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Maruhn-Greiner Maximum for Confirmation of Low Energy Nuclear Reactions (LENR) via a Compound Nucleus with Double Magic Numbers HEINRICH HORA, Department of Theoretical Physics, University of New. South Wales, Sydney 2052, Australia, GEORGE MILEY, Dept. Nuclear, Plasma and Radiological Engineering, Univ. Illinois Champaign-Urbana, Urbana, IL 61801 — One of the most convincing facts about LENR due to deuterons (ds) or protons of very high concentration in host metals of palladium is the measurement of the large scale minimum in the reaction probability with product elements centered around the nucleon number A = 153. The local maximum was measured[1] in this region is similar to fission of uranium at A = 119 where the local maximum follows the Maruhn-Greiner mechanism[1]. We suggest this phenomenon can be explained by the strong screening of the Maxwellian ds on the degenerate rigid electron background within the swimming electrons at the metal surface or thin filem interfaces. The deuterons behave like neutrals at distances of above 2 picometers (pm) and form clusters due to soft attraction in the range of thermal energy; 10 pm diameter clusters can react over long time scales (10^6 s) with Pd leading to double magic number compound nuclei 306x126 [2] decaying via fission to an A=153 element distribution.

[1]J. Maruhn et al, Phys. Rev. Letters 32, 548 (1974)
[2]] H. Hora, G.H. Miley, CzechJ. Phys. 48, 1111 (1998)

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