the line of one of these meanders. In augering holes and a small number of archaeological sondages there was evidence on mineral-organic deposits and even peat. This points to the presence of former old river channels.

In the region of Uniwersytecki Square, by the site of the former ducal castle, was identified the occurrence of old river channels. Data from geology suggests that also the area of Garbary Street there may have been an old river channel. The street curves in an arc open towards the Odra. Analysis of palaeomorphology indicates that the ducal castle had sited on high ground bordered in the north by the Odra, in the east and west, by a wetland with old river channels. The elevation it occupied had been formed by the meandering river..

The Holocene flood terrace reaches as far as Malarska Street. In this part of the town fen sediments designate the extent of the meandering channel of the Odra. The next meander was by the Wszystkich Świętych Street. The building of the Arsenal is perched on a rim created on one side by the Odra, on the other, by the meander, its southern bank occupied by the Mikołajska Gate.

The ground level surface of the Old Town moving from Kotlarska Street to the inner moat, except for the latitudinal "ridge" does not show any greater differences. The ridge is most likely to a relic from the period when the Odra was a braided river. No evidence of the presence of mineral-organic sediments was discovered in the area of the moat running parallel to Kazimierza Wielkiego Street, which rules out the possibility that the Odra flowed there. It is possible, on the other hand, that the same area was drained by small streams flowing from the present day district of Krzyki.

In the region of the outer moat organic-mineral deposits were identified near the Joannite church, by the site formerly occupied by a pond (Mysi Staw/ Mäuseteich) and in the region of the Wrocław's main railway station. It is not impossible that during the Holocene this the floodwaters of the Oława river flowed through this area, back to their main channel. This could have been their regular route until the early medieval period, but definitely not during the period 11th–12th c. Only during disaster floods waters of the Odra flow down this depression for a short time.

The area of the Old Town lies on a terrace 5 m above the water level in the Odra. The terrace took form before the Leszno stage (Weichsel glaciation), built by the Odra transporting rock material from the Carpathian mountains and the drainage basin of the Nysa Kłodzka. During the Leszno stage its surface was under permafrost and the Odra was still a braided river. Traces of braided channels, still visible in less urbanised areas, are all but obliterated in Wrocław. They become apparent only during extreme floods as in 1903 and 1997.

Given its geomorphology the area was an obvious choice of a site for the Market Square. A relatively level area was selected, sloping lightly southwards. This natural gradient made it possible to make the best use of sunlight and its warmth. The more raised area in the north acted as a barrier against potential flooding by the river. In a later period this threat was fully removed by hydrotechnical projects carried out on the channel of the Odra. The Market Square is underlain by a layer of dry sand with a relatively shallow water table. No so, the area of the Nowy Targ Square and the land between the Market Square and the Odra, which was quite marshy in places. Improvements were made by regulating the river channel and draining but this area still had a less convenient access to a suitable water bearing level.

The boundaries of the town were partly adjusted to fit the configuration of the land. On its east side the area of Nowy Targ Square passed into a broad floodplain of the Oława and numerous old river channels of the Odra. On the west side, the old river channels reached the area of the present day Legnicka Street.

To the north there were no natural boundaries. At most, an obstacle was formed by the braided channel along which the outer moat was dug.

A present we have least data about the NW part of the area of the Old Town. There is an observable lowering of the terrain. Absence of deposits typical for Holocene rivers indicates that it was formed during the Pleistocene. Most likely, the braid flowed down a wide channel eroding the material of the substrate over a larger area.

J.B.

III. THE STREETS OF PRE-INCORPORATION WROCŁAW

Before the setting up of the communal town with its regular spatial layout, Wrocław had been a proto-urban settlement complex, with a central seat of secular and ecclesiastic power which was the focus for economic activity which, as time passed, became increasingly non-agrarian. We find similar proto-urban centres in the inner zone of East Central Europe, the largest of which was Prague.

The development of the settlement complex in Wrocław began around AD 950 with the setting up

of a stronghold on one of the islands on the Odra, later known as Ostrów Tumski (Cathedral Island). In the 11th–12th century on both banks of the river and on other islands, more small pockets of settlement took form each with its own centre. The results of investigation of this polycentric proto-urban structure made by several generations of historians, art historians and archaeologists, can be summarised as follows:

– It a represents a social and settlement phenomenon which reflects the needs and the demographic, political, legal and economic environment proper for its time.

