

Drinking with an elastic strip

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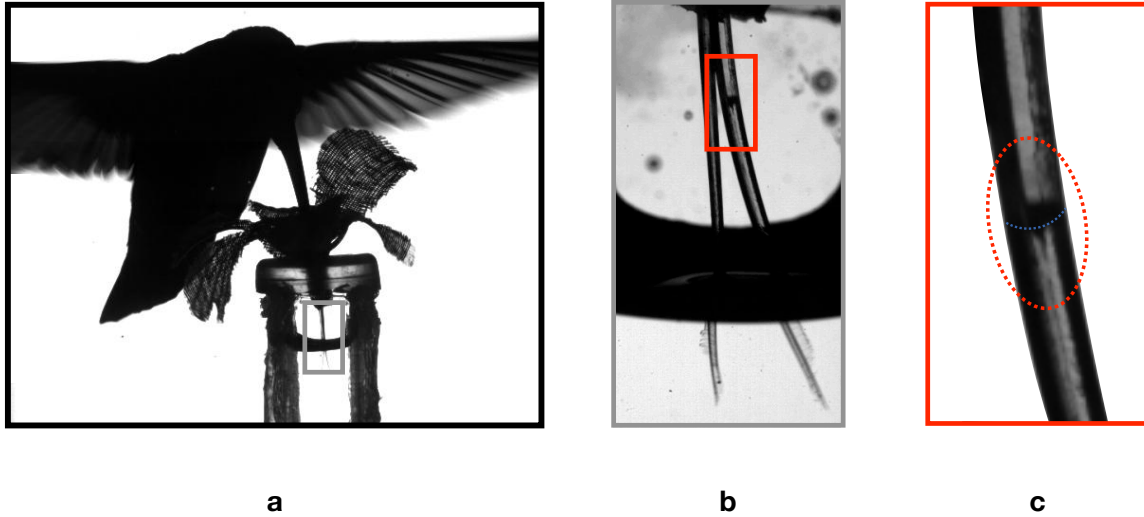


Figure 2. **a** Picture of a hummingbird harvesting a sucrose solution (160g/L). The feeder is 1.7 cm wide and the beak tip is blocked 9 mm above the feeder aperture forcing the bird to pull out his tongue to reach the liquid. The framed rectangle indicates the acquisition field of the camera that was used to zoom on the tongue. **b** Photograph the two-forked tongue whose right part opening faces the camera, showing us distinct visualisation of the rise and tongue deformation. **c** Zoom on the liquid front in the tongue corresponding to the framed part in (b).

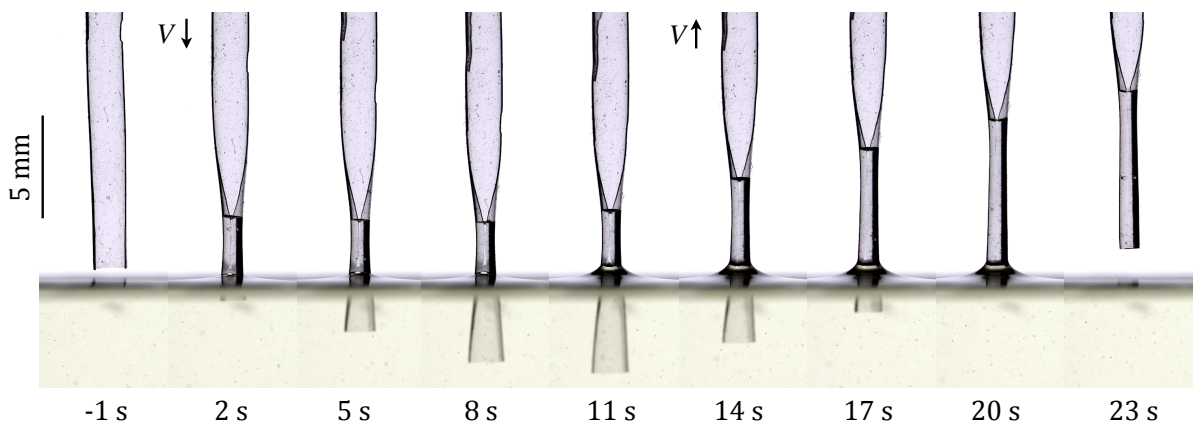


Figure 2. Replication of a drinking cycle of a hummingbird with an elastic strip of width $w = 2.5$ mm, thickness $\varepsilon = 45$ μm , and Young's modulus $Y = 200$ kPa. The strip is first plunged at a velocity $V = 0.6$ mm/s in a bath of soapy water, a phase during which the height of the liquid front plateaus at approximately 3 mm ; in a second phase, the tongue is withdrawn of the bath at $V = 0.6$ mm/s, which allows the system to entrain about twice more liquid than in the first phase. The height of the capture column is about 7.7 mm. Intervals between successive images is 3 s.