



### Meniscus climbing

Some insects are able to walk on water. But the waterlily leaf beetle larva isn't one of them. If a beetle larva falls into the water, it must not only reach dry land or emerging vegetation but also manage to climb the slippery meniscus at the water's edge. Fortunately for it, the beetle larva has developed a novel means of propulsion to escape from the water and ascend to safety: By arching its back, it deforms the water surface and generates lateral capillary forces that can propel it up the meniscus's slope.

With its back arched, the beetle larva seen here generates its own menisci at either end of its 6-millimeter-long body. The two menisci attract each other, and the resulting force on the larva takes it toward the overhanging leaf at speeds that can exceed 10 cm/s. Viewed in terms of energy balance, the increase in potential energy as the larva ascends toward the leaf is less than the increase in surface tension caused by the surface deformation. To learn more about meniscus climbers, see D. L. Hu, J. W. M. Bush, *Nature* 437, 733 (2005) and J. W. M. Bush, D. L. Hu, *Annu. Rev. Fluid Mech.* 38, 339 (2006). (Image courtesy of David Hu.)

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