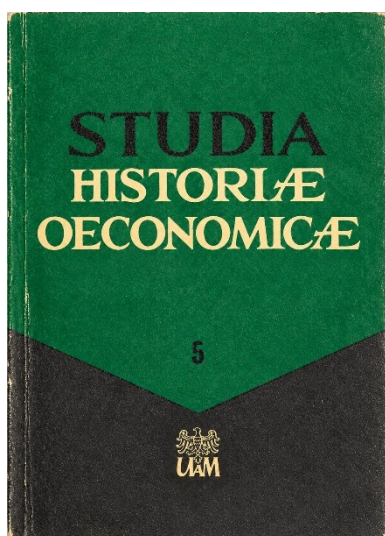




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CHANGES IN DISTRIBUTION OF INDUSTRY IN THE AREA OF POLAND IN THE YEARS 1860 - 1965

1. Introductory remarks

The process of industrialization, which has been developing at an increasing rate since the time of the 19th century industrial revolution, was accompanied by great changes in the distribution of industry on the European Continent as well as within particular countries. The investigation of those changes is more difficult in the area of present-day Poland than it is in other countries because the present Polish territories up to 1945 belonged to several political systems with different principles of acquisition and classification of statistical data concerning industry. Even the very notion of industry was different in each of the countries comprising parts of Polish territories in the hundred years under discussion. An additional difficulty in the investigation of this problem lies in the frequent changes of the administrative divisions of Poland.

Considering the above reasons, the undertaking of research work dealing with the distribution of industry in the area of contemporary Poland requires time-consuming calculations in order to achieve a relative comparability between historical and contemporary Polish statistical data.

In the investigation of this problem the notion and system of classification of industry accepted in Poland nowadays were taken by the author as the basis for the comparison of the statistical data. Because of the lack of any better standard the number of employees was mainly used to measure industry in the period discussed. The lack of complete data concerning industrial handicraft and cottage-work caused the restriction of the investigation to industry in the limited sense of the word. The number of five employees was taken as a criterion for differentiation between industry and handicraft. Power stations, gas works, brick-yards, saw-mills, mills, breweries, alcohol distilleries and starchworks employing less than five workers were also considered as industrial works.

A proper analysis of the changes in distribution of industry was mainly based on the data, collected by the author, concerning the number of em-

ployees in industry in the whole area of present-day Poland and in particular industrial centres, that is in places concentrating more than 100 industrial workers. These data were collected for each of the following eight periods: 1860/61, 1882, 1895/1902, 1907/10, 1925, 1938/39, 1946 and 1960. The choice of the above periods depended to a high degree on the accessibility of the statistical data.

Several tables and maps constituting an indispensable element of analysis were prepared by the author on the basis of the relatively comparable data concerning employment in industry. This article includes two tables approximately illustrating the process of spatial concentration of industry in the area of contemporary Poland and the growth of employment in industry in the area of today's industrial centres, as well as four maps illustrating the distribution of industrial districts in the years 1860, 1910, 1938, 1960.

Although the first industrial works of a factory kind began to appear in the area of present-day Poland as early as the first half of the 19th century, the research covers the period since 1860 because of the lack of complete statistical data. It should be added that the 60s of the 19th century are generally considered in historical investigations as the beginning of the capitalist system in Polish territories.

In the process of industrialization of the Polish territories in the years 1860 - 1960, it is possible to distinguish three main periods covering the years 1860 - 1918, 1919 - 1945, and 1945 - 1960, taking into consideration the speed and range of development of industry. This division was also used in the investigation of the changes in the distribution of industry.

2. The Years 1860 - 1918

Although at the beginning of the discussed period there occurred considerable disproportion in industrialization of the territory of present-day Poland, industry was still dispersed around small centres (map No. 1). The data of the table 1 show that more than 75% of all industrial workers in the area of contemporary Poland were employed in 1860/61 in centres of less than one thousand workers. The largest industrial centres of that time were Łódź, Wrocław and Warsaw, where the number of the industrial employees did not exceed seven thousand people. This considerable dispersion of industry was strictly connected with its branch structure whereby nearly 50% of total employment was concerned with the food, mineral and timber industries. These industries used mainly the most common raw materials. Besides, the dispersion was caused by the fact that small manufactories still dominated in all branches of industry. They could not form large agglomerations because of the kind of sources of energy used for production (power of people and animals, energy of wind and water).

