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as well as additional measurements taken with permanent pressure-based tide gauges at nearby Port Stanley over the past 25 years, suggest that the rate of sea-level rise increased to +2.5 ± 0.58 mm per year since 1992. This accelerated rate of sea-level rise agrees with similar trends observed by satellite data in other ocean basins around the world. The data of Ross and his colleagues also provide historical value in reflecting how sampling took place—an especially important contribution because many of Ross’ notes—including his original journal documenting his methods—have been missing for over 20 years. — NW


CELL BIOLOGY

Making a Move

Hemocytes—macrophage-like cells found in insects—migrate from their birthplace in the head to distribute themselves throughout the whole organism. Stramer et al. examined this migration using high-resolution in vivo imaging of hemocytes expressing fluorescently tagged actin and tubulin. Dynamic rearrangements of the actin (green) and microtubule (red) cytoskeleton were observed as the cells migrated through the Drosophila embryo. In particular, during periods of persistent migration toward a wound, microtubules would form a bundle pointing toward the cell’s destination within the forward-moving lamellae of the cell. Proteins known to play a role in directed migration in other systems were also required for hemocyte migration in vivo. If two migrating hemocytes met, after a brief pause during which the microtubule bundles appeared to align, the cells would repel each other, disassembling their microtubule bundles and then reassembling them to move away. This process of contact repulsion presumably helps to generate an even distribution of hemocytes. — SMH


PHYSICS

Keeping Light Around

Bose-Einstein condensation (BEC) is a phenomenon in which an equilibrium population of bosons (particles of integer spin) slump down to their lowest energy state under conditions of low temperature and high density. The bosons that undergo this transition include cold gases of 87Rb, superconducting electron pairs, and interacting He atoms in their superfluid phase. However, the most ubiquitous bosons, photons, are predicted not to exhibit BEC because their number is usually not conserved and their chemical potential, consequently, vanishes at all temperatures. Klaers et al. now realize a two-dimensional thermalized gas of photons confined in a parabolic potential, with a conserved particle number and a quadratic dispersion—a system equivalent to a gas of massive atoms and expected to undergo BEC under favorable conditions. They achieve this scenario by trapping photons in a curved-mirror optical microcavity filled with dye molecules. The photons are absorbed and emitted repeatedly by the dye molecules, which are pumped by a laser; the pumping ensures that the number of excited dye molecules is constant, in turn ensuring that the photon number is conserved too. The thermalization of the photon gas at the dye solution temperature is confirmed through comparison of measured spectra with theoretical predictions. — JS

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PSYCHOLOGY

The Side-Effect Effect

A robust phenomenon established empirically during the past decade is the tendency of observers to regard morally bad consequences (such as harm to the environment) that occur as a secondary effect of actions taken by an agent (such as a corporate CEO) in the course of achieving the primary effect—an increase in revenue—as having been committed intentionally. In contrast, morally good consequences in a similar scenario are judged as being incidental. A number of explanations for this asymmetry (also known as the Knobe effect) have been put forth; most prominent, perhaps, is the proposal that the moral valence of the side effect alters the observer’s inference about the agent’s mental state; that is, whether the CEO acted with intent. Uttich and Lombrozo bring to bear a series of vignettes in which the type of social norm (moral versus conventional), the kind of behavior (norm-conforming versus norm-violating), and the outcome valence (helpful versus harmful) were varied independently. Their results support a “rational scientist” framework, so that the observer’s computation of the agent’s state of mind weights actions that flout commonly accepted rules of behavior as being more informative and hence diagnostic of intentionality than conformist ones. — GJC


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