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GEOLOGICAL MAP OF THE REPUBLIC OF POLAND (SCALE 1:750,000)

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Poland regained its independence on 18 November 1918 after 123 years of partition, in which the surrounding powers took part: Tsarist Russia, the Austro–Hungarian Empire and Prussia. Just a few months later, on 7 May 1919, the Polish Geological Institute (PGI) was established in Warsaw, whose name in French was *Service Géologique de Pologne*. Its main organiser and first director was Józef Morozewicz (1865–1941), eminent petrographer and mineralogist, professor at the Jagiellonian University in Krakow (Fig. 1). From a historical point of view, these were extremely turbulent times (Jaworowski, 2020). The Communist Soviet Union, which arose from the ruins of Tsarist Russia, was pushing westward, as evidenced by the Polish–Bolshevik War of 1919–1921. Prof. Morozewicz, a patriot and pro-state figure, understood the most important needs of the state very well. Therefore, the first statute of the PGI clearly specified its tasks as a state survey: researching the geological structure of Poland by developing and publishing geological maps and researching mineral deposits (Peryt, 2019).

Figure 1. Józef Morozewicz (1865–1941). Source: PGI–NRI.

The geological structure of Poland was not uniformly explored. The area under Austrian rule was relatively well explored, as there were strong Polish scientific institutions in Krakow and Lviv. The Russian partition was the least explored area. Nevertheless, it should be emphasised that geological cartography in the broadly understood Polish Lands was quite well developed and was carried out not only by Polish geologists, but also by Austrian, Prussian, Russian and even French geologists (Wołkowicz and Wołkowicz, 2014).

Two maps developed for the broadly defined Polish Lands are noteworthy from this period: a Geological Map of the Kingdom of Poland, Galicia and Adjacent Countries (Mapa geologiczna Królestwa Polskiego, Galicyi i Krajów Przyległych), scale 1:1,500,000, by Józef Siemiradzki (1858–1933) and Emil Habdank-Dunikowski (1855–1924), published in 1891 and a General Geological Map of Poland (Przeglądowa Mapa Geologiczna Polski), scale 1:1,500,000, by Józef Grzybowski (1869–1922), published in 1912 (Wołkowicz and Wołkowicz, 2014).

It is noteworthy that the first publication issued by the PGI was the Geological Map of the Central Part of the Holy Cross Mountains (Mapa geologiczna środkowej części Gór Świętokrzyskich), scale 1:100,000 prepared by Prof. Jan Carnocki (1889–1951), published in 1919. This would not have been possible without the intensive work of Polish geologists during the period of partition.

As a result of agreements following the end of the First World War, Poland regained its independence and was redefined within new borders. In addition, numerous geological studies, including cartographic ones, were conducted, but their results were often not published. Compiled by Czesław Kuźniar (1889–1955) (Fig. 2) a Geological Map of the Republic of Poland, scale 1:750,000 (Fig. 3), was commissioned by the Director of the Polish Geological Institute and was intended to show the state of geological exploration in Poland as in 1925. In order to achieve the best possible result, J. Morozewicz, as director of the PGI and a person of high authority, asked the entire geological community of Poland at that time to make their geological data available for the purposes of preparing the map. This appeal was met with a very positive response from the community. It should be noted here that the legacy of the partitions was the need to consolidate the basic elements of topographic maps. Earlier maps were developed at different scales. Maps created in the Austrian partition were published at a scale of 1:75,000, in the Russian partition most often at a scale of 1:126,000, and in the Prussian partition at a scale of 1:100,000. The most commonly used reference meridian was the Ferro meridian, which is located 17°39'46" west of Greenwich.

Figure 2. Czesław Kuźniar (1889–1955).
Source : PGI–NRI

The map was published as a set of four sheets, with title and explanatory notes in Polish and French. The topographic base is very detailed, consisting of a very dense river network; numerous towns and railway lines are also shown. The reference meridian is the Ferro. The explanations are in the lower left corner of the map and are limited to geology. Graphical explanations are in Polish and French.

There are 23 mixed lithological–stratigraphic–regional cartographic units shown on the map. The first four refer to igneous and metamorphic rocks of indeterminate age, e.g. older granites (grey), gneisses and crystalline schists of the Volhynia Plate; gabbro, norites, diabases of the Volhynia Crystalline Plate; younger granites (pink) together with sedimentary rocks metamorphosed by them, diorites, granites, gneisses and crystalline schists of the Tatra Mountains, and metamorphic rocks of Maramureș. The remaining 19 units refer to the stratigraphy, but some of them also contain lithological–regional information, e.g. the Cambrian of the Holy Cross Mountains, arkoses and shales of the Ostróg area, Buntsandstein and Muschelkalk, and the Permian and Triassic of the Tatra Mountains, represented by the High–Tatra facies.

An integral part of this map is the text–explanation to the Geological Map of the Republic of Poland. The full text is available in Polish and French (Kuźniar, 1926), written by Czesław Kuźniar. The scientific editor was J. Samsonowicz (1888–1959). The text, although modest in size, contains valuable information about how the map itself was compiled.

Kuźniar clearly emphasizes that he used all available data, which is best expressed in the following quotation: “We eagerly and with satisfaction emphasize here that all the geologists to whom we addressed this matter gave us their materials with all readiness”.