1860

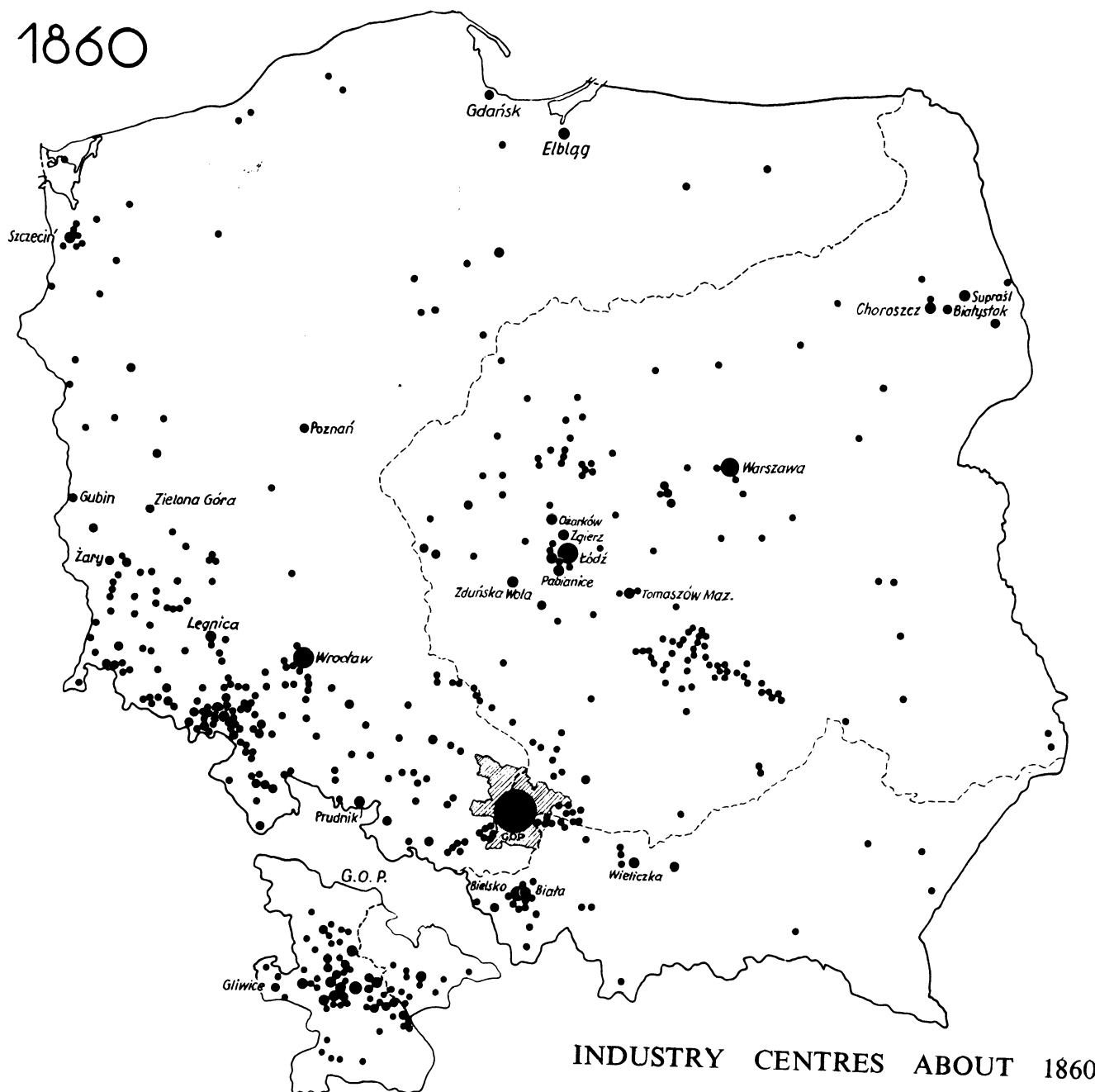


Abb. 1

The quick development of industry of the factory type in the first stage of capitalistic industrialization in the years 1860 - 1918 heightened disproportions in the degree of industrialization of the Polish territories and in the distribution of industry (cf. maps No. 1 and 2). In the years 1860/61 to 1907/10 the number of employees in industry in the area of contemporary Poland increased from 288,000 to 1,189,000 i. e. four times. The development of factories was accompanied by two closely connected processes: the concentration of technical production in big plants and the spontaneous spatial concentration of industrial plants. The main spring of both of them was technical progress and especially the popularization of steam power in industry and communication. The application of steam power in industry enabled the building of large mechanized works at low production costs and its application in communication, especially in railways, facilitated the cheap transport of raw materials and industrial products to previously unaccessible markets. Apart from technical progress which is a factor of a general character, numerous local conditions also greatly influenced the concentration of industrial works in particular areas. These conditions were, first of all, the character of the geographical environment, for example, deposits of rare mineral raw materials (pit coal, iron ores, ores of non-ferrous metals, etc.), local markets (eg. a big town), popular traditions of the handicraft industry, economic profits resulting from agglomeration and so on. This last factor was of vital importance in the process of the spatial concentration of industry.

