

Jacek Paślowski

## CHAIR OF CARTOGRAPHY AT THE UNIVERSITY OF WARSAW (ON THE 50<sup>TH</sup> ANNIVERSARY OF ITS ESTABLISHMENT)

The Chair of Cartography was established in November 1950, when the Institute of Geography was created as a part of the University of Warsaw. The Institute included yet two other chairs: of physical geography and of economic geography.

Cartography had been taught at the University of Warsaw much earlier than that. In the years 1816–1832 lectures in geodesy and cartography were conducted by Juliusz Kolberg at the Chair of Measurement of the Faculty of Sciences and Arts of the Royal University of Warsaw. After Poland regained independence in 1918 a Department of Geography was established at the University of Warsaw. One of the subjects taught in the framework of the study of geography was cartography and topography. The respective activities were conducted by Stanisław Pietkiewicz (1894–1986) after he was granted habilitation on the basis of an interesting dissertation, written in Polish, entitled *On the Methods of Presentation of Relief on the Maps* [Les méthodes du figuré du relief sur les cartes]. Pietkiewicz belonged to the geographers having a broad education in natural sciences and a wide range of interests. He studied hydrology and geomorphology, and was an excellent topographer employed at the Military Geographical Institute.

After the World War II the studies at the newly established Geographical Institute lasted for four years, with specialisation taking two years. The programme of cartographic specialisation encompassed both the strictly cartographic subjects — cartographic projections, map editing and reproduction — and the less directly related subjects, useful for a cartographer — the fundamentals of geodesy, hand drawing, psychology of colours.

The employees of the Chair of Cartography conducted courses in cartography and topography for all the students of the 1st year of Geography (some 60 persons) and for the specialising students (some 10–15 persons) — altogether a bit more than 1000 hours a year. During the specialisation part of studies 17 subjects had to be credited and 7 examinations passed.

The themes of the master's theses concerned in their majority two subject scopes. These were: elaboration of the general-purpose wall maps presenting selected geographical regions of Poland and the world at large, and the

historical studies — monographs of the old maps of the territory of Poland (see Fig. 1). More than 30 general-purpose geographical wall maps were prepared at the Chair as the masters' theses. Material gathered in this manner was used to elaborate 7 wall maps of the regions of Poland on the scale of 1:250,000 with the hypsometric relief and selected economic elements. These interestingly elaborated maps were published in the years 1960–1965 (Fig. 2). Later on, the subjects of masters' theses included an increasing share of the socio-economic maps.

Professor Lech Ratajski (1921–1977) took the leadership of the Chair of Cartography in 1966. He specialised in geography of Africa, was an expert in toponymy and the author of the handbook *Kartografia Ekonomiczna* [Economic Cartography] and *Podręczny Atlas Świata* [Handy World Atlas] also in Polish, as well as of numerous maps, including economic wall maps.

In his didactic work Ratajski gave the Chair a new direction, consisting in elaboration of the socio-economic maps, and later on of the comprehensive wall maps (Bonatowski, Horodyski, 1984), and the studies in the analysis of cartographic methods of presentation and the theory of cartography, as the subjects of the masters' theses.

It was exactly the theory of cartography that became the field of activity of Professor Lech Ratajski when he was working as the head of the Chair of Cartography. The most known is the elaboration of the concept of cartology understood as a system of theoretical cartography from the point of view of functioning of the cartographic information transmission, and simultaneously as the theoretical superstructure over the practical cartography (Ratajski, 1973b), see Fig. 3. Research in this direction was connected with the nomination of Ratajski as the chairman of the Commission on Cartographic Communication (Commission V) of the International Cartographic Association. Its first meeting took place in September 1973 in Warsaw, and the last one with his participation — in Hamburg. We should also mention the work of L. Ratajski on standardisation of cartographic signs. In this domain he referred to, and creatively used — the experience from and the studies related to the grammar of natural language, presenting interesting proposals for the system of signs for the economic maps (Ratajski, 1971).

