

Abstract Submitted
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Eggs in Milk: The Conclusion¹ KEN LANGLEY, JEFF HENDRICKS, MATTHEW ELVERUD, DAN MAYNES, TADD TRUSCOTT, Brigham Young University — A hard-boiled egg spinning on a countertop and passing through a puddle of milk draws milk up the side of the egg and then ejects it at the maximum radius. This same phenomenon occurs for any partially submerged spinning object whose radius increases upward from the fluid surface (e.g., spheres, inverted cones, rings, etc.). In particular, spheres are used to investigate the behavior of this phenomenon and its sensitivity to experimental parameters. Three modes of ejection – jets, sheets, and sheet break-up – are identified, which are highly dependent on several parameters: viscosity, angular velocity, immersion depth of sphere, and sphere diameter. Experimental results are presented with comparisons to a theoretical model that is derived using integral conservation of momentum. This phenomenon can be used as a pump to easily remove fluids from shallow areas.

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