The rapid increase of the number of plants and their sizes in centres already existing at the beginning of the discussed period was the expression of the interrelated processes of the spatial and technical concentrations of industry. At the same time there were formed some new centres with largely concentrated industry, especially in areas with deposits of rare raw materials and in the neighbourhood of big towns. As a result about 1910 more than 75% of the total number of employees in the area of present-day Poland were to be found in centres concentrating more than one thousand of industrial workers. Almost 31% of that number were in centres of more than ten thousand of industrial workers (table No. 1).

Simultaneously with the concentration and increase of industrial centres in some areas, the production links connecting those centres were strengthened. In this way there emerged spontaneously industrial districts, that is to say, groupings of neighbouring and closely connected industrial centres of high production potential. Eleven groupings of industrial centres of more than twenty thousand industrial workers existed in the area of contemporary Poland at the outbreak of the First World War. These groupings might be called industrial districts. The majority (six) of the industrial districts, namely: Upper-Silesia, Sudetes, Wrocław, Zielona Góra-Żary, Szczecin and the smal-

Table 1

Industrial centres in the area of present-day Poland according to the number of industrial employees in the years 1860 - 1960

Year		Area of Poland	Industrial centres with the number of employees in thousands						
			less than 1 ^x	1-5	5-10	10-20	20-50	50-100	more than 100
1860/61	o	.	.	27	3	—	—	—	—
	z	288	218	50	20	—	—	—	—
	%	100.0	75.7	17.4	6.9	—	—	—	—
1907/10	o	.	.	154	23	9	1	3	—
	z	1189	319	341	162	132	27	208	—
	%	100.0	26.8	28.7	13.6	11.1	2.3	17.5	—
1938/39	o	.	.	186	25	13	4	2	1
	z	1568	412	405	169	195	110	162	115
	%	100.0	26.2	25.9	10.8	12.6	7.0	10.4	7.3
1946	o	.	.	126	16	9	12	—	1
	z	1235	282	272	91	123	346	—	121
	%	100.0	22.8	22.2	7.4	10.0	27.9	—	9.7
1960	o	.	.	281	57	29	16	6	2
	z	3129	419	581	387	395	545	418	384
	%	100.0	13.3	18.8	12.4	12.6	17.4	13.4	12.3

o — number of centres

z — number of industrial employees in thousands

% — percentage of industrial employees in the country

x — industrial centres and localities with industrial plants

lest Rybnik district (22,000 industrial workers in 1913) were formed in the Prussian Partition of Poland, which was industrialized to the highest degree. Four districts: Łódź, Warsaw, Dąbrowa and Częstochowa were formed in the Russian Partition and only one — Bielsko district — was formed in the Austrian Partition which was industrialized to the smallest degree. Three of the above mentioned districts, that is, Upper-Silesia, Dąbrowa and Rybnik were formed because of deposits of mineral raw materials, mainly pit coal. Three further districts (Sudetes, Zielona Góra-Żary, and Częstochowa) were formed due to both their local raw materials (pit coal and brown coal, iron ores and raw materials for the building industry) and to the handicraft textile industry which was developed there even before the appearance of manufacturing industry. Two industrial districts (Łódź and Bielsko) were formed mainly on the basis of the handicraft textile industry developed before the establishing of manufacturing industry. The last three districts (Warsaw,

Wrocław, and Szczecin) were formed as a result of being big towns and communication centres, that is, Warsaw, Wrocław and Szczecin. In the forming of the Szczecin district the requirements of the sea economy also played an important role.

The largest concentration of industry existed in the area of the Upper Silesian Coal Basin which was divided until the First World War among three invading countries: Prussia, Russia and Austria. The Upper Silesian industrial district alone composed before the First World War about 14% of the total employment in industry on the Polish territories. Together with the Rybnik district and neighbouring Dąbrowa district in the Russian Parti-

Table 2

Increase of the number of industrial employees in the area of present-industrial districts of Poland in the years 1860 - 1965 (in thousands)

Industrial district of:	1860/61	1907/10	1938/39	1946	1960	1965
1. Upper Silesia including Dąbrowa Basin	35 3	207 45	253 46	296 57	519 90	566 102
2. Rybnik	2	14	22	34	65	89
3. Bielsko	9	26	34	40	101	116
4. Jaworzno-Chrzanów	3	18	24	36	84	105
5. Cracow	3	12	24	32	101	125
6. Częstochowa	1.5	33	42	38	88	106
7. Opole	4	30	35	18	76	92
8. Łódź	17	118	155	160	307	340
9. Warsaw	10	90	137	48	247	320
10. Old Poland	5	19	50	33	118	151
11. Sudetes	44	135	150	110	205	250
12. Wrocław	9	65	75	24	90	114
13. Poznań	1.2	14	28	40	85	108
14. Bydgoszcz	1	19	25	34	92	125
15. Gdańsk	1.5	22	30	26	84	120
16. Szczecin	3	36	52	9	45	63
17. Zielona Góra — Żary	12	50	53	14	42	56
18. Ostrów — Kalisz	1.5	7	9	13	36	50
19. Lublin	0.4	4	7	8	34	44
20. Rzeszów — Tarnów	0.8	4	9	12	59	81
21. Sandomierz — Tarnobrzeg	0.2	0.9	4	5	27	40
22. Carpathian	1.0	10	16	17	35	51

tion they composed more than 20% of the total employment. The Sudetes, Łódź and Warsaw districts also became large industrial agglomerations of more than 100,000 of industrial employees in 1913. The industrial agglomeration in the remaining districts was much smaller (table 2).