– During the 12th century, mainly its latter half, was seen an acceleration in the development of the settlement complex and its economic potential. Consolidation and dynamic development of its manufacturing and commercial function was the result of processes then ongoing in the Post-Carolingian zone of Europe. The formation and rapid development of towns in that area had led to the intensification of far-reaching commercial exchange. Partners, or possibly, intermediaries in this activity in the East were none other than the proto-urban centres, Wrocław included. A significant factor which also contributed to the economic growth of Wrocław was the setting up in the area of two large and economically active monasteries.

– A topographic reflection of the favourable economic situation was intensified development of the settlement on the left bank of the Odra with the church of St Wojciech (Adalbert). It stretched from the ford across the river to Piasek (Sand) Island to that church, and also westward, along the Odra. Next to it two other pockets of settlement arose: a settlement identified with a commune of Jewish merchants in the area of the present day University and a Walloon settlement on the SE margin of the agglomeration.

– In a demographic sense, starting, at the latest, from the onset of the 13th century the proto-urban complex on the left bank of the Odra consisted of several communities, their legal status unknown to us, associated with different ethnic groups. The written sources and also the evidence from archaeology suggest that its inhabitants had arrived from western Europe – Walloons, Germans and Jews – who had come here as part of an economic migration to the East which had started back in the 11th c. on the Atlantic shore.

– A trait characteristic for Wrocław is the lack of a hard and fast dividing line between the proto-urban centre and the incorporated town. The transition to a structure typical for a new type of town had the nature of an accelerated process. Legal regulations were designed to impose order and control over this process, on terms dictated largely by the local ruler from the house of Silesian Piast princes.

– In the light of what we know at present, basing mainly on evidence from archaeology, we can propose a hypothesis, open to discussion, that the urban settlement later centred on the Market Square had taken shape as yet another settlement district, element of the existing polycentric complex. During the 1220s–30s it sprang up in an area not occupied previously, found to the east and south–east of an earlier settlement centred on the church of St Wojciech and known as "*ad sancti Adalberti"*. This older settlement, which had developed during the first decades of the 13th c. to the south and to the west, was given a new parish church of St Mary Magdalene in place of the church of St Wojciech, which in 1226 had passed to the Dominican order. The new community settled around the Market Square was brought together within the framework of a newly created parish of St Elisabeth. It is likely that the two districts had been consolidated into a single structure in terms of its organisation, legal basis and settlement as a result of an incorporation contract of 1242. This act was essential for the disintegration of the older polycentric complex and its replacement with a compact, regular town plan.

A significant factor in the development of medieval towns was inter-regional exchange by means of a network of trade routes. By historians of economy Wrocław is placed in the Sudety–Carpathian region, which covers Bohemia, Silesia, Małopolska/ /Little Poland, Slovakia Pannonian Plain and Transylvania. The ties of this area with other economic zones were mostly along an E–W axis, down a route which in its stretch between Cologne and Kiev was known as *Via regia* or *Hohe Weg*. It is accepted that the *Via regia* had taken form during the early Middle Ages and grown in importance during the 13th c., parallel to the rise of commercial centres in East Central Europe. Wrocław is seen on this route for the first time not later than around 1150, when in 1149 the Benedictines from Ołbin had received the right to hold a spring fair on the decade of the feast of Saint Vincent.

The road network within the proto-urban agglomeration had not been the result of deliberate design. Rather, it had been dictated by the internal topography of settlement and the location of churches associated with this development, the geographic setting and the layout of external roads. The streets

connected the individual pockets of settlement and facilitated transiting traffic. The nodal point of these internal linking roads was the river crossing over the Odra to Piasek Island. In the west it bypassed the Cathedral Island with the ducal stronghold. Before 1149 at least a part of the river crossing was over a wooden bridge. During the final phase of development of the early-urban complex, ie. at the end of the 12th and in early 13th c., settlement on the left bank of the Odra mostly clustered along the long-distance routes. Of special significance in this respect was the stretch between the bridge and the church of St Wojciech which was common for the two main routes – the *Via regia* and the route running from Wielkopolska/Greater Poland to Bohemia.

J.P.

