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THE WORK OF PROF. KAROL BROMEK ON THE GEOGRAPHY OF SETTLEMENT

Abstract: The author discusses Prof. Bromek's work on the geography of settlement, in four fields: rural settlement, land use of urban areas, settlement networks and comprehensive studies on the city of Cracow.

Key words: rural settlement, land use of urban areas, settlement networks

Introduction

In the academic work of Prof. Karol Bromek the most considerable part is devoted to the geography of settlement. This basic orientation to his career can be demonstrated by three facts: his master's degree on methods for measuring rural settlement intensity (Bromek 1945), the title of Ph.D. given for publications on land use in Cracow and its surrounding area (Bromek 1966), while for nearly 20 years (1967-85) he was head of the Geography of the Population, Settlement and Agriculture Section, at the Institute of Geography of the Jagiellonian University of Cracow. During this time numerous works on settlement geography, both master's and doctoral theses, were written.

Prof. Bromek's academic interest in settlement geography focused around four issues: rural settlement, the land use of urban areas, settlement networks and comprehensive studies on Cracow, the city in which he completed his university education, worked as an academic, and died.

Studies on rural settlement

This field was one of the earliest in Prof. Bromek's work, maybe because it was the theme of his master's thesis. Continuing his studies on the methods for measuring rural settlement intensity he published three papers with Ireneusz Kwiecień in which new methods, based on the Lorenz curve, were presented and tested on examples

of chosen villages from the voivodeship of Cracow (Bromek, Kwiecień 1969a; Bromek, Kwiecień 1970; Bromek, Kwiecień 1972a).

To understand fully the importance of these rural settlement studies, it is worth remembering that Polish geographers dealing with this problem in the pre-war period (Maria Kielczeska and Bogdan Zaborski) mainly used methods developed by French and German geographers. They preferred a morphological approach with special stress on settlement origins (a historical approach) and simple statistical methods to define settlement intensity in a rural area (Demangeon). Prof. Bromek and Kwiecień's works defined the building density in the village and expressed it by a statistical measure – the Lorenz index. Their method needed to establish formal research units in which the buildings were mapped, followed by their distribution, shown graphically by the cumulative frequency curve, and the calculation of the coefficient. The authors chose as their basic unit a 400m² quadrat. An advantage of their method is not only the formal (numerical) result defining the density of buildings but also the opportunity to lead comparative investigations on villages with a variety of origins and forms, as well as the same village at various periods (a dynamic approach) to reveal the processes shaping the settlement unit.

It is a real pity that this method, developed and tested on examples from villages in the Cracow Voivodeship, is not used widely by contemporary Polish geographers who, neglecting rural settlement studies, have left this field to other disciplines.

Very good examples of the comprehensive geographical studies are found in the monographs on villages from various natural and economic regions, published by Prof. Bromek and based on master's theses under his supervision (Bromek, Miś 1967; Bromek, Leśnicki 1968). The village of Kaszów is representative of the zone surrounding Cracow with all the problems observed in such an area, while the village of Gronków is typical of Podhale, the mountain region in which considerable economic, demographical and social changes occurred at that period.

Both these studies are good examples of the presentation of field research and such investigations should be continued both in bachelor's and master's theses. These works made in the 60's are worth remembering and popularizing because they show not only the methods of geographical field investigations, but also the interesting results which can be obtained from research on rural settlement.

Studies on the land use of the urban areas

This part of Prof. Bromek's work is, no doubt, the most well-known and frequently cited in the geographical literature. By this the present author means above all the fundamental land use study of Cracow (Bromek 1966), but his methodological work and other work under his guidance or in his research team is also highly valued. The idea of urban land use appeared during his work in the Regional Spatial Planning Office in Cracow and was developed during his co-operation with the planning authorities of Cracow and the Cracow Voivodeship.

The first publication on land use of a methodological character was made in the mid-50's (Bromek 1955) and the method of land use mapping at the 1:5000 and

1:25000 scales, presented in a short paper published in a leading Polish geographical journal with an international readership (*Przegląd Geograficzny*), became the basis for the mapping of the Cracow Powiat (district) – some 2500 km² in total.

The basic premise of this method was a functional attempt at spatial research, which was new in comparison with the investigations on the city's physiognomy and landscape in Cracow in the pre-war period (Kubijowicz, Mrzaskówna and Simche). A significant feature of his land use maps was an inventory which led to the establishment of a functional division of urban areas. The number of land use categories depended on the scale of the map and at the 1:25000 scale there were only seven categories of which only one – “technical” (marked in red) – contained not only the built-up areas, but those of industrial, mining and warehousing, as well as roads and railways. The term “technical” being understood as space permanently used by human activity, is the most typical for land use investigations made in Cracow.

