Reshaping drop bouncing

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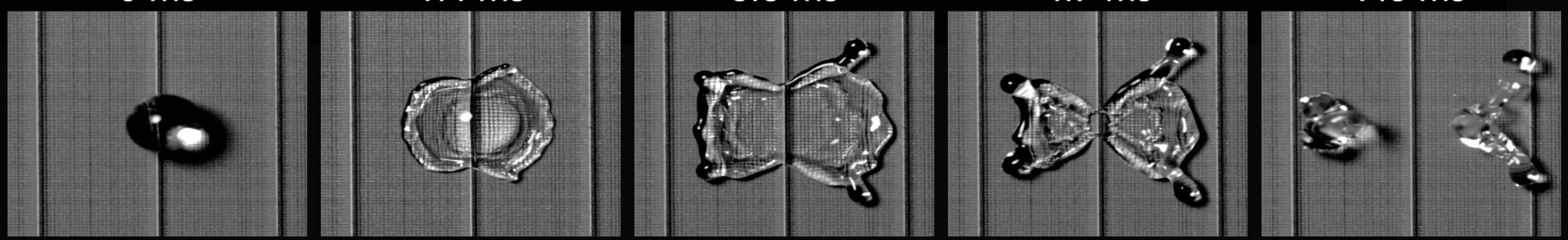

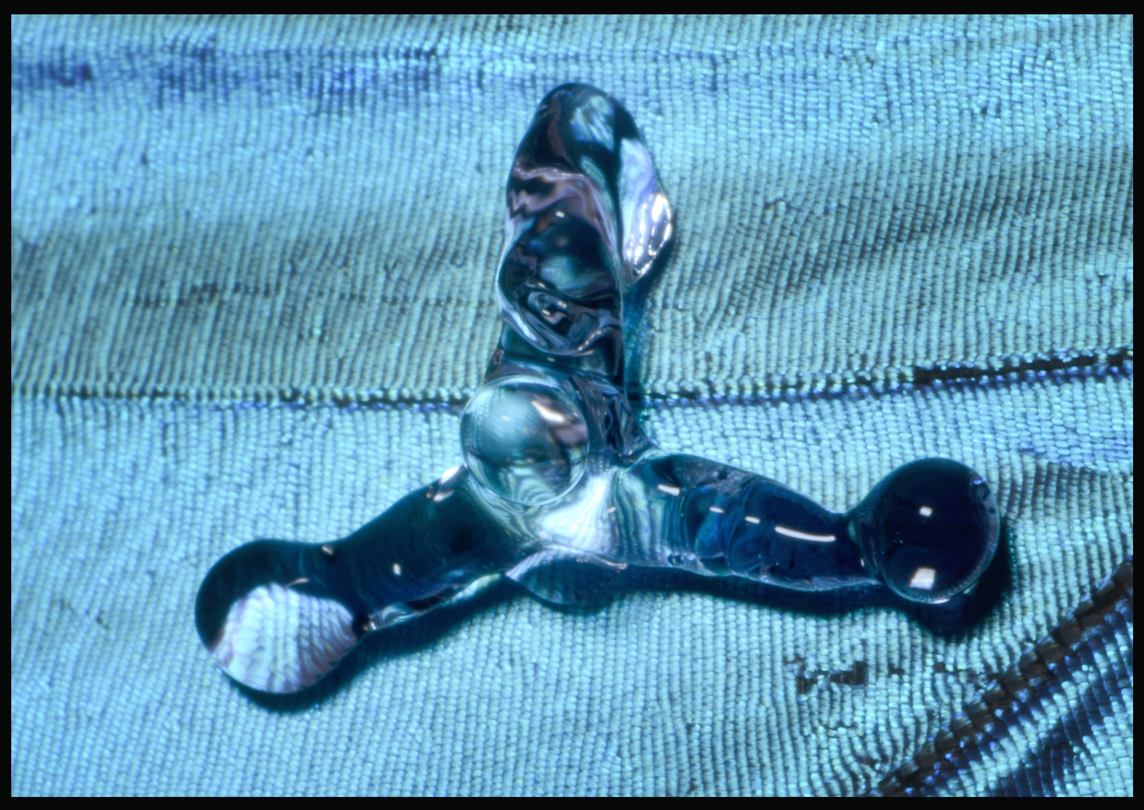

A water drop impacts the wing of a butterfly, spreads out, and begins to recede. Because the wing is super-rhydrophobic the impacted drop recedes completely, retracting so rapidly that it bounces off the surface. We are investigating how macroscopic texture can modify the hydrodynamics of the film recoil and re-shape the drop. We find that the presence of ridges, such as those on butterfly wings, is one of several textures that reshapes the film in such a way that the center assists in the recoil. Because of this assistance, the drop can bounce off a surface with ridges faster than it would if the ridges were not present.

Bird et al. Reducing the contact time of a bouncing drop. *Nature* 2013