Livestock that have died within a few days of treatment and whose carcasses contain residues of the drug. Birds that consume sufficient tissues from such carcasses die from kidney failure one to two days after exposure. Conservation efforts, including a ban on veterinary diclofenac and the identification of a vulture-safe alternative drug (the NSAID meloxicam), were introduced in 2006 in order to address the diclofenac threat. Sampling of domesticated ungulate carcasses available to vultures in India was undertaken prior to, around the time of, and 1–2 years after the ban in order to quantify the prevalence of diclofenac and meloxicam residues. More than 4,000 liver tissue samples were collected from nine states and analysed with a validated LC-ESI/MS methodology. Overall diclofenac prevalence levels declined by almost a half over the three surveys, with a corresponding increase in meloxicam levels in surveys 2 and 3. These surveys indicate that two of the key conservation actions being used to counter the threat faced by vultures – banning veterinary diclofenac and the promotion of meloxicam as a safe alternative – are beginning to take effect. See page 1480.

On the North Sikkm earthquake

The Mw 6.9 earthquake of 18 September 2011, close to the Sikkim–Nepal border is remarkable for two reasons. One, it is the largest instrumentally recorded earthquake to have occurred in Sikkim and two, its strike–slip focal mechanism is different from the thrust faulting earthquakes, typical of the Himalaya plate boundary. The vulnerability of the region to landslides and the proximity of the earthquake source to the major Tista River Hydel Power Project are the other factors that make the source of this earthquake significant. Rajendran et al. (page 1475) report the effects of this earthquake and the response of structures, as observed from the post-earthquake field surveys in this region conducted a week after the earthquake. Although the damage to well-engineered structures were nominal, the severity of landslides and the potential for future slope-failures during the forthcoming monsoon are important factors that need to be attended to, from the hazard mitigation point of view, as pointed out in this communication. From the seismotectonic perspective, this event can be considered as an intraplate earthquake, on the leading edge of the subducting Indian plate. With its source close to a previously reported cluster of mid-crustal and sub-Moho earthquakes, the North Sikkim earthquake provides a fresh example to study the dynamics of the subducting Indian plate.

Heat transport in the Earth

Contrary to the popular planetesimal theory of Earth’s formation, Herndon (page 1440) describes a new indivisible geoscience paradigm that begins with and is the consequence of our planet’s early formation as a Jupiter-like gas giant and which permits deduction of: (i) Earth’s internal composition and highly-reduced oxidation state; (ii) Core formation without whole-planet melting; (iii) Powerful new internal energy sources; (iv) Decompression-driven geodynamics that accounts for the myriad of observations attributed to plate tectonics without requiring mantle convection; (v) Nuclear geo-reactor generation of Earth’s magnetic field; and, as particularly emphasized in the article, (vi) New understanding and ideas on the geodynamic basis for heat transport within the Earth.