More highly developed was the classification used at the 1:5000 scale in which twelve categories were distinguished, with eleven specific forms and nine mixed or transitional. The enlarging of the classification concerned mostly the “technical” category which was divided into: residential, industrial, railway and road categories. The most interesting element of this classification was the functional division of residential areas into central, suburban, rural-urban fringe and rural.

Using the land use maps made according to this classification in the 155 cadastral units of Cracow districts and villages of Cracow district (powiat), he tried to define and explain the causes of the spatial differentiation of land use in the mapped area. Using the cadastral materials from 1848 for the same spatial units he also analysed temporal land use change for the 1848-1960 period. From the basic land use categories, especially the areas of “technical”, intensive crops and vegetables as a part of the arable land, orchards and gardens within the total area, and the population density, Prof. Bromek distinguished eight land use zones, whose differences depended on the distance from the city-centre, four of which (377 km²) were outside of the city. The names of the urban zones reflect their functional character: central, inner, outer and suburban.

The work entitled *Land Use in Cracow and adjacent parts of the Cracow Powiat about 1960* (Bromek 1966) was the first in Poland and rare in internationally published work. Here the author, as a result of detailed empirical (field) investigation results showed not only the great functional differentiation of the city space (with its surrounding zone), but also explained the causes of this differentiation, both spatial and temporal.

This fundamental work did not complete the land use investigations in Cracow but on the contrary intensified them and was connected with the completion and publishing – in two successive papers – of an outline of a key for urban space use mapping at the 1:1000 scale (Bromek, Mydel 1972; Bromek, Malinowska, Mydel 1971a). This key, beside the presentation of earlier research results and the defining of the stages of investigation, developed the classification considerably and especially that of the “technical” category. For the mapping at the 1:1000 scale, 39 land use forms were distinguished within the urban area. During such detailed field work the authors, apart the functional classification of particular plots, proposed a collection of material to lead to numerous thematic maps at the 1:5000 scale concerning ownership, age,

facilities (with technical infrastructure) and height (number of floors), distribution of industry and services, type of road surface and transport.

The publishing of this key by Prof. Bromek and his collaborators was connected with those former master's theses which were studies of particular cadastral districts in Cracow. Some of them were published and thus became known to town planners and geographers. The author knows of those on the 1st cadastral unit – Śródmieście (Górka), the 3rd – Nowy Świat (Mydel), 8th – Kazimierz (Luchter), 16th – Łobzów (Środoń), 35th – Bronowice Małe (Prawelska-Skrzypek) and 46th – Rybitwy (Nowakowski). The numerous works on land use problems in Cracow and Rzeszów cities, all undertaken according to his method, were published by his team members – Górka, Mydel and Prawelska-Skrzypek. The last work by Prof. Bromek was his contribution to the Atlas of the Cracow Voivodeship (1979).

Summing up his work in the land use of urban areas, the author believes that Prof. Bromek created a Cracow school of urban spatial research. He prepared the methodology of this research, published it and then tested it during fieldwork, the fieldwork results being published in a monograph which was a synthesis of the results and ideas at that stage of his work. In improving the methods and making them more detailed, Prof. Bromek brought into his investigations a team of young academics who, as a result of this more developed method, made numerous detailed studies testing again his method of urban land use research. The results of their studies were used in successive syntheses which ended this stage of the investigation of urban land of Cracow.

It is worth stressing that the results from his land use surveys of Cracow have a wider universal meaning. They inspired or were used as examples in nearly all Polish geographical works concerning land use and the development of the spatial structure of cities, especially the larger ones.

Settlement network research

Prof. Bromek's work in this sphere is rather small - there is only one paper - but important. This publication concerned the spatial pattern of service centres in Poland and was published in *Przegląd Geograficzny* (Bromek 1947). This work is significant both from theoretical and practical points of view and it is worth remembering that it was written when discussion on the concept and pattern of the settlement network of Poland, in her new post-war shape, had just been started. Taking Christaller's theoretical concept of a hierarchy of tertiary centres as its basis, Prof. Bromek set it against the distribution of such centres in Poland. The central function rank was measured by commerce, administration and culture. Such an opposition let him distinguish nine classes of service centres: the highest ranked centre was Warsaw – 9th (in spite of wartime destruction), seven cities were ranked – 7th, and eleven – 6th. A detailed identification of the service centre hierarchy was made for the Cracow Voivodeship.

It is worth stressing that Prof. Bromek used in his study on the Polish settlement network the method of a German geographer discredited because of his activity in the Nazi period – separating the academic value of his concept from the political. As was revealed later, his solution was appropriate because Christaller's concepts on settlement

network research are still analysed and discussed. His work also has considerable documentary value and can be used to investigate the changes occurring in the service centre hierarchy in Poland during the 2nd half of the 20th c.