All industrial districts formed before the First World War covered about

9% of the area of contemporary Poland and they composed in 1910 about 65% of the total industrial employment, whereas in 1860 only 49%. These data testify to a considerable growth in the spatial concentration of industry.

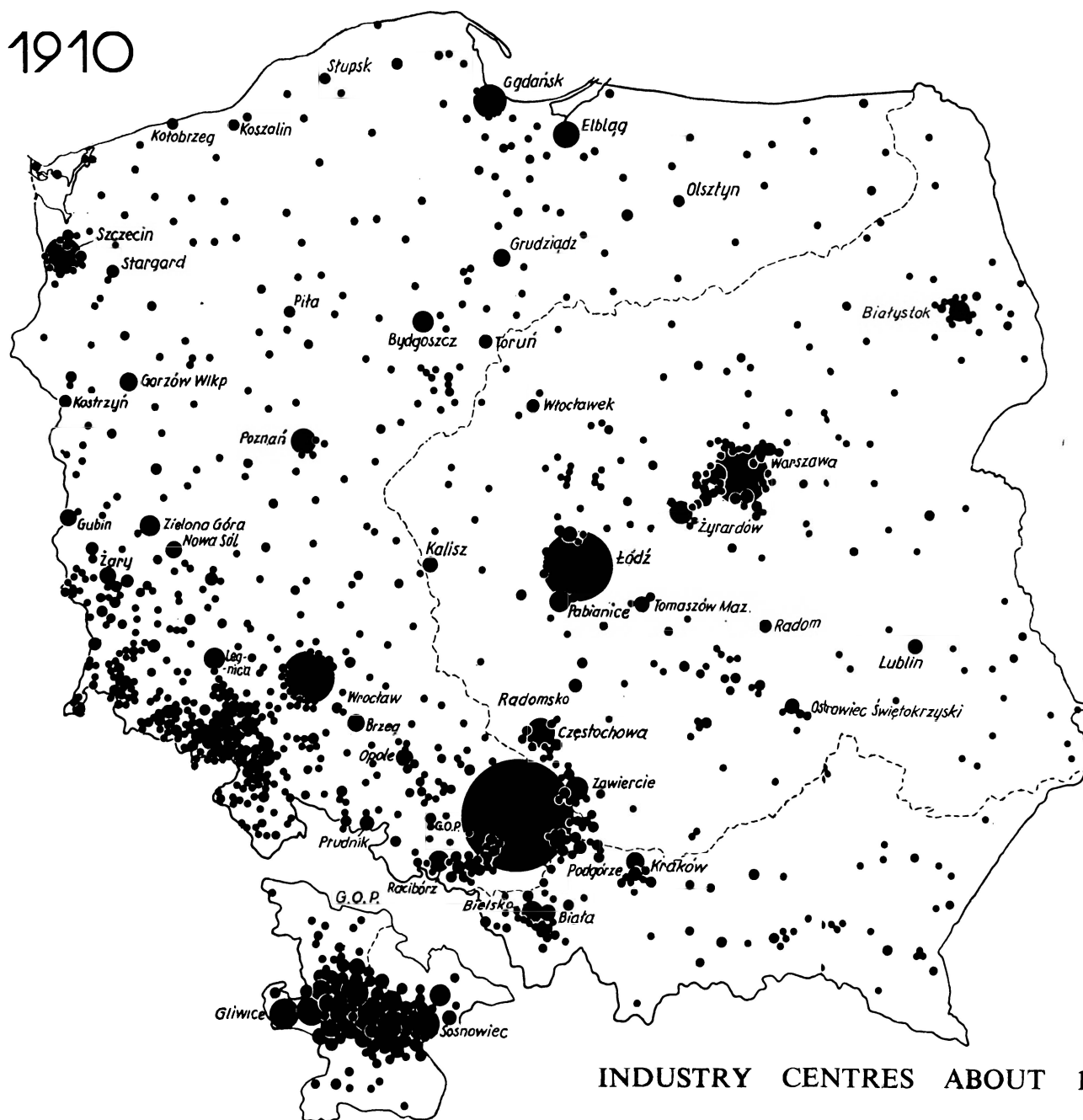
It should be added that at the outbreak of the First World War six other small groupings of industrial centres were at a more or less advanced stage of development. They were: 1) The Old Polish Basin (based on iron ores and the traditions of the metal industry), 2) The Jaworzno-Chrzanów Basin (centred on deposits of coal and zinc and lead ores), 3) The Carpathian Oil Field (possessing deposits of crude oil), 4) The region of Cracow (using the qualified man power and answering the needs of the big town as well as of the deposits of salt), 5) The region of Opole (which had the deposits of raw materials for the building industry), and 6) The region Białystok (centred round the popular traditions of the textile industry). Moreover, before the First World War three considerable independent industrial centres developed in three big towns: Gdańsk, Elbląg and Poznań. The first two functioned also as ports. The remaining Polish territories before the First World War were industrialized to a very small degree and centres comprising more than one thousand industrial workers were exceptional (map No. 2).