IV. THE STREETS OF LATE MEDIEVAL WROCŁAW IN THE LIGHT OF THE WRITTEN SOURCES

Next to the function that a street served in the road system of a medieval town, its outlook, quality, status (often also its name) was decided by the townspeople, their need for space, communictatin, financial means, occupation and the buildings on their property which reflected all the above. An assumption was made in the present study that all the named factors applied also to the area in front of the house, to the road surface and infrastructure of the street, which was made use of and used up but, first and foremost, adjusted to their expectations by the owners of adjacent property. The town council only protected the public space through legislation, supervision and participation in activity designed to sustain the functionality of the streets and their associated fixtures.

The soundness of the adopted assumption was tested using evidence from analysis of written sources from the 14th–16th c., of official provenance, related to matters pertaining to the permanent road surfacing (stone and wooden), regulations on cleanliness and order and the proper services, in particular, related to waste removal and operation of sewage systems and water mains.

If not from the very beginning of the existence of the communal self-government of Wrocław, then starting from the 1370s, the territorial ruler, even at the cost of reducing his own revenue, entrusted to the care of the town council roads and bridges, which, although the written sources are not specific about this, were probably the ones then outside the town wall. Regular expenses entered in the municipal accounts under the heading *super pontes ligneos et lapideos*, starting from early 14th c. relate both to the actual bridge crossings around the town as to the surfacing of unspecified roads. More specific accounts as to the location of these projects are rare and, in case of road surfacing, relate only to the paving with stone or wood or sections of the Market Squares used by commercial activity, or to the construction of "stone roads" at the entrance to the city gates and in their outlying area. On this basis it has been concluded that other cases in which a street was paved with wood or stone must have been the result of the care of the interested parties themselves, the property owners in a given neighbourhood.

In Silesian towns the first regulations on keeping order which obligated the property owners to repair the road surface in the street and remove refuse from in front of their houses are known date from the 1290s. In the laws from Wrocław from the 1330s/40s the most original solutions continue to be ones from the sphere of the building law which made the management of private space on the town property subservient to the order designated by the street, both in the vertical and horizontal plane. The requirement that one's doorway may not be higher the one next door discouraged an individualistic approach to the problem of coping with the rising street levels. Once the level designated by a "bridge" or "stone bridge" had been imposed as the boundary not to crossed by the rising street level public space had been made the appropriate point of reference and a source of a common standard. As more waste had to be removed to outside the town wall the problem posed by its disposal grew necessitating the introduction of increasingly far-reaching regulations on keeping order and of administrative solutions, a development so typical for early modern towns.

In contrast to the detailed community regulations on the letting rain and wastewater pass through one's property the question of its passage beyond, down the street continued until as late as the end of the 15th c. to find no reflection in the written sources, similarly as the difficulties posed to communication by the existence in the streets of half-open drains or efforts to facilitate passage over them by laying large slabs of stone over the open drain channels. It has been suggested by some researchers that the business of constructing water supply systems was a joint

venture of the town authorities and the townspeople. The town would have been responsible for constructing facilities for supplying water and keeping them in good order (something which is reflected in the municipal bills) the property owners had to take care of building the underground infrastructure – a network of pipes and wells under the street surface, the cost of which during the 14th–15th could not be covered by the communal budget. No wonder, that in these circumstances the specific character of Wrocław's water supply system is so poorly documented in the written sources, although, on the other hand, they are more forthcoming on the matter of reuse of old timber as a cheaper method of obtaining the material for making pipes.

M.G.

V. THE REGULAR STREET PLAN. ORIGIN AND CHANGES UNTIL THE 14TH CENTURY

On a panorama map from 1562 Wrocław appears to have a super-regular grid of streets, more distinct even than the one seen on the modern map of the Old Town. At centre is the large nearly square-shaped Market Square set about with uniform blocks of houses, which west of the Square are mostly on a sub-rectangular plan, to the north and east – on a square plan. Nearly all the streets shown on the map are of 13th century date but they do not date from the exactly the same period. Their beginnings are closely associated with the parcelling out of individual districts of the Old Town, possibly, with their subsequent transformation. In the past, it used to be common practice to tie the parcelling of the left-bank area of Wrocław with the perplexing question of the town's three separate episodes of chartering, in the hopes that by relying on the written sources it might be easier to narrow down the date of the incorporations and thereby, also, of the parcelling projects.