Geographical studies on Cracow

Prof. Bromek was an outstanding researcher of Cracow, the city where he lived and worked. His work is mostly on functional development and spatial structure, undertaken with planning institutions and continued until the end of his life. Most of his empirical studies, in which he tested his methodological premises and theoretical concepts, was achieved in Cracow. Thus he knew this city in detail and became an authority for town and spatial planners as a result of his publications which were used for theoretical and practical purposes.

The list of his works on Cracow opens with the vast study on the investigations by economic geographers (Bromek 1960). His successive publications present the spatial development of Cracow in a historical perspective (Bromek 1968a, 1969, 1971, 1975; Bromek, Kortus 1972b) in which Cracow's land use and growth are presented against the physical environment.

This part of his work was completed with a paper on the spatial structure of the Cracow Agglomeration (Bromek 1975a) and two maps (Plates No. 3 and 24) of the *Atlas Miasta Krakowa* on the urban development of Cracow, and the position of Cracow at successive stages of Poland's territorial evolution (Bromek 1988; Bromek, Łuźna 1988).

His interest in Cracow problems resulted not only from his own work but also the master's, doctor's and habilitation theses by his pupils and collaborators. Due to his work they inherited his interest and Cracow is the city best known and described by geographers, whose results are cited all over the world.

Conclusion

Prof. Bromek's work on settlement geography contains 14 original studies, papers and monographs, four academic notes and three maps published in atlases. The quantity is small but their value is considerable. He was the rare example of a scholar who led his investigations in a very orderly way, starting by preparing methods which were verified during empirical studies, and the collected material was finally used to make syntheses and theoretical generalisations. The proof of his success is the urban land use synthesis tested on the example of Cracow, and the preparing of a team of researchers who continued his investigations. Their theme, their methodological homogeneity and their scope allows the author to state that Prof. Bromek created at Cracow an original school of urban spatial research. As most of his detailed studies concerned Cracow, the city was known to geographers and described almost completely before the transition epoch at the end of the 80's. His merits in this domain are undoubted.

To finish I should like to reveal that one of the motives for preparing this paper was the omission of Prof. Bromek from the volume which presented the Polish

geographers who dealt with settlement and population geography in independent Poland (1918-1993), edited by myself (Liszewski ed. 1995). So in this way I want to commemorate the rich and important academic work of Prof. Bromek for the geography of settlement.

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Dorobek Profesora Karola Bromka w zakresie badań nad geografiami osadnictwa

Streszczenie

Zainteresowania badawcze Karola Bromka w głównej mierze dotyczyły geografii osadnictwa. Z tego zakresu wykonał on pracę magisterską (Bromek 1945), rozprawę habilitacyjną (Bromek 1966), a w okresie 1967-85, kierując Zakładem Geografii Ludności, Osadnictwa i Rolnictwa Instytutu Geografii UJ, inspirował liczne badania z tej dziedziny.

Dorobek K. Bromka w omawianej dyscyplinie geografii obejmuje 21 publikacji, które dzielą się na 4 grupy. Pierwszą stanowią studia z zakresu geografii osadnictwa wiejskiego, w tym oryginalna metoda badań skupienia zabudowy (Bromek, Kwiecień 1969a, 1970, 1972a) oraz monografie wsi. Trwałe miejsce w polskim piśmiennictwie geograficznym zajmują prace K. Bromka z zakresu użytkowania ziemi w miastach, oparte o stale udoskonalaną metodę zdjęcia użytkowania terenów miejskich (Bromek 1955, Bromek, Mydel 1972). We wspomnianej rozprawie habilitacyjnej wykazał K. Bromek zróżnicowanie funkcjonalne przestrzeni Krakowa i jego strefy podmiejskiej, wyjaśniając zarazem czasowo-przestrzenne przyczyny tego zróżnicowania. Wypracowana metoda tych badań była stosowana i udoskonalana w pracach jego współpracowników i uczniów. K. Bromek zajmował się też badaniami sieci osadniczej, stosując metodę W. Christallera do analizy rozmieszczenia miast Polski (Bromek 1974), wykonał też syntetyczne

opracowania rozwoju przestrzennego Krakowa (Bromek 1968a, 1969, 1971, 1975), w tym także w formie map w Atlasie Miasta Krakowa (Bromek 1988, Bromek, Łuźna 1988).

Badania geograficzno-osadnicze, a zwłaszcza te dotyczące użytkowania przestrzeni miejskiej, prowadził K. Bromek w sposób systematyczny, rozpoczynając od opracowania metod, weryfikowanych w trakcie szczegółowych badań terenowych i syntetyzowanych w postaci teoretycznych uogólnień. W zakresie geografii miast stworzył Profesor oryginalną szkołę badawczą, a koncentracja tych studiów na obszarze Krakowa sprawiła, iż to miasto jest najlepiej przebadane przez geografów ze wszystkich wielkich miast Polski.

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