It should be stressed that the majority of the mentioned above industrial agglomerations were situated in the southern part of the country because this part had more natural resources than the northern part. A few small industrial agglomerations in the northern part of the country were formed almost exclusively in big towns and communication centres. A comparison of maps 2 and 4 shows that the contemporary spatial structure of industry in Poland was formed in its outline before the First World War.

3. The Years 1918 - 1945

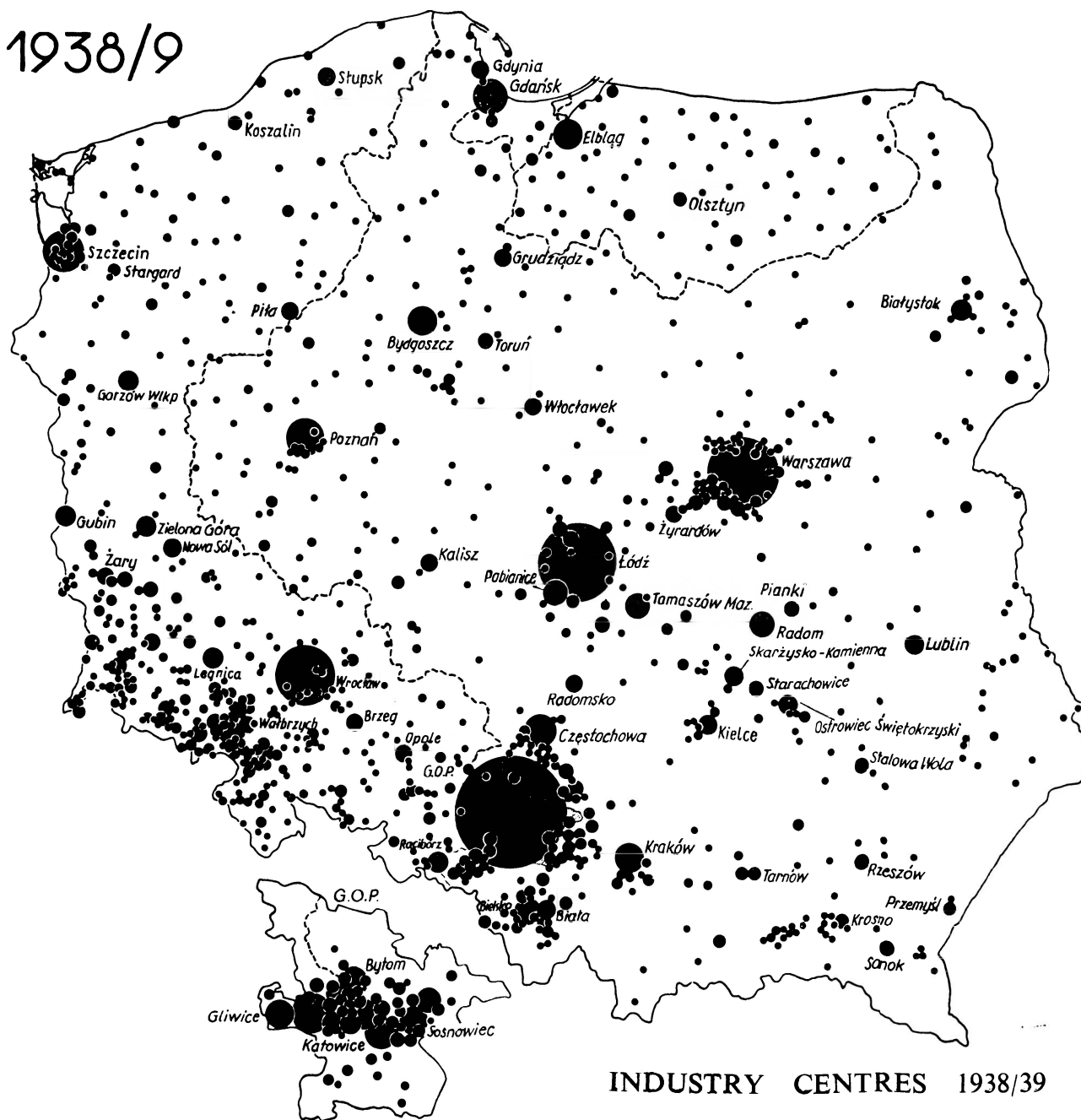
The inter-war period did not bring about any important changes in the distribution of industry in the area of present-day Poland. The process of the spatial concentration of industrial plants made very slow progress because of the weak development of industry, interrupted by economic crises. In the years 1907/10 - 1938/39 the industrial employment in the area of present-day Poland increased from 1,189,000 to 1,568,000, that is, 32% (44% of this increase fell on the Old Territories and 18% — on the Western and Northern Territories). Apart from economic crises, the heavy losses suffered during the First World War and the loss of traditional markets considerably hampered the development of industry in the Old Territories. In the Western and Northern Territories that development was set back

