WU-CHU-MU-CH'IN – A COMPLEX IRON METEORITE FROM CHINA WITH RELATION TO BELLSBANK AND BRITSTOWN. R. Bartoschewitz, BML, Lehmweg 53, D-38518 Gifhorn, Germany (Bartoschewitz.Meteorite-Lab@t-online.de)

Introduction: INAA anlyses of a hexahedtitic Wu-chu-mu-ch'in (Wu-chu) iron sample with skeleton schreibersite showed 3.5 % Ni, the lowest Ni-content in iron meteorites known. Trace elements plot in the Bellsbank grouplet led to the intension to define the IIG chemical group of iron meteorites with Ni 3.5-5.2%, Ga 33-45 ppm, Ge 37-70 ppm and Ir 0.02-0.15 ppm, and hexahedric structure with skeleton schreibersite [1]. Former anlyses and descriptions of Wu-chu samples show 18% Ni [2] and 25% Ni with finest Widmannstätten pattern [3, 4]. Wasson [5] confirm a high Ni composition of 22% and show trace elements close to the silicate-bearing anomalous Britstown meteorite (plessitic octahedrite). Similar, but with lower Ni-content, are the anomalous plessitic octahedrite Yamato 791076 and the anomalous silicate-bearing finest octahedrite Elephant Moraine 84300 [6]. Silicate inclusions are reported from Wu-chu, too [3].

A further Wu-chu piece, sampled from the main mass about 20 cm from the hexahedritic area, shows a pearlitic-ataxitic structure with different orientation.

Discussion: Although various chemistry (3.5-25% Ni) and structure (hexahedritic, octahedritic, ataxitic) observed in this unique iron do not meet the diffusion process models in iron meteorites parent bodies [7] and give the imagine of a polymict iron breccia, there are some similarities between most elements Wasson found in high Ni Wu-chu [5] and the "IIG" irons [8].

In regard to the heterogenous Wu-chu composition, it has to be discussed, whether the two very different South African meteorites Bellsbank (close to low-Ni Wu-chu) and Britstown (close to high-Ni Wu-chu) are from the same parent body and may be paired. It is strange that these meteorites, which reflect both very rare different metal types recovered in the single Wu-chu mass, may be found rather close together. The Bellsbank find site is weak described [9], but it is not known where the Britstown iron was found. It is only reported that Mr. Brandau got the meteorite from Mr. Wipplinger in Britstown before 1910 [9], but without any find location.

A large cut through the main mass of the heterogenous Wu-chu meteorite and detailed metallographic and trace element studies would bring some light in its formation and the relationship between the "IIG" group and the "Britstown grouplet". The results may led to the definition of a new chemical group of iron meteorites with extreme variable Ni-contents (3 to 25%) and metallographic pattern. Perhaps a lot of still anomalous iron meteorites can be classified in this new group in future.

References: [1] R. Bartoschewitz et al. (1998) The Wu-chu-mu-ch'in meteorite (China) and the definition of the new chemical iron meteorite group IIG. *Unpublished manuscript*. [2] O. AOCHI et al. (1921). *China Mining Journal,* **54**, 1-15. [3] H. YING et al. (1964) Investigation of the chemical compositionof iron meteorites. *Kexue Tongbao*, 727-729. [4] Z. OUYANG et al. (1965) Mineralogy, petrology and chemical composition of three iron meteorites. *Scientia Geologica Sinica*, 182-190. [5] J.T. WASSON (1998) *personal communication*. [6] J. KOBLITZ (2000) MetBase 5.0, CD-ROM. [7] K. RASMUSSEN et al. (1988) Trace element partitioning between taenite and kamacite ; relationship to the cooling rates of iron meteorites. *Meteoritics,* **23**, 107-112. [8] J.T. WASSON (2003) *personal communication*. [9] V.F. BUCHWALD (1975) *Handbook of Iron Meteorites*. Univ. California Press, Berkeley, Calif. 1418pp.