**Proposition 3.187.** *[26J]This model of $\mathbb{N}$ is a well-ordered set with the ordering*

$$n \leq m \iff n \subseteq m \quad .$$

*Moreover in this model we have*

$$\forall n, m \in \mathbb{N}, n \in m \iff (n \subseteq m \wedge n \neq m) \quad . \tag{3.188}$$

*so, defining (as usual)*

$$n < m \doteq (n \leq m \wedge n \neq m)$$

*we can write*

$$n \in m \iff n < m \quad .$$

*This is proven in the following exercises, see in particular [269].*