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A finitistic point of view: Herbrand

Jacques Herbrand (1908–1931)
1930 - Recherches sur la théorie de la démonstration

Herbrand said that his goal was to make the work of Löwenheim and Skolem rigorous [from the finitistic point of view]. In essence he introduced a proof system so that one had a notion of derivation $\vdash$ (essentially that of Hilbert and Ackermann), and he described the countermodel procedure, in his own language, and showed that a first-order statement was derivable iff the attempt to build a countermodel failed at some finite stage. Furthermore there was an effective procedure to go from the knowledge that the countermodel failed at the k^{th} stage to a derivation of the statement. Thus we see that Herbrand has come up with a version of the Löwenheim-Skolem theorem that does not mention infinite models.