However, it is possible to treat these two developments separately. Incorporation was primarily a legal act, which involved the taking out of an area from under the jurisdiction of the local feudal lord – prince, bishop, etc, to be governed by the town, its laws specified and written down earlier. What mattered most in this process was to define the boundaries of the district affected by the incorporation, less important were its various forms of development – uniform or otherwise – its constituent parts, or the processes of parcelling carried out earlier. The laying out of streets, squares, properties, could be spread out over time and be subject to diverse processes and change. This was particularly true of the larger regional capitals such as Wrocław, where the new town was established on an area of virgin soil and one already under some form of settlement. And so, the emerging town could include: 1 – older districts of settlement, 2 – area of virgin ground now divided into individual plots, and 3 – areas connecting the two, of mixed character. The difficulty in reconstructing the process lies in the fact that it was not consistent – the area subjected to systematic parcelling could encroach on the adjacent "intermediate" area and the existing older districts.

To illustrate the dynamics of changes in urban planning, of key importance for the development of Wrocław, an attempt was made to determine the form of development of its individual areas and reconstruct its street network every 25 years. In this we drew on the results of archaeological and geomorphological studies made in the area of the Old Town starting from the 1950s (cemeteries, relics of buildings, streets, pottery finds, etc), as well as on input from metrology analysis of the dimensions of town squares, streets and blocks of buildings; the latter largely substantiated by archaeology – thanks to input from the investigation of the discovered relics of wooden and brick buildings.

M.Ch.

VI. STRATIGRAPHY OF THE CULTURE DEPOSIT AND METHODS OF STREET CONSTRUCTION

The culture deposit accumulated during the medieval period investigated by archaeology was for us the principal source of information on the methods of paving of the streets, to consolidate their surface, repairs made to them and daily maintenance, differences in quality and on changes at work. The techniques of street building varied depending on the phase of development of the town, moisture of the underlying soil and sociotopographic status of the street.

Most streets in Wrocław had, during the first decades of their existence, a natural dirt surface not

hardened in any way. With time and use they developed a layer composed of churned up original humus mixed with sand enriched with at least a part of the garbage removed from the houses and animal dung. Locally, in front of the houses, the street surface was improved and drained using simple methods. Analysis of these layers confirmed that streets were laid here and there with rough planks, spread with sand, wood shavings, ash and rubble from burnt down timber-framed buildings.

The first wooden surfaces were introduced before c. 1250 in a zone of continuous settlement in the eastern area of the present day Old Town. The layer of muck which had accumulated at the time of the proto-urban settlement had been laid with oak planks. Very likely, during the latter half of the 13th century, a wooden structure was used to pave the more select stretch of the Kiełbaśnicza Street in the western district of the town. This method became more popular and characteristic during the 14th c., a manifestation of advanced techniques for improving the street surface in medieval Wrocław. There is evidence from archaeology on even more basic methods where some elements of the timber pavement were reduced or dispensed with.

A regular method of cleaning, levelling and draining the streets was by spreading them with sand. This layer was protected next by laying here and there with rough planks. More seldom, some stretches were surfaced with a makeshift paving of pebbles, laid directly over the muck or humus.

The most advanced technique for protecting the sandy layer was by combining it with a stone pavement. In Wrocław pavements were laid of post-glacial pebbles, the better fragments, over a layer of pure sand, laid to level and drain the ground, forming a stable lining for the stone pavement. The oldest pebble pavements in Wrocław, identified in the Market Square, date from the close of the 13th century. Their extent in the Square itself was limited to the way across the square and to access ways to some of the stalls. In the streets stone pavements were introduced during the 14th century and around 1400 they became common, replacing the wooden walkways.

Analysis of stratigraphy of streets which had been investigated fully from one end to the next reveals differences in the way of using their individual stretches, between intersections with side streets.

P.K., J.P.

VII. EVOLUTION OF THE STREET BUILDINGS

The focus of this chapter is the origin of wooden and brick houses in the Market Square and the chronology of phases of evolution of the medieval town houses. A difficult subject, dependent as it is, on a correct interpretation of archaeological evidence and chronology of changes at work in the local building trade.