An illustration of the research work conducted then at the Chair is constituted by the first volume of the series published by the Faculty of Geography and Regional Studies, *Prace i Studia Geograficzne* [Studies in Geography], this volume bearing the title *Theory of Cartography*. This book contains the recollections on Lech Ratajski, having passed away in November 1977, along with the bibliography of his scientific publications, and, besides, also one of his last reports, *Developed Concept of Cartology*, as well as the summaries of three doctoral dissertations of the employees of the Chair: *Cartographic Aspects of Economic Regionalization* (J. Paślawski), *Functional Analysis of Geographic Atlases Treated as a Specific Form of Cartographic Communication* (B. Horodyski), and *Semantic Aspects of Map*

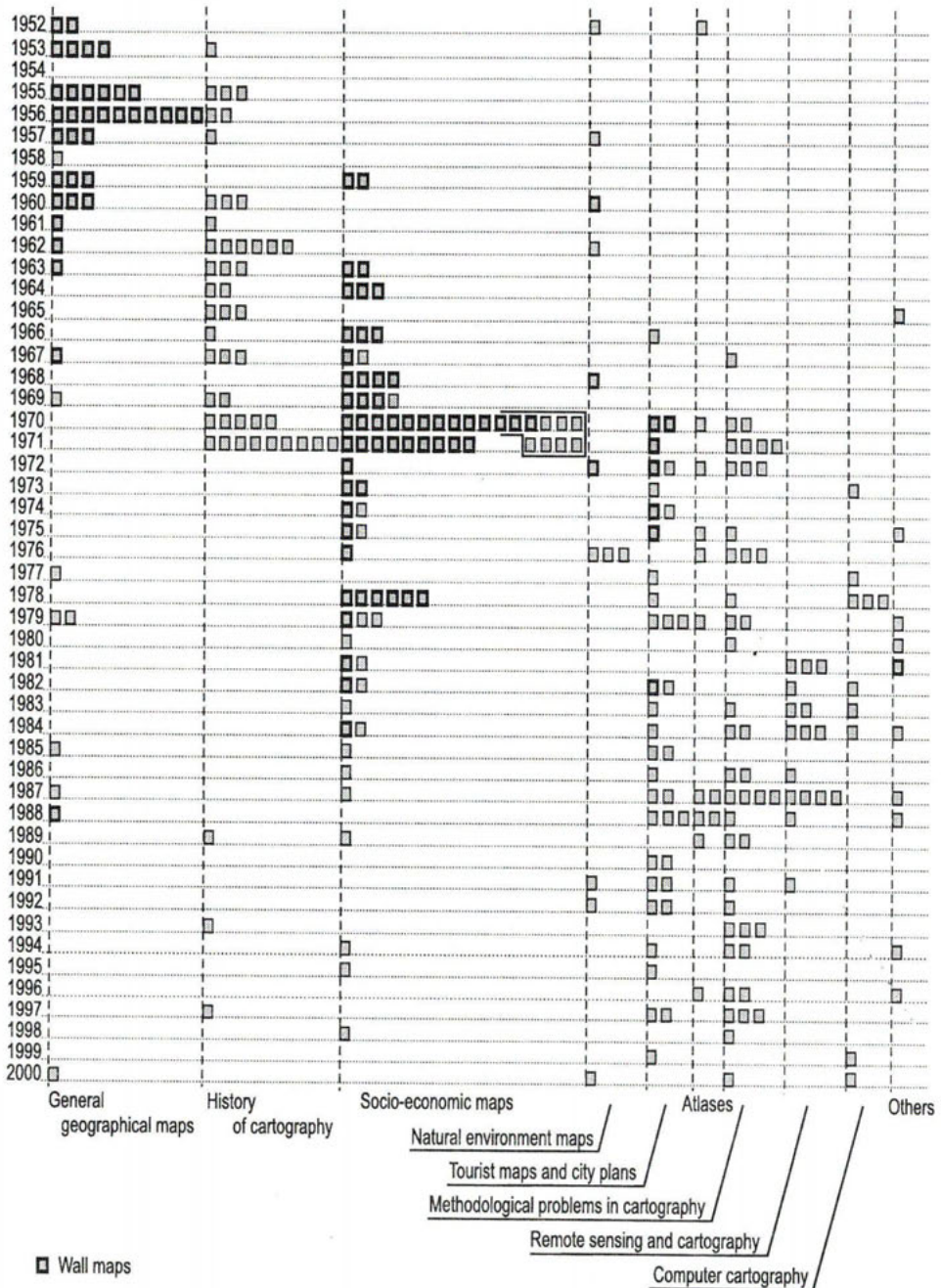


Fig. 1. In the years 1952–2000 317 masters' theses were completed at the Chair of Cartography.

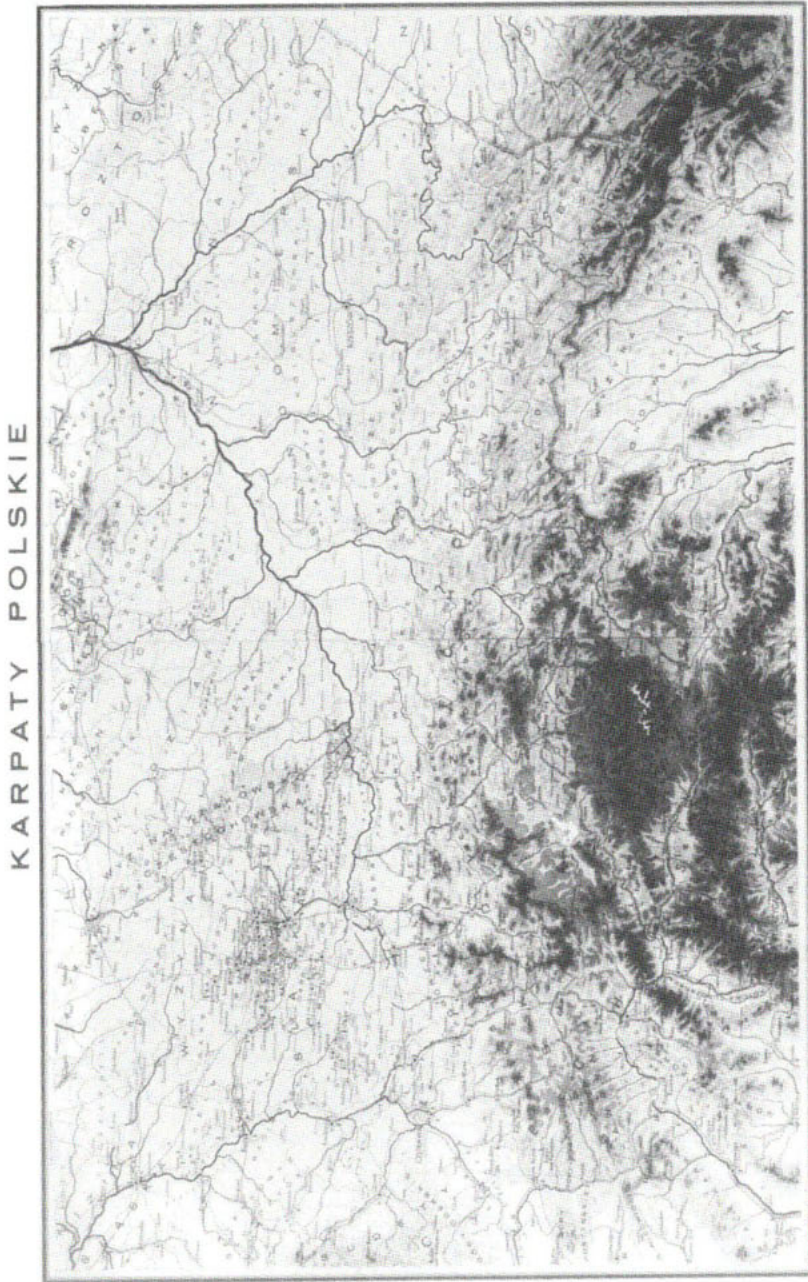


Fig. 2. One of the seven wall maps of the regions of Poland on the scale of 1:250,000.

