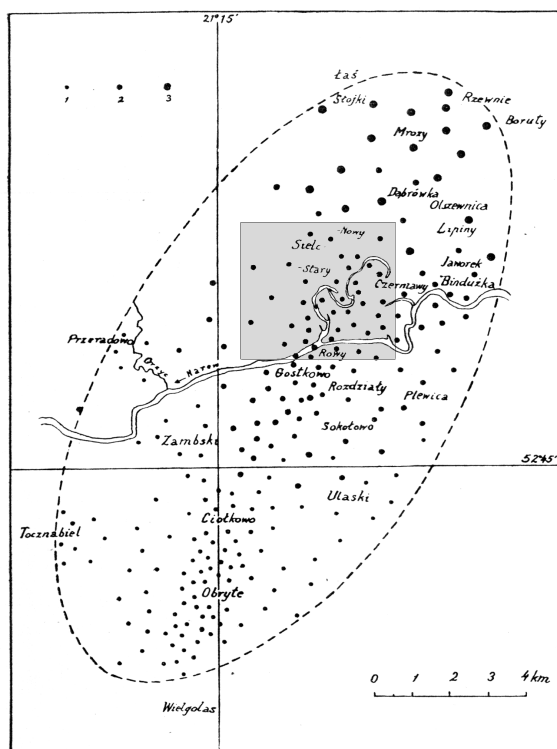


DISTRIBUTION OF PULTUSK METEORITE FRAGMENTS. T. Brachaniec¹ and J. W. Kosiński²,
¹University of Silesia; Faculty of Earth Science; Bedzinska str. 60, 41-200 Sosnowiec; email: tomasz.brachaniec@o2.pl, ²Comet and Meteor Workshop - Meteorites Section, Warsaw; email: meteorites@vp.pl.

Pultusk meteorite, which is classified as a brecciated H5 chondrite [1] fell at 30th of January 1868 in Central Poland. The bolide was witnessed over a huge part of Europe, from cities in Hungary and Austria in the south, to Gdańsk (Poland), Russia, in the north, and from Berlin (Germany), in the west to Grodno (Belarus), in the east. The shock from the bolide reportedly collapsed structures in Warsaw, 60 km south of where it impacted. Within a few days of the fall, about 400 pieces of the meteorite were collected.

After 80 years after the fall Samsonowicz as first published his field working results [2]. He has been showed a map with a distribution ellipse with an area of approximately 130 square kilometers and made a model of probable distribution of fragments with regard to their sorting (the bigger specimens in the front part of the strewn field, the smaller meteorites in the back part; Fig. 1). Samsonowicz also estimated that the number of fragments distributed within the strewn field could be as high as 70.000.

Figure 1. Distribution map produced by Samsonowicz of Pultusk meteorite fragments and the area of the strewn field. Explanations: 1- meteorites weighing from 0.001 to 0.2 kg; 2 – from 0.2 to 2 kg; 3 – from 2 to 9 kg. The grey shape shows main area of contemporary field works.



Modern research of literature and field working (Fig. 1) clearly show that the map created by Samsonowicz is only an approximate picture of the distribution of Pultusk meteorites. The result of a field searching is an observation that in a small area occur small and big specimens. Author has been claimed that in the central part of the ellipse should be found specimens from 0.2 to 2 kg, however, in this area occur small meteorites, weighing a few grams, called “Pultusk peas”. There are many indications that Samsonowicz also overestimated the amount of fallen meteorites [3][4].

Descriptions of witnesses about two/three detonations, many variations of fusion crust (from very fragmented to oriented specimens), different real distribution of meteorites in contrast to standard model probably indicate, that the main Pultusk mass at least twice broke up in the atmosphere. Studies of this problem are in progress.

References: [1] Manecki A. (1972) *Prace Mineralogiczne*, 27, 53–69. [2] Samsonowicz J. (1952) *Wiadomości Muzeum Ziemi*, 6, 56–68. [3] Kosiński J. W. (2007). *Seminarium Meteorologiczne III*, 49–54. [4] Kosiński J. W. and Kamińska E. (2011) *Acta Societatis Meteorologicae Polonorum*, 2, 57–66.