According to the input from archaeological investigation (1995–1998) made along the frontage of the Market Square and Kurzy Targ Street, and an even more recent excavation at Rynek no. 6 and 12, in an area adjacent to the Market Square, the first wooden buildings were raised during the second decade of the 13th c. The first houses in brick may have been constructed already in the second quarter of the 13th c. but for this we have only circumstantial evidence. These buildings were constructed of double-stretcher courses. The dating proposed for these structures is not contradicted by the form of the capitals and bases of two columns of a house at Rynek 17, presumably, one of two headman's houses in Wrocław. The first supplementary stone doorsills which started to be laid to cope with the rapidly rising street level in the Market Square are documented starting from around 1250 and were removed after one of the great fires of the first half of the 14th c. In the same period buildings in brick, similar to the oldest houses in the Market Square, only taller by a storey, were raised on property previously not under any more regular development, and also, in some principal streets such as Ruska, św. Mikołaja, Szewska, Kotlarska and Wita Stwosza (former św. Wojciecha Street); their brickwork was in a single-stretcher courses. Of these houses the ones in the Market Square already had supplementary doorsills in brick. In some houses, the bottom part of the wall was in a single-stretcher, the upper part, in a double-stretcher brickwork. The dynamics of construction of new houses in the Market Square is illustrated by the following statistics: before the first appearance of supplementary doorsills 15 brick houses were built, after their installation – 23 new buildings, with 4 houses not easily classified to either category. In total – out of 60 houses in the Market Square as many as 42 had been built even before the removal of the supplementary doorsills, or before c. 1350.

The rise of a new generation town house, with a vaulted cellar and, usually, a single raised storey

and a high steep roof, was connected presumably with the settling down of the ground in the Wrocław Market Square on a level known to us today and the full removal of the supplementary doorsills. This latter development occurred between the great fire of 1319, after which work was started on the Gothic church of St Elisabeth, and the fire of 1363 and the passing by the town council of a decree which ordered the rebuilding of all the wooden houses in the Market Square in brick or stone. The 14th century was a period of construction and expansion of buildings in the study area (left bank Wrocław) of the largest of the town's churches. The presence in the city of highly qualified masons worships acted presumably as a stimulant also for construction of buildings other than religious edifices.

M.Ch., Cz. L.

VIII. MATERIAL CULTURE OF THE PUBLIC TOWN SPACE IN THE LIGHT OF THE ARTEFACTS DISCOVERED

Culture of the late Middle Ages may be viewed as basically a continuation of the developments of the preceding period, a continuation, with smaller or greater improvements, some change and, finally, the emergence of new phenomena unknown earlier – which are described in literature as *res novae*. It is the introduction of the latter rather than any exact chronological dividing line which makes it possible for us to speak of the late medieval period. Also quite interesting in this respect is to compare small finds recovered during excavation of properties and streets. While our view may be distorted somewhat, mainly, by the alterations made to the course of the streets, some regularities can be detected nevertheless.

When it comes to material culture, the best example of conservative elements are temple rings (fig. 162:128–131) which are linked with the Slav element. It is nearly impossible to discuss objects which were only improved upon or changed under the influence of, for example, fashion. More sharply outstanding are some categories of objects unknown earlier.

Bell pendant (*Schelle*). These objects were known in Poland almost from the time when the Avars entered the Carpathian Basin, and lasted in a largely unchanged form until the late medieval period; here and there they are still in use today. But, if during the early medieval period they were mainly an element of horse's trappings, during the late Middle Ages they are seen as decorative element on girdles and all manner of sashes, occasionally, also sewn onto hats. The specimen from Szewska Street (fig. 163:136) is in tin, and not, like all the early medieval and the majority of late medieval ones – in bronze. The nearest analogy, both in terms of form and the raw material used, is known from London.

Bell. On the whole the early medieval period is not familiar with bells which have an open cup-shaped form (*Glocke*). On our territory they put in appearance only during the late Middle Ages, made in different metals, more seldom, in clay. Their function is quite varied. Similarly as bell pendants, they were occasionally a dress accessory, alternately, an attribute of the pilgrim or the mark of a leper. Some of these bells are inscribed or ornamented. Unfortunately, the specimen from Szewska Street (fig. 163:137), is neither, unlike eg, a bell recovered in Cathedral Island (Ostrów Tumski), which makes it difficult to define its function.

Brooches. Irrespective of their form, brooches (*Spange*) are in our region a Late Medieval object. While, admittedly, during the early medieval period objects used for the same purpose (fastening clothes) are known, they are referred to as fibulae (eg. "finger fibulae"). On the other hand, ornate Scandinavian disc fibulae are – in their chronology and form – so distant from late medieval forms that it is hard to speak of any prototype whatsoever. As it seems, Merovingian, and later, Carolingian and Ottonian, disc fibulae (*Scheibenfibel*) may be treated as the prototype of late medieval brooches, especially of the round specimens. Next to these popular forms another specimen from Szewska Street has a more rare, lozengic (diamond-shaped) form. This find is interesting because its frame is tin-lead alloy (fig. 163:133), suggesting its value was small if not for the fact that each of its corners has a setting of amber.