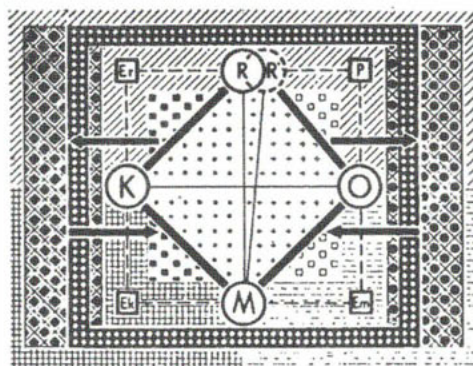
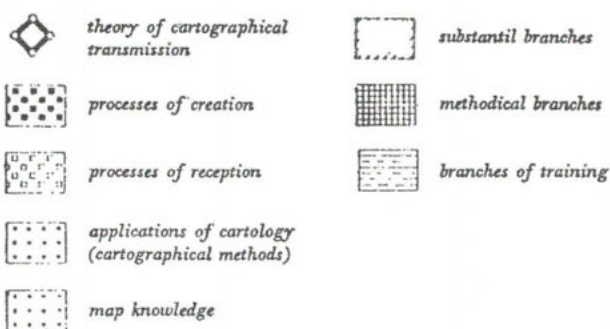
*The research structure of theoretical cartography***Fig. 3 Model of cartography****III Applied cartography**

Fig. 3. The structure of theoretical cartography according to L. Ratajski (1973).

*Efficiency* (W. Ostrowski). Another example of the existing scientific interests is the paper by W. Ostrowski (1970) published in *Polish Cartographical Review*, which provided a development over the idea of metacartography, forwarded in the then famous book by W. Bunge — *Theoretical Geography*.

After the death of Professor L. Ratajski in 1977 his close associate, Professor Bogodar Winid, became the new head of the Chair. Bogodar Winid (1922–1996) specialised also in African problems, and worked together with L. Ratajski on a number of economic wall maps, as well as the previously mentioned handbook of economic cartography. At that time the Chair was

extended by inclusion of the Laboratory of Geographical Photointerpretation. Owing to this, students of cartographic specialisation could get better acquainted with this domain and prepare masters' theses dealing with it.

International contacts and collaboration were being continued, and so, in April 1979 an international conference was organised "On the Role of Cartographic Journals During the Scientific and Technological Revolution". Proceedings of this conference were published in *Polish Cartographical Review*, No. 4, of 1979.

In autumn 1980 Professor Wiktor Grygorenko, a specialist in mathematical cartography and an author of an ample handbook on the edition of topographical maps, became the head of the Chair of Cartography. He had worked for a long time in the Military Topographical Service, where he took part in the elaboration of the world atlas known in the West as the *Pergamon World Atlas*. During his work at the Chair he elaborated the structural concept of the cartographic image, with the objective of developing the numerically based automated drawing and interpretation of the maps.

At the beginning of the 1980s the majority of Polish cartographers were involved in the preparations to The XI<sup>th</sup> International Cartographic Conference of ICA, planned as a big event to take place in the first days of August 1982. Imposition of the martial law in Poland in December 1981 slowed down these preparations. Ultimately, the conference took place on the dates planned, and the employees of the Chair were actively engaged in the preparations to this event.

During the conference W. Grygorenko presented an interesting paper on *A Cybernetic Model of Cartographic Communication*. The paper described quite a complex model of information transmission as a cybernetic system, in which information flow takes place with the participation of human consciousness, playing the role of the controlling factor (Fig. 4), see Grygorenko (1984).

A nice accent of the conference, which took place in Warsaw, was that Professor Stanisław Pietkiewicz, the founder of the Chair of Cartography at the University of Warsaw, was granted the title of the Honorary Fellow of the International Cartographic Association.

