

Abstract Submitted
for the DFD09 Meeting of
The American Physical Society

A lightning stab in the dark: fluid dynamics of attack jumps of ambush feeding copepods TOMAS BOHR, Department of Physics and Center for Fluid Dynamics, Technical University of Denmark, ANDERS ANDERSEN, VINCENT LANGLOIS¹, Department of Physics and Center for Fluid Dynamics, Technical University of Denmark, THOMAS KIØRBOE, HANS HENRIK JAKOBSEN, National Institute for Aquatic Resources, Technical University of Denmark — A large class of marine zooplankton, in particular among copepods, are “ambush feeders”, who wait for their prey and capture them by surprise attacks. The successful attack must happen so rapidly and unexpectedly that the prey cannot escape and the fluid disturbances created by the attack must be so small that the prey is not pushed away by the flow created by the much larger approaching copepod. Detailed high speed video *in vivo* reveals that the nearly blind copepod manages to perform the attack by precision maneuvering during a rapid jump of a few milliseconds moving approximately one body length. The prey is pushed only by around 10% of this distance, and thus the bulk flow must be close to potential with small boundary layers. From this, we argue that the smallest ambush feeding copepod, *Oithona davisae*, is close to the size limit for the ambush feeding strategy. REF: T. Kiørboe, A. Andersen, V. J. Langlois, H. H. Jakobsen and T. Bohr, PNAS (2009)

¹Present address: Laboratoire de Sciences de la Terre, Université Claude Bernard Lyon

Tomas Bohr
Department of Physics and Center for Fluid Dynamics,
Technical University of Denmark

Date submitted: 06 Aug 2009

Electronic form version 1.4