1910



INDUSTRY CENTRES ABOUT 1910

1938/9



INDUSTRY CENTRES 1938/39

by the influx of goods produced by the industry of the central and western provinces of Germany, which were industrialized to a high degree. The data included in the table No. 1 show the small progress of the spatial concentration of industry in the period discussed.

Out of all the industrial districts formed before the First World War it was only in the Warsaw district and the western part of the Upper Silesian Industrial District (remaining until 1945 within the German borders) that the increase of industrial employment was more rapid than the average in the country. In the case of the Warsaw district the increase resulted first of all from the fact that in 1918 Warsaw regained its functions as the capital. In the case of the Upper Silesian Industrial District it was caused by the economic policy of Germany which, being in the state of a tariff war against Poland, reduced after 1925 the import of coal from Poland and, at the same time, largely expanded coal mining in the German part of the Upper Silesian Industrial District.

It should be stressed that the industrial centres grouped in the Old Polish Basin, in the region of Cracow and in the Jaworzno-Chrzanów Basin developed considerably in the years between the wars. The metal industry (mainly for the military purposes) developed on a large scale in the Old Polish Basin and its neighbourhood, various branches of industry (mainly the engineering and electro-technical branches of the metal industry) — in the region of Cracow and the coal mining and metal industry — in Jaworzno-Chrzanów Basin. Thanks to a considerable increase in both the production potential and the integration of the industrial centres the above mentioned territories could be treated as industrial districts as early as the end of the inter-war period. In 1938 the industry of the Old Polish Industrial District employed 50,000 workers and the Cracow Industrial District and the Jaworzno-Chrzanów Industrial District employed 24,000 workers each.

Apart from the mentioned areas the industry of Poznań was also largely developing in the inter-war period. Moreover a new industrial centre and a port were built in Gdynia and in 1936 the building of the so-called Central Industrial District was started. It was situated in the agricultural area between the Vistula and San rivers for the strategic reasons. According to the official plan the military industry was to dominate in this district. The building of the Central Industrial District was interrupted by the outbreak of the Second World War. Only a few big works (mainly in Stalowa Wola, Rzeszów, Dęba, Dębica and Mielec) were completed in this area. The industrial capital expenditure in the Central Industrial District originated the industrial agglomerations there, which developed on a larger scale no sooner than after the Second World War.

Maps Nos. 2 and 3 make possible a detailed investigation of the changes in the distribution of industry in the inter-war period.

During the Second World War Polish industry suffered heavy losses caused by war damages, plundering and the purposeful destruction of industrial plants by the German occupants. According to the industrial inventory of GUS (Central Office of Statistics) of July 1945 the average percentage of the damages amounted to 35.1% in industrial buildings, 52.1% in energy production equipment and 45.4% in technical equipment. The centres grouped in the industrial districts of Warsaw, Wrocław, Szczecin, Zielona Góra-Żary and in the regions of Białystok and Gdańsk were destroyed most heavily. Many centres such as: Warsaw, Wrocław, Gdańsk, Elbląg, Białystok, Braniewo, Kołobrzeg, Kostrzyń, Głogów and others were destroyed almost completely. In the two biggest industrial districts of the country that is in the Upper Silesian and Łódź districts the war damages were relatively small.

4. The Years 1945 - 1965

After the Second World War the disproportions in the distribution of industry in Poland were greater than ever before. It was caused by the fact that the war damages were greatest in the industrial centres of the northern less industrialized part of the country. At the end of 1946 the Łódź Industrial District together with the Upper Silesian Industrial District and the neighbouring districts of Rybnik, Bielsko, Jaworzno-Chrzanów and Częstochowa, covering only 5% of the area of Poland, comprised as much as 51% of the total industrial employment of the country (in 1938/39 - only 33%).