Until the imposition of the martial law in Poland in December 1981 the Chair had been visited by numerous foreign guests. Employees of the Chair, as well as students, had the opportunity of listening to the lectures given by, in particular, E. Arnberger, J. Bertin, H. Bosch, W. Koch, I. Kretschmer, J.L. Morrison, K.A. Salichtchev. The Chair hosted the following meetings of the Commissions of the ICA: the Working Group on Communication in Cartography (1971), Cartographic Communication (1973), and Commission on Continuing Education in Cartography (1982).

In the 1980s the cartographic specialisation takes already three years, since it is being started by students after two years of general geographical studies. The primary direction of teaching is education of geographers-cartographers, editors of general geographic as well as thematic maps. The

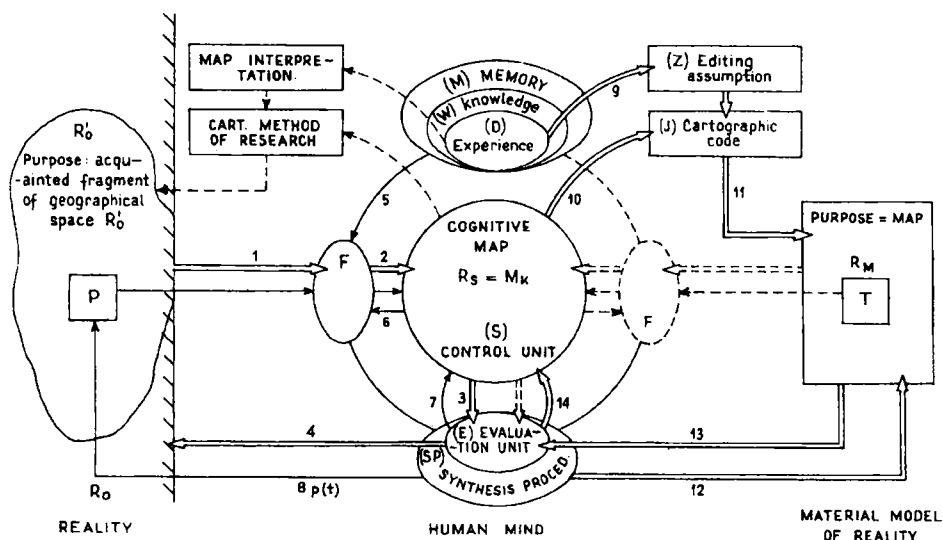


Fig. 4. The cybernetic model of information transmission of W. Grygorenko (1984).

share of tourist maps and city plans among the masters' theses increases, computing equipment is more and more often made use of.

Although there are several cartographic institutions in Warsaw, it is the Chair of Cartography that became the centre and the meeting place for the cartographers, not necessarily only those from Warsaw. Since 1969 the national cartographic conferences were held, and since 1975 every five years the meetings have been organised in collaboration with the Head Office of Geodesy and Cartography on the state and perspectives of Polish cartography. Starting with 1978 more than 200 meetings took place at the Chair, open for all those interested. During this time more than 100 persons presented the broadly understood problems of cartography — of whom a vast majority were the employees of the Chair.

The employees of the Chair of Cartography took also part in the scientific expeditions of explorative character. In the years 1980–1993 B. Horodyski participated in four consecutive academic expeditions to Spitsbergen, while K. Kossobudzki — in three of those and in two expeditions to Mongolia, organised by the Institute of Geography and Spatial Organization of the Polish Academy of Sciences. The output from these trips was constituted by the interesting cartographic elaborates (Horodyski, 1988, 1990; Horodyski, Kossobudzki, Musiał, 1988).

Currently (as of January 1<sup>st</sup>, 2000) the Chair of Cartography employs 12 persons, of whom two are full professors, five doctors, three technical assistants, and two doctoral students. Since 1997 the Chair is headed by Professor J. Paślawski. The employees of the Chair conduct teaching activities for all the geographers — more than 200 students — at the elementary level ("Basic Cartography and Topography"). Then, there is the stage of

teaching activities for students of various specialisation directions, like, in particular, "Thematic Cartography" for the economic and the regional geography specialisation directions. The specialised teaching in cartography starts at the III<sup>rd</sup> year of the study of geography. Their fundamental purpose is to prepare the graduates in a possibly broad manner to edition of geographical maps. Students have at their disposal a computer laboratory and a cartographic reproduction laboratory. Thus, for instance, a map prepared during the exercises in "Map elaboration" is being technically prepared by the students in such a way as to allow its printing on a simple offset printing machine. The total set of the specialisation activities takes some 2000 hours and is conducted for 25–30 students during three years of specialisation study.