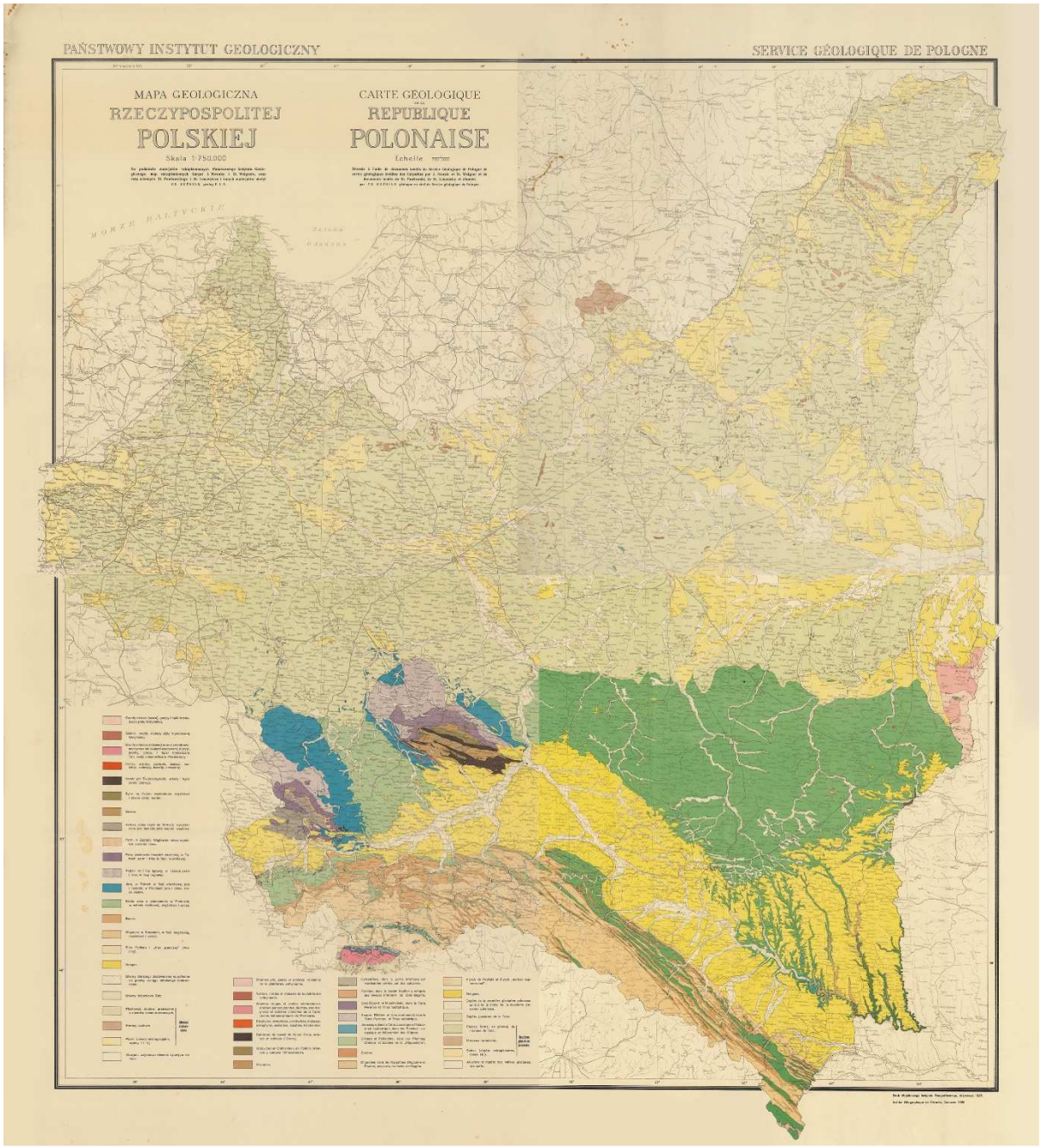

Figure 3. Geological Map of the Republic of Poland, scale 1:750,000. (C. Kuźniar, 1926). Source: PGI–NRI Collection.

The map is not compiled in a uniform manner over the entire area. The southern part of the country, south of the belt of terminal moraines in central Poland, shows geology without Quaternary deposits. However, this principle is also applied inconsistently, because alluvial deposits are shown in the valleys of major rivers, the extent of the first glaciation is marked and dotted, and glacial deposits in the Tatra Mountains and their surroundings are presented.

Comparing this map with earlier maps of Poland by Józef Siemiradzki and Emil Habdank-Dunikowski (1891) and Józef Grzybowski (1912), it is clear that it does not differ significantly from its predecessors in terms of content. It follows the convention of maps from the end of the 19th century and does not include elements of fault tectonics. The number of

lithological and stratigraphic units is similar, but the geological structure of the Carpathians and the Holy Cross Mountains is presented in more detail. The explanatory text is short, especially in comparison with that of Siemiradzki and Habdank-Dunikowski (1891). Nevertheless, the efforts of the entire geological community in supporting Józef Morozewicz's idea to produce the first geological map of independent Poland are worthy of recognition.

Further Reading

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