TABARZ – A FRAGMENT OF THE MORASKO STREWN FIELD? R. Bartoschewitz[1], B. Spettel[2], [1]Lehmweg 53, D-38518 Gifhorn, Germany (Bartoschewitz.Meteorite-Lab@t-online.de), [2]Max-Planck-Institut für Chemie, Joh.-J.-Becherweg 27, D-55128 Mainz, Germany

In 1854 a shepherd found an iron meteorite of probably more than 10 kg at the foot of the Inselberg near the village Tabarz, about 16 km WSW of Gotha in Thuringia. The shepherd mentioned, that he observed the mass falling on October 18th, 1854 [1]. Unfortunately only 55 g [2] are preserved in various meteorite collections in the world. So there was still only the Eberhard's analysis from 1855 available[1]:

Ni 5.69 %, Co 0.79 %, P 0.9 %.

Recently a 0.07 g sample from Tabarz was analysed by INAA at the MPI in Mainz [this work] and is classified as low-Ni IIICD [3]:

Ni	6.33 %	Ge	490 ppm	Cu	136 ppm
Ga	106 ppm	Ir	1.25 ppm	Au	1.39 ppm

The INAA data show a very close composition to Morasko and Seeläsgen, that are probably paired [4]. Tabarz meets the Morasko-Seeläsgen range and is also under discussion, that it belongs to the same fall [3], although the Tabarz find site is about 475 km WSW from Morasko.

The Seeläsgen find site is 108 km WSW of Morasko, and for that in 1847 found meteorite, an antropogenic tranport is discussed [5]. Now, after recognizing Tabarz as perhaps paired with Morasko and Seeläsgen, the find site of Seeläsgen could be more probable confirmed as original fall site. The direction Tabarz – Morasko passes exactly Seeläsgen (fig. 1). This strewn field would be one of the largest known in the world, with a length of 475 km and about 20 km width.

To confirm a probable pairing additional to the chemistry, metallography of these 3 iron meteorites were compared. Various samples, collected ENE of the Morasko craters, north of Poznan, show a wide range of structural features with well developed Widmannstätten pattern to heavy bent kamazite bands, so that a pairing discussion on this basis cannot lead to the necessary success. On the other hand, Tabarz, Seeläsgen, and Morasko are very rich in rhabdite. The rhabdites of Tabarz are enveloped in 1-2 µm wide ragged halos of taenite. The same habit is typical for Seeläsgen and already discussed by Buchwald [6]. The Morasko rhabdites are well developed sharp tetragonal prisms, and do not show ragged taenite halos.

Basesd on this study, Tabarz and Seeläsgen are most probable paired. To decide, whether both meteorites are also paired with Morasko, further investigation is necessary. This forces the discussion, whether a pairing of iron meteorites should be pronounced only based on chemical composition.

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[1] W. Eberhard (1855) *Annalen der Chemie und Pharmacie, Bd. XCVI, Heft 2,* 286-289. [2] M.M. Grady (2000) Catalogue of Meteorites. Cambridge University Press, Cambridge, pp. 689. [3] J.N. Grossman, J. Zipfel (2001) *Meteoritics and Planetary Science, 36,* (in print) [4] A. Kracher et al. (1980) *Geochimica et Cosmochimica Acta, 44,* 773-787 [5] W. Czegka (1996) *Der Aufschluss 47,* 165-185. [6] V.F. Buchwald (1975) Handbook of Iron Meteorites. University of California Press, Berkeley, pp. 1418.

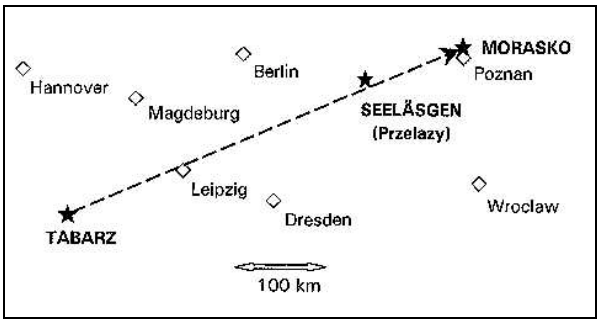

Fig. 1: Find localities of Tabarz – Seeläsgen - Morasko