ABSTRACTS

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TO BE OR NOT TO BE A FOSSIL: A DILEMMA ON THE QUATERNARY PALEONTOLOGY

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Sympatric empty shells and mollusk live assemblages are commonly lying on modern shelves around the world. These ubiquitous components, biodiversity (the variety of living nature), and geodiversity (non-living geological nature) are acting as a non-linear route. It is especially true for living nature formed by calcified skeletons or structures, like mollusks, brachiopods, coral reefs, rodolithos, among others. These organisms, after death, as part of the geodiversity component, still interact with their counterpart biodiversity, acting as baselines for sclerobionts, for example. Without dating all empty shelly remains we are not able to assign for what temporal momentum within a bio or a geosystem those remains belong to, or which law should be applied to them (biological or geological laws). The Schrödinger's dilemma, as we have analogically called that duality, has several implications when both paleontologists and neontologists are dealing with Quaternary sediments, especially those sediments that are contiguous between past and modern environments. In our study, based on more than 400 individually dated biological remains, we demonstrated that in shallow marine sediments, the probability of a shell be a fossil is roughly 16 %, while on deeper areas these values increase up to six-fold. The identical pattern is also reached in dry Mollusca zoological collections museums, proving that the geochronological fossil definition is a duality mismatch to both the zoologic and paleontological world. Thus, we suggest that fossil definition may be clear, as follows: fossil is any biological element that represents an individual or its activity that despite the age is not accurately known, being potentially a paleontological object of study [CNPq 422766/2018-6].