The spatial arrangement of industry inherited by the Polish People's Republic was very disadvantageous from the point of view of the efficient and rational functioning of the national economy. That is why the postulate of diminishing of the disproportions in the distribution of industry has been one of the most important aims of Polish economic policy since 1945. The results of this policy were substantial thanks to the nationalization of industry in the first years after the war and to the introduction of a planned economy. In the years 1945 - 1960 which were characterized by an unusual rate of development of industry in Poland (in the years 1946 - 1960 industrial employment increased from 1,235,000 to 3,129,000 workers that is 2.5 times) the disproportions in the industrialization of the country caused by war damages were eliminated. This conclusion can be reached by comparing the data concerning particular voivodeships and counties (powiat). In 1960 the disproportions in the industrialization of voivodeships were even smaller than those in 1938/39.

Nevertheless the diminishing of the disproportions in the industrialization of voivodeships and counties was still accompanied by the process of spatial concentration of industry. The rate of this process became quicker than it

was in the period of capitalist industrialization. The economic profits of the majority of branches of industry resulting from the production on a large scale in big works and from the concentration of works in large agglomerations became so large in the conditions of planned economy that they greatly surpassed the costs of labour and even of transport. This process was mainly accelerated after 1945 by the introduction of uniform prices and salaries in one branch in the whole country, cheap railway fares and the free allocation of building sites by the State to industrial enterprises. As a result in the years 1945 - 1960 Polish industry developed first of all in those places or regions where there already existed some agglomeration of industrial plants. Relatively few big industrial centres were created after the war.

The degree of the increase of the spatial concentration in industry may be illustrated by the fact that in the years 1938/39 - 1960 the participation of the centres of more than one thousand industrial employees in the total industrial employment in the country increased from 73.8% to 87.7% (in the years 1946 - 1960 — from 77.2% to 87.7%) and in the centres of more than 10 thousand industrial employees — from 37.3% to 55.7% (table No. 1). In the year 1938/39 a centre concentrating more than one thousand industrial workers employed on the average 5013 people; in 1960 the number of workers amounted to 6914 (in 1946 - 5810 workers).

In the years 1946 - 1960 about 75% of the total increase of employment in Polish industry was in the centres which in 1946 or 1938/39 comprised more than one thousand industrial workers, and more than 50% of that increase was in the centres which in the above mentioned years comprised more than 5,000 industrial workers. Centres with the processing industry prevailing which in the years 1946 or 1938/39 comprised the biggest number of industrial employees, had after the war the greatest increase in employment in industry (counted in absolute numbers). They were, for example, Warsaw, Łódź, Poznań, Wrocław, Gdańsk and Gdynia and the big towns of the Upper Silesian Industrial District. In most of these towns there even appeared some of the disadvantages of the excessive agglomeration of industry manifested in the shortage of man power, congestion of the means of suburban communication, shortage of water, etc.

Branch profits resulting from agglomeration as well as other factors caused the concentration of 2/3 of the total increase of the industrial employment in Poland in the old industrial districts in the years 1946 - 1960. Table No. 2 shows that the largest industrial districts: Upper Silesia, Łódź and Warsaw had the highest increase in employment, counted in absolute numbers. The districts neighbouring the Upper Silesian district, namely, Bielsko, Jaworzno-Chrzanów, Częstochowa, Rybnik and Opole district, which was formed in the Polish People's Republic, also show a considerable growth of employment. The quick development of industry in those six districts was accompanied

by the growing production connections and relationships with the industry of the Upper Silesian district. As a result all of them became united into one industrial 'macrodistrict', the so-called Upper Silesian-Cracow Industrial District (cf. map No. 4).

This unusual agglomeration, in Polish conditions, of industry in the area of the Upper Silesian Coal Basin and the neighbouring territories plays an exceptional role in the national economy. Although it covers only 5% of the area of Poland, in 1960 it had 1,035,000 of industrial employees, that is, 33% of the total industrial employment (in 1938/39 — 28%). The significance of this agglomeration for the national economy is reflected even better by its participation in the production of several basic goods. In 1965 this participation in coal mining amounted to 97%, in the yield of iron ores — 80%, zinc and lead ores — 100%, in the production of pig-iron — 92%, of steel — 87%, of zinc and lead — 100%, of coke — 80%, of electric energy — 50%, of nitrogenous fertilizers — 76%, of cement — 52%, of lime — 63%, of paper — 40% etc.

Out of the remaining districts formed in the period of capitalistic industrialization the Old Polish Industrial District was also characterized by the substantial increase of industrial employment.