Belt sets. Belt sets known from Poland dated to the early medieval period consist of a band (*Borte*) with an iron buckle (*Schnalle*). Lyre-shaped buckles in bronze are imports from the nomad East. Strap-ends (*Riemenzunge*) on the other hand, in their origin are Carolingian elements which had spread to the NW reaches of Poland by way of Scandinavia, and south, by way of Great Moravia. To the elements of the belt set named here the late Middle Ages added two more basic types of mounts and new types alto-

gether. Circular specimens (rosettes, etc.) could be solid or have an opening for threading the buckle pin to protect the strap from tearing. Similar, narrow mounts, high as the width of the belt strap (*Bortenstrecker*) could have a hole or not. Some change is seen in the form of the buckles but there is little room for innovation. Relatively often the buckles have a buckle plate. On occasion, the strap-ends are quite narrow and long and are a form linked inseparably with the so-called overlong (*überlangen*) belt; after passing through the buckle the strap sometimes hung down to the very ground. During the late Middle Ages there is an evident increase in the proportion of buckles made in bronze and the frames are often chamfered. Unfortunately, from the streets of Wrocław, apart from assorted forms of buckles (fig. 167–168), we know of just a single rosette mount (fig. 163:139) and not a single strap-end.

Spurs and horseshoes. For the first time we have occasion for a quantitative comparison of these two interesting categories of finds (fig. 125, 129–134), of which horseshoes probably represent the longest series recovered in Poland from the streets of a single medieval town. The ratio is 75:5, in favour of the horseshoes. We have no similarly detailed data from other areas of Wrocław, where investigation focused both on the town plots and town squares, nevertheless, the domination of horseshoes is always legible in the city. Theoretically one could look for a technical explanation. But studies of early medieval strongholds, as eg, Opole or Wrocław, show that in strongholds spurs are always the better represented. From this we can draw a conclusion that centres with a domination of horseshoes have an urban character. Looking for the causes of this disproportion we can point to the fact that in early medieval strongholds horseshoes were dropped only by horses of riders, and in towns, also by the draft animals.

Scabbard chape of a dagger. The U-shaped chape (*Ortband*) cannot be treated as a late medieval invention (fig. 123:1). This is because its form was dictated by the form of the scabbard which, in turn, conformed to the shape of the point of the weapon. Nevertheless, iron U-shaped forms, often with a fold at both ends, are characteristic for the late medieval period. Until recently just one mount of this sort was known in Silesia, from Opole, but more recently it has started to turn up at earthworks.

Scabbard chape of a misericorde/dagger. The only find of such a scabbard chape (fig. 123:2) finds analogy only in the culture deposit in Ostrówek in Opole (fig. 123a), associated with the castle. This type of form is known during the early medieval period but could be echoed by some forms of mounts seen on the sheaths of late medieval knives.

Knife sheath mount. The streets of Wrocław yielded a relatively large number of knife sheath mounts which made it possible to develop their comprehensive classification (fig. 209–213). This is all the more important as, not infrequently, some forms of these mounts have been identified in literature incorrectly as tweezers/tongs. It is significant that excavation of town plots has yielded a much smaller number of knife sheaths which suggests that they were more likely to be dropped in the street. Early medieval knife sheath mounts were without exception in copper alloy, the late medieval, exclusively in iron. Incomparably more attention was given during the early medieval period to protect the tip of the knife, hence, the elaborate form of the chape. During the late Middle Ages quite a lot of care was taken to protect the entire length of the blade, hence the occurrence of forms without a well-defined chape.

