

Remark 3.j.44. [27H] *Historical notes.*

- *The proposition " $|A^2| = |A|$ holds for every infinite set" is equivalent to the axiom of choice. This was demonstrated by Tarski [?] in 1928 ; [the article is online and downloadable](#) and contains other surprising equivalences. See also [?] Part 1 Section 7 page 140 assertion CN6.*
- *Jan Mycielski [?] reports: «Tarski told me the following story. He tried to publish his theorem (stated above) in the *Comptes Rendus Acad. Sci. Paris* but Fréchet and Lebesgue refused to present it. Fréchet wrote that an implication between two well known propositions is not a new result. Lebesgue wrote that an implication between two false propositions is of no interest. And Tarski said that after this misadventure he never tried to publish in the *Comptes Rendus*».*

This anecdote shows how in the past (before the works of Godel and Cohen [?], even the most respected mathematician had a feeble grasp of the importance of the Axiom of Choice.