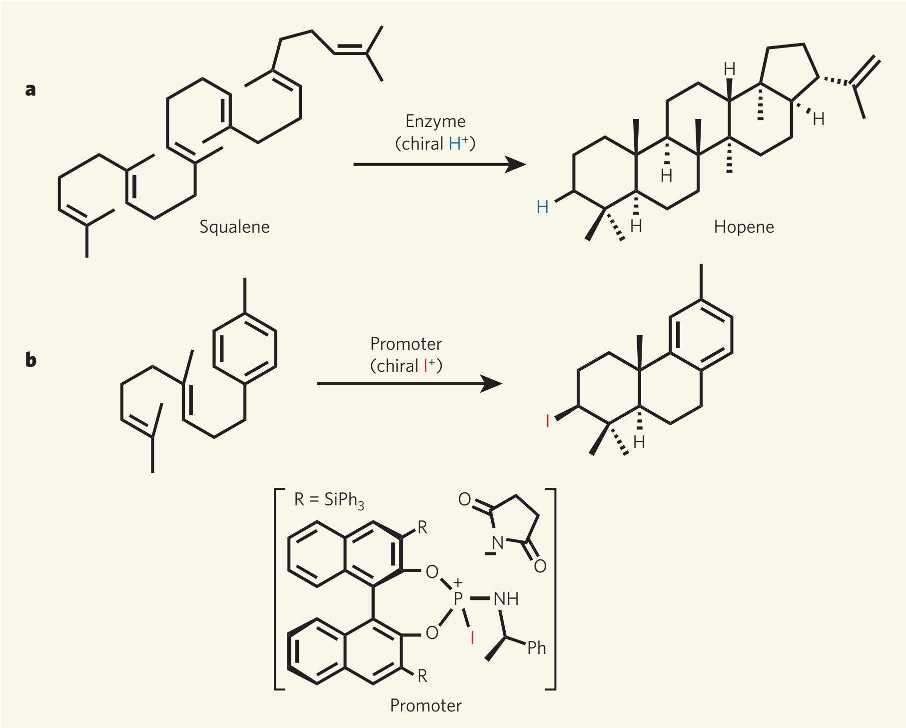

Figure 1 | Enzymatic and synthetic cyclization reactions. **a**, Squalene undergoes a cyclization reaction to form hopene in bacteria, using an enzymatic equivalent of a chiral hydrogen ion (H^+). **b**, Ishihara and colleagues[4] prepared a chiral source of iodine ions (I^+) that induces a similar halocyclization reaction, so achieving a long-standing goal in organic chemistry. Only one of two possible mirror-image products is made in the reaction.

enantioselectivity of enzymes — it seemed that such fine control could only be achieved with a complex biological catalyst. What is so striking about Ishihara and colleagues' method is that it uses relatively simple reagents. With a chiral jacket for iodine in the closet, the foundation is in place for catalytic versions of this reaction, and for the synthesis of halogenated, naturally occurring compounds. ■

Phil S. Baran and Thomas J. Maimone are in the Department of Chemistry, The Scripps Research Institute, 10550 North Torrey Pines Road, La Jolla, California 92037, USA.
e-mail: pbaran@scripps.edu

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BIOMECHANICS

Fish feeding hardly a drag

Mason N. Dean and Adam P. Summers

Mathematical simulations of prey capture in an aqueous environment, tuned by observational data, have produced a fresh view of the forces generated by suction feeding in fishes.

For humans, suction feeding is a very occasional activity — used to acquire small balls of tapioca from the bottom of a trendy bubble tea, maybe. By contrast, most fishes use suction to obtain all of their food. Typically, a fish targets an individual prey item and swims close, then snaps open its mouth, drawing in a quantity of water along with its lunch. Peter Wainwright and Steven Day[1], writing in the *Journal of the Royal Society Interface*, used fluid dynamic modelling and flow data from bluegill sunfish (*Lepomis macrochirus*) to show that the dominant force carrying the prey to its end is not drag from the flowing water, but rather the pressure gradient generated by the rapidly opened mouth.

Several forces, each governed by different equations and generated by the moving fluid,

NATURE

50 & 100 YEARS AGO

50 YEARS AGO

Kapitza By A. M. Biew. — This book, written in Germany by a refugee, purports to tell how the U.S.S.R. developed the hydrogen bomb with Kapitza as the principal scientist and with Joffe and Kurtchatov as his principal colleagues... Practically every detail which can be checked is wrong. It is stated that by 1928 Kapitza "had already become in practice the head of the establishment", that is, the Cavendish Laboratory. This at a time when Rutherford was in his prime! The Royal Society Mond Laboratory, which was built for Kapitza's work, is referred to as the "Moon Laboratory". Sensational accounts are given of attempts to lure Kapitza back to the U.S.S.R. in the 1930's. In fact, he returned most years to see his mother and visit friends... The book states that the Russian atom bomb project started in 1937. While we may be permitted to be sceptical about this, we can at least check the few brief paragraphs about the physics of the project. These appear to be as bogus as the account of Kapitza's Cambridge period. **J. D. Cockcroft**
From *Nature* 23 February 1957.

100 YEARS AGO

The following illustration of Prof. Karl Pearson's "Random Path" problem may be of interest. Mr. Kipling in his story "The Strange Ride of Morrowbie Jukes" gives the following directions for finding the safe path across a quicksand, which directions are supposed to have been found by the hero of the story in the coat of an earlier victim:— "Four out from crow-clump; three left; nine out; two right; three back; two left; fourteen out; two left; seven out; one left; nine back; two right; six back; four right; seven back." These numbers were probably taken at random, and it will be noted that seventy five paces are taken, and the final position is only seven paces from the original position. This is a rather curious confirmation of Lord Rayleigh's solution to the problem.
From *Nature* 21 February 1907.