

SPECIES

FROG RESPAWN

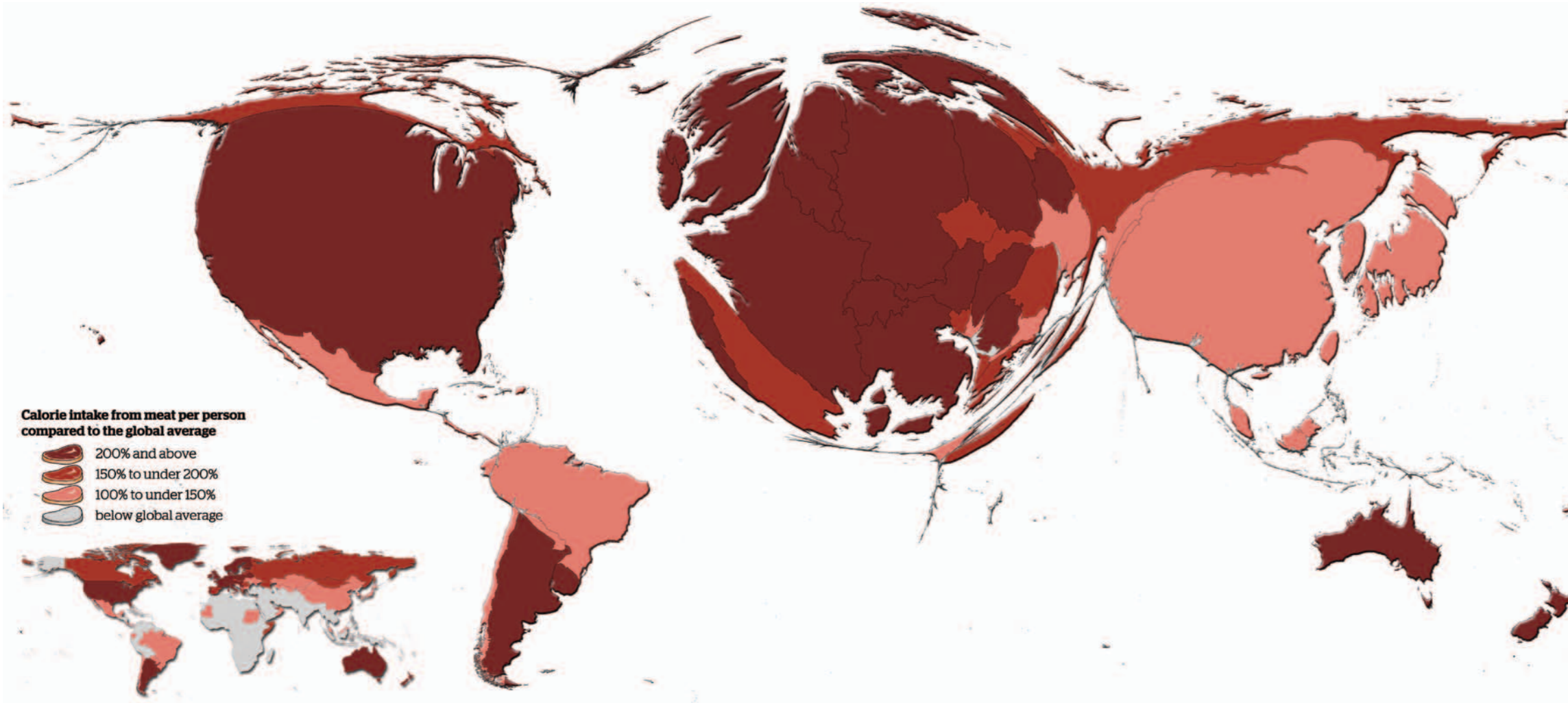
A tree frog thought to have been extinct for 140 years has been rediscovered in the jungles of northeast India

Last seen in the wild in 1870, *Frankixalus jerdonii*, a golf-ball sized amphibian, was believed extinct until rediscovered by biologist Dr Sathyabhama Das Biju, affectionately nicknamed 'the frog man of India'. 'It was late in the evening immediately after some sporadic rain showers,' recalls Biju. 'From high up in the canopy we heard some distinct frog calls. At the time we didn't know what species we were looking at.'

The *jerdonii* genus demonstrates some unusual characteristics: 'It's unique because it spawns into water-filled tree holes in the canopy,' says Biju. According to his observations, the mother tree frog feeds her tadpoles (pictured below) her own unfertilised eggs until they turn into froglets. 'This rare form of parental care behaviour is the first of its kind seen in India,' he continues. Having now been officially reclassified, it is hoped that researchers will find it in much greater numbers across a wide area from India to Thailand.

While the rediscovery is a success for biologists, it is still rare for an amphibian to return from presumed extinction. According to a recent study by the University of Copenhagen, around 50 per cent of all known amphibian species are endangered due to environmental stressors such as climate change, habitat destruction and disease.

'Amphibians have permeable skins and a biphasic life,' says Biju. 'That means that during the first half of their lifespan, before metamorphosis, they are completely dependent on water or moisture.' According to his research, even small changes in the ecosystem are enough to wipe out entire species from an area: 'this can be true for other life forms, many of which are still not discovered.' For Biju, rediscovering the *Frankixalus jerdonii* underscores the need to protect habitats for known and as-yet unknown species. 'We don't know the full extent of what we are losing,' he warns.



CARTOGRAMS

MEAT EATERS

BY BENJAMIN HENNIG

When the world's population passed seven billion people in 2011 we humans weighed, in total, 350 million tonnes. That weight is rising rapidly as our numbers are still growing and we are getting heavier. Back in 2011 each of us weighed, on average, just under eight stone. Around two billion of us were children then, and there were more people underweight than overweight worldwide. Since then, the number that are overweight has risen dramatically. The proportion of the population who are children has been

falling, as fertility itself has fallen. Peak baby was in 1990, but the human population continues to rise because of ageing. Most of the growth in human population predicted in the next few decades will be as a result of that ageing.

The heaviest animals on the planet are the ones we farm for their meat. This includes some 1.4 billion cattle that weigh 520 million tonnes at any one time. After that there are the 11 billion sheep making up 65 million tonnes in total planetary sheep weight.

Then there are the 18.6 billion chickens weighing 40 million tonnes worldwide, being by far the most populous birds on the planet today. If we ignore fish in the oceans and insects, then the vast majority of animal life on Earth by weight is either us, or what we farm to eat. We have taken over the planet.

We know that collectively the amount we are eating, farming and killing, is increasing rapidly - but we sometimes make the mistake of assuming that this is widespread. It is not. Recent projections by the World Health Organization (WHO) predict that on average each person will consume 45kg of meat per year in 2030, up from 36kg at the end of the 1990s. But there is a huge regional variation in meat consumption patterns. The above cartogram shows the excess meat consumption today by visualising how much more is consumed in each country in

total compared to the current global average level of consumption (the smaller map shows the same data without the resizing). Only those countries that consume above average amounts appear in this map, while those below the global average disappear, highlighting where over-consumption of meat is worst in today's world.

The WHO predicts that if these trends continue and meat consumption continues to rise, not only will developing countries increase their per capita consumption from 26kg at the end of the 1990s to 37kg per year in 2030, but also the wealthy parts of the world will continue to increase their meat intake from 88kg to 100kg, adding to the current over-consumption and all the related effects on the environmental footprint that meat production contains (see this month's Dossier on page 36 for more on this).

However, there is reason for hope that these inequalities will eventually disappear. The current amount of meat we waste means that change is possible without humankind becoming a species of vegetarians.

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