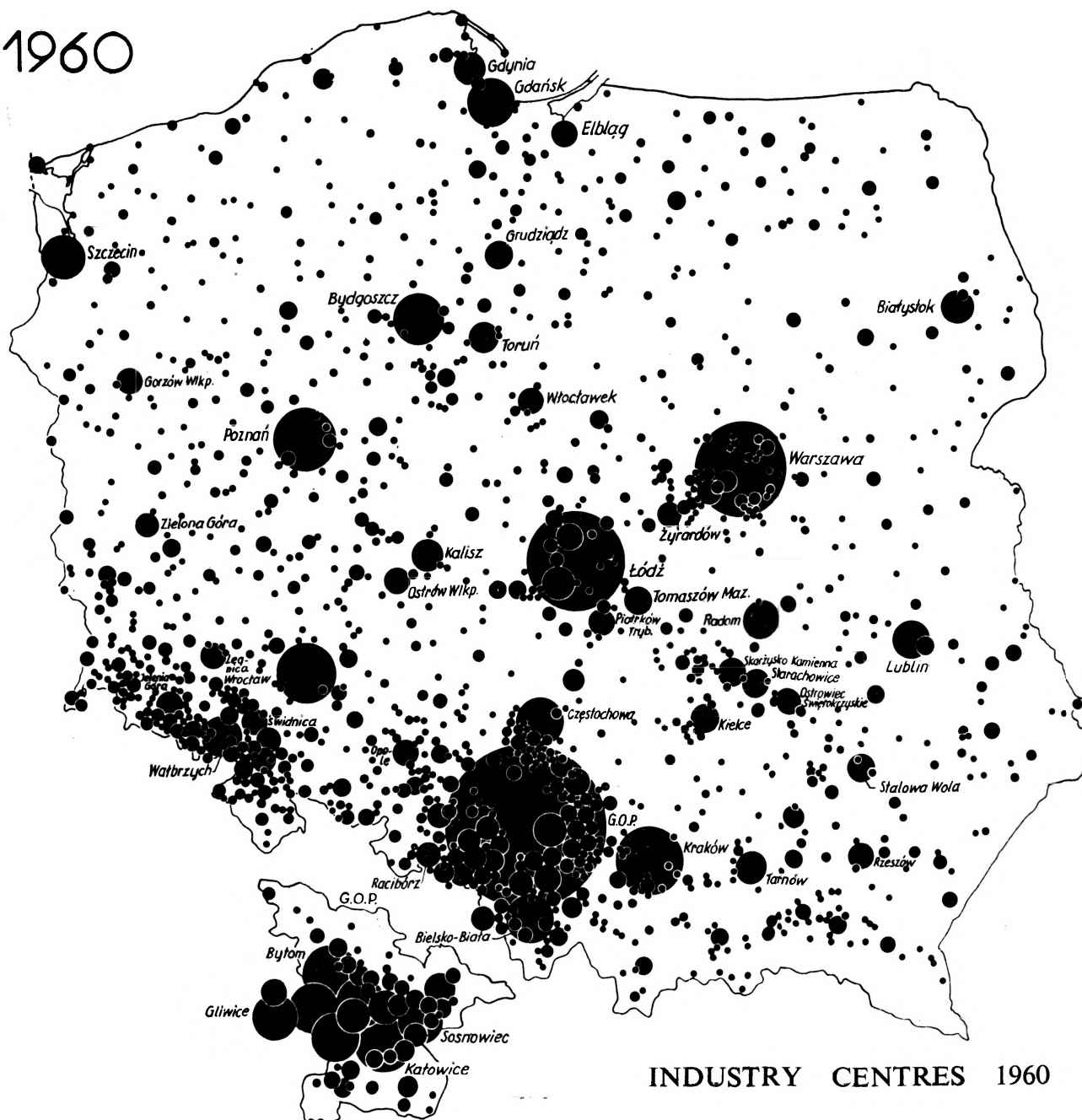
Simultaneously with intense expansion of the old industrial districts in the Polish People's Republic there were formed nine new industrial districts (mainly based on the small pre-war agglomerations). These were: Bydgoszcz, Gdańsk, Poznań, Tarnów-Rzeszów, Ostrów-Kalisz, Lublin, the Carpathian, Sandomierz-Tarnobrzeg and the already mentioned Opole, districts. The Białystok District is also in an advanced stage of development. Besides, in the last fifteen years three new industrial districts were started in the weakly industrialized area around Konin (on the basis of the deposits of brown coal), around Lubin and Głogów (on the basis of the deposits of copper ores) and around Płock (on the basis of crude oil conveyed by oil pipeline from the Soviet Union).

Both old and new industrial districts cover only 18% of the area of Poland, and in 1960 they concentrated 81% of all industrial employees.

The remaining areas of the country showed after the Second World War a very slow development of industry. As result they still remain industrialized to a very small degree.

As a conclusion of the investigations on the spatial evolution of industry in the area of Poland in the years 1860 - 1965 it should be stated that in the three stages discussed of industrialization (1860 - 1918, 1918 - 1945, and 1945 - 1965) there appeared some common tendencies of development apart from some essential differences in the rate of the increase and the character of the

1960



INDUSTRY CENTRES 1960

Abb. 4

structural changes in industry. These tendencies include, first of all, the process of technical concentration of industrial production in the expanding factories and the process of the spatial concentration of industry in the expanding agglomerations. Both these tendencies have the character of secular trends.

Translated by:
D. ZACHARZEWSKA