Badges. Finds of badges are exceedingly rare in Poland, although not as rare as is suggested by literature. This is because on occasion some of them have been classified as all manner of mounts, appliqués, etc. This is due to a number of causes. The subject is little known in Poland, barely signalled in Germany although widely described in English and Dutch literature. The very definition itself is hazy which makes the term "badge" understood either very broadly or very narrowly, or with the main focus placed on heraldic functions. In a narrower sense, a "badge" is a plaque which has a pin to stick into the clothes fabric. In a wider sense, the method of attachment does not matter and a "badge" may also have been sewn onto clothing. The definition of what a badge is not helped either by its form as practically anything may be a badge. Even so, this has to be an object which does not appear to have served any utilitarian function. It is mostly made in a tin-lead alloy, but rarely, also in precious metal. The badge proper served the function of an identifying mark, eg, for members of the great family, court, a party, but in its excellent majority it is impossible to specify its social function more accurately. Examining the finds from the streets of Wrocław we can classify to this category a round brooch in a tin-lead alloy with a flat pin (fig. 163:134). The flat pin which at first suggests its function of a "brooch" is too flimsy actually to have punctured a hole in any fabric and the interpretation as a badge is supported also by its raw material, which made this object easy to suffer deformation.

Linden leaf. A unique specimen is a pendant in the form of a linden leaf, monogrammed on both sides with the letter "A" (fig. 127:15). We find it hard to decide whether to interpreted this object with symbols of courtly love or with heraldic emblems of the Přemyslids.

Pomander (*Bisamapfel*, *Riechkugel*). This would probably be the first specimen ever discovered in Poland (fig. 163:138), although we have to note that these objects are rather hard to identify. Musk is and used to be an extremely expensive stuff with a strong and lasting scent. Explaining why pomanders were worn for show and the upper ranking burghers often had their portraits taken holding a pomander in their hand. What originally started out as an apple, later came to be made in precious metal. With time, wealth was manifested by carrying about this orb of wealth made eg, in copper or a tin-lead alloy. Exactly such an orb is represented by the specimen from Szewska Street, its analogies are known, eg from Konstanz.

Weights and coins. Usually, excavating in town plots we find more coins than weights. In the streets of Wrocław the situation is reversed (fig. 136:92––97, 137) suggesting that more care was taken about not losing coins. On the other hand, when it comes to weights we are struck by the rich variety of weight systems and absence among finds of weights from the weights system used in Wrocław. Let us recall that prince Henryk III Biały introduced in 1250 a reform of the weights and coins system. While the new coin – so-called "thick bracteate" did not last very long with the introduction already at the close of the 13th c. of the Silesian silver half-groschen, the mark (*Marke*) of 197,12 g, and its fractions, continued in use for a very long time. In the meantime, among the weights discovered one specimen is a fraction of the Culm mark, the rest are associated with lighter marks of an as yet unknown provenance. This would document far-reaching commercial exchange of Wrocław and visits to the town of merchants (bringing their weights with them) from distant lands. Somewhat puzzling is the absence of styluses (*Schreibgriffel*) and possibly also, of wax tablets, but one would expect that rather than in the street transactions would have taken place indoors or in a market square.

Jew's harp. Although quite an unsophisticated instrument, it was not very popular in Polish lands, which makes the find from Szewska all the more exceptional (fig. 176). The Jew's harp puts in appearance in our parts during the late Middle Ages and so far we have yet to see stamp-decorated specimens, of which a larger number is known from eg, Cologne.

Board game tokens. Although playing pieces for chess of oriental variety appear for the first time in Poland around the 11th c., ivory pieces shaped like a low pyramid used in playing draughts, are known only from the late medieval period (fig. 164, 174). The small number of tokens from the streets of Wrocław is not surprising as the game was played most often indoors. Somewhat more numerous are hexahedral dice (fig. 164:167–172) and astragaluses (fig. 169). In those days most games were associated with gambling, censured by the Church and secular authorities.

Enkolpion. This species of cross is an absolute rarity in the western area of present day Poland (fig. 128:16); presumably it was dropped by a visitor from the East.

K.W.

IX. STREETS OF MEDIEVAL WROCŁAW AS ELEMENTS OF URBAN PUBLIC SPACE. CONCLUSIONS

The complex research subject of medieval streets is tied to the question, in its broader sense, of the relationship between humans and the natural environment, the progress in technology, planning of urban space, social topography and relationships in a zone shared by the townspeople. It is a reflection of how the method of organising municipal investment, constant care and more temporary efforts of the commune and owners of town property. The concept of the street covers both the material and symbolic criteria.