The range of subjects of the masters' theses is quite broad, as illustrated in Fig. 2. Students elaborate maps (tourist maps, atlas maps), carry out historical studies, conduct analyses concerning the cartographic method of research, and the methods of presentation. It is especially the latter problem that in the context of the already far advanced computerisation is one of the most appreciated directions of research within the Chair. A particular interest is paid to the diagram maps and the choropleth presentation. Studies of Polish newspaper cartography and of the school cartography are being conducted as well, the latter for quite a long period already.

Until now 316 persons graduated from the cartographic specialisation, 13 persons were granted the doctoral degree, three — obtained habilitation, and four persons received during their work at the Chair the title of full professor.

The graduates of the cartographic specialisation find jobs in cartographic publishing houses, in the planning bureaus dealing with physical planning, in administration, and in education.

#### REFERENCES

- Bonatowski G., Horodyski B., 1984, Comprehensive Wall Maps, *Miscellanea Geographica*, 1, 288–298.
- Grygorenko W., 1976, Structural Interpretation of the Graphic Image of a Map and Automatic Machine Graphics, *The Polish Cartography*, GUGiK, 101–113.
- Grygorenko W., 1982a, Development of the Cartographical Education in Poland, *Int. Yearbook of Cartography*, 22, 70–77.
- Grygorenko W., 1982b, Parametrical Model for Composition of Content and for Classification of Geographical Maps, *The Polish Cartography*, GUGiK, 9–24.
- Grygorenko W., 1984, A Cybernetic Model of Cartographic Communication, *Int. Yearbook of Cartography*, 24, 95–106.
- Grygorenko W., 1986, Theoretical Problems of General Cartography, *Miscellanea Geographica*, 2, 327–333.
- Grygorenko W., 1987, Mathematical Basic of Polish Topographic Maps for Economic Purposes, *The Polish Cartography*, GUGiK, 44–57.
- Grygorenko W., 1990, Cognitive and Methodological Attributes of Cartography, *Miscellanea Geographica*, 4, 229–236.
- Grygorenko W., 1992, The Mapping as a Method of Scientific Research, *Miscellanea Geographica*, 5, 227–231.