The street plan of the post-incorporation Wrocław has survived to our day with only minor changes and is corroborated by evidence from archaeological research. Therefore, the object of inquiry presented in this volume is not so much the plan of the street grid, as the way in which it came about and was kept in good shape. The results from interdisciplinary studies and the discussion of several decades' standing lead to the conclusion that the regular street plan of Wrocław took form as a result of several projects of parcelling. Consolidation of the boundaries of the

town plots by filling them with buildings had the nature of a process which continued over several decades of the 13th century. In the eastern and northern part of the town streets were laid over an older, proto-urban layer and structures. It is not always possible to separate more explicitly the older occupation levels from a layer which developed as a result of the presence of an unpaved dirt surface of streets from the 13th c., and more sharp distinctions could be misleading in this respect. The oldest blocks of property were established around the Market Square and our knowledge of them is well supported by input from the investigation of the surviving relics of buildings and the culture deposit which accumulated whilst they were in existence. Trends in the evolution of build-up and the sequence of emergence of town districts situated at a greater distance from the Market Square are presented in this volume according to the potential offered by evidence at present at hand and may form a basis for a future discussion.

The outlook of the medieval street, and as such, of the urban public space, is determined by the walls of private houses which form its boundary. This point of contact, crucial from a practical, outright, economic perspective, has also its symbolic significance. The façade of a house is a demonstration of its owner's membership in the town community as well as status in the hierarchy created by the community. The appearance of the town house, and also of entire frontage in a street, was influenced by the town authorities by means of building laws and regulations on keeping order in the town. The complex social structure of the town, the different trades and crafts, as well as individual potential and preferences of property owners were responsible for the uneven development of the buildings and formation of compact frontages. These differences applied to the poorer and more prosperous districts of the town, individual streets, their stretches and individual plots. This makes it hard to suggest phases to reflect an ordered rhythm of changes.

The early stage of the development of the communal town was characterised by an absence of an organised system for the removal of impurities and building waste. This resulted in a rapid accretion of the culture deposit and rising street levels. The ground floor of brick houses constructed during the 13th century, sunken slightly into the ground, in the 14th century, during the Gothic rebuilding project, was made over into cellars. The chancel of the church of St Elisabeth in the Market Square was built before c. 1250 when the street level was at c. 117.00 m above the sea level. After 1350 it was given a new Gothic form with the floor now set on a level more than 120.00 m, which gives us indirect information about the approximate level of the ground inside the edifice. However, already in the 14th century the rapid accretion of the anthropogenic layer had lost momentum. This fact, established using the archaeological method, corresponds to information found in the written sources. Analysis of historical accounts shows that the change in the outlook of the streets of Wrocław around the year 1350 was the result of deliberate and consistent action by the town council. It involved, on the one hand, road building projects funded from the communal resources, on the other, from making it the duty of the property owners to keep order in the street in front of their estate. The nature of these activities was regulated by laws and their proper performance was monitored by the authorities.

To what extent are we able to asses the quality of the communication conditions offered by the streets of medieval Wrocław without giving into the temptation to compare to the modern situation? It seems that basing on material evidence and written accounts available at present we can attempt to determine the extent of change in relation to the original natural status and the scale of road improvement projects. The rhythm of change is difficult to reconstruct as the techniques of road construction and maintenance overlapped in time, also in the selfsame streets. But we can describe the general tendencies, trends of development and the resulting phenomena. The completed analyses convince us that the story of a street is a reflection of the mounting communal problems and solutions devised in response to these challenges. Improvements were made to the condition of the road surface to a degree required by the current function of a street and possible at the current technical and financial means of the townspeople. At an early stage of the development of the town, when the level of disturbance to the natural environment was still negligible, also the road building projects and maintenance were not on a wider scale. The increasing deterioration of the condition of the streets led to an organised intervention by the townspeople and the reduction of the nuisance. The policy of the town council, of necessity changed from liberal, in the 13th century, to active and restrictive, during the late medieval period and the modern age. From around 1350 the streets become clean, forced by the reaction to the earlier in-

convenience to communication and sanitation. This period corresponds to the phase in the development of the town during which increasingly is seen a separation made between private and public space, both on the level of the material as well as symbolic phenomena. The street has become a place encumbered with a series of customary and legal restrictions which enforced a universally acceptable behaviour and even an appropriate appearance of persons setting foot in the street. These values are highlighted clearly in early iconographic sources and moralizing written accounts. In them, the streets provide a setting for lofty, usually, religious, scenes. The cleanliness and light colour of their surface is certain to be exaggerated, however. The good and the bad road have outright grown into a metaphorical idiom.

J.P.