- Horodyski B., 1988, *Geomorfological Map of Nordenskiöld Land (West Spitsbergen) 1:75 000*, Chair of Cartography, Warsaw University.
- Horodyski B., 1990, Cartographic Aspects of Geomorphological Map of Polar Areas, *Miscellanea Geographica*, 4, 63–69.
- Horodyski B., Kossobudzki K., Musiał A., 1988, The Use of Panoramic Ground-photographs in Geomorphologic Mappings of Polar Regions. Example from West Spitsbergen, *Miscellanea Geographica*, 3, 79–83.
- Kowalski P., 1986, Transformations of the Complex General Economic Map in School Atlases, *Miscellanea Geographica*, 2, 343–347.
- Kowalski P., 1988, General Economic Maps in School Atlases at the Beginning of 20th Century, *Miscellanea Geographica*, 3, 387–396.
- Kowalski P., Paślawski J., 1997, Polish Journalistic Cartography in 1995, *Berliner Geowissenschaftliche Abhandlungen. Reihe C: Kartographie*, Band 16, 229–238.
- Maculewicz W., 1973, 20 lat działalności naukowej i dydaktycznej Zakładu Kartografii Uniwersytetu Warszawskiego [Twenty Years of Scientific and Didactic Activity of the Cartographical Section of the Institute of Geography, Warsaw University], *Polski Przegląd Kartograficzny*, 5, 1, 18–23.
- Ostrowski W., 1970, Metakartografia — nowe spojrzenie na kartograficzną formę prezentacji [Metacartography — a New Outlook on Cartographical Form of Presentation], *Polski Przegląd Kartograficzny*, 2, 2, 49–62.
- Ostrowski W., 1986, The Criteria of Cartographic Method Classification, *Miscellanea Geographica*, 2, 335–341.
- Ostrowski W., Stankiewicz M., 1999, The new Generation of Polish Topographical Maps, *The Polish Cartography*, 129–137.
- Paślawski J., 1982, Towards a Geographical Method of Class Selection for Choropleth Mapping, *The Polish Cartography*, GUGiK, 51–67.
- Paślawski J., 1983, Natural Legend Design for Thematic Maps, *The Cartographic Journal*, 20, 1, 36–37.
- Paślawski J., 1984, In Search of General Idea of Class Selection for Choropleth Maps, *Int. Yearbook of Cartography*, 25, 159–171.
- Paślawski J., 1989, Is the Choropleth Presentation Really a Map?, *Int. Yearbook for Cartography*, 29, 209–215.
- Pietkiewicz S., 1930, *Les méthodes du figuré du relief sur les cartes*, Biblioteka Służby Topograficznej, 5, Warszawa (Reprint 1998).
- Pietkiewicz S., 1958, Um eine einheitliche Auffassung der Stadtgrößen auf geographischen Karten, *Peterm. Geogr Mitt*, B. 102, H.1, 61–65.
- Pietkiewicz S., 1960, Analyse de l'exactitude de quelques cartes du XVI<sup>e</sup>, XVIII<sup>e</sup>, et XIX<sup>e</sup> ss., couvrant les territoires de l'ancienne Pologne, *Przegląd Geograficzny*, 32, Suppl., 21–27.
- Pietkiewicz S., 1964, Moraines and Dunes on Small-scale Maps, *Geographia Polonica*, 2, 257–259.
- Pietkiewicz S., 1968a, Differential Isochrones: a Map of the Progress of Temporal Accessibility, *Geographia Polonica*, 13, 5–8.
- Pietkiewicz S., 1968b, The Evolution of the Map Definition During the Last Hundred Years, *Actes du XI<sup>e</sup> Congrès Internat. d'Histoire des Sciences*, 4, 272–275, Wrocław.
- Prace i Studia Geograficzne*, 1979, T. 1. Studies in Geography, Vol. 1. Theory of Cartography, Wydawnictwa Uniwersytetu Warszawskiego, Warszawa.
- Ratajski L., 1967, Phénomènes des points de généralisation, *Int. Yearbook of Cartography*, 7, 143–152.
- Ratajski L., 1968, A Model of Cartographical Methods, *Geographia Polonica*, 12, 372–378.
- Ratajski L., 1970, The Point of Change for Methods in Thematic Cartography, *Geographia Polonica*, 18, 177–182.
- Ratajski L., 1971, The Methodical Basis of the Standardization of Signs on Economic Maps, *Int. Yearbook of Cartography*, 11, 137–159.
- Ratajski L., 1973a, *Metodyka kartografii społeczno-gospodarczej*, PPWK, Warszawa.
- Ratajski L., 1973b, The Research Structure of Theoretical Cartography, *Int. Yearbook of Cartography*, 13, 217–228.

- Ratajski L., 1976, Cartology, its Developed Concept, *The Polish Cartography*, GUGiK, 7–23.
- Ratajski L., 1977, Loss and Gain of Information in Cartographic Communication, *Beiträge zur theoretischen Kartographie. Festschrift für E. Arnberger*, Wien, 217–227.
- Ratajski L., Siwek J., 1977, Regular Density Network, *Int. Yearbook of Cartography*, 17, 138–154.
- Ratajski L., Winid B., 1963, 2<sup>nd</sup> ed. 1989, *Kartografia ekonomiczna*, PPWK, Warszawa.
- Siwek J., 1992, On some Reliability Factors in Cartographic Research, *Miscellanea Geographica*, 5, 233–237.
- Siwek J., 1994, Research Aspects of Cartography, *Miscellanea Geographica*, 6, 249–252.