



DAVID HARRISON/ISTOCKPHOTO

Machapuchare, one of dozens of unclimbed peaks in the Himalayas

7 ...where you can still hear the strangest languages ever spoken

THE death of any language is a tragedy, but some are a more distressing loss than others. A handful of endangered languages are the last refuges of odd linguistic features that, once their host language disappears, will be gone forever.

One is Tofa, spoken by a handful of nomads in the Eastern Sayan mountains of southern Siberia. Starting in the 1950s, the Soviet government forced the Tofa people to learn Russian and abandon their traditional ways of life. Now, there are only 25 Tofa speakers left, all elderly. When they die, one utterly unique feature of Tofa will disappear: a suffix, *-sig*, that means “to smell like.” In Tofa you can add *-sig* to the word *ivi-*, (reindeer) to describe someone who smells like a reindeer. No other language in the world is known to have this kind of suffix.

Linguist K. David Harrison of Swarthmore College in Pennsylvania has documented similar examples of endangered “information packaging” systems in his book *When Languages Die*. One of these is the body counting system used in an estimated 40 languages in Papua New Guinea. In languages like Kaluli and Kobon, the words for numbers are the names of body parts. So 1 to 10 in Kobon are “little finger, ring finger, middle finger, forefinger, thumb, wrist, forearm, inside elbow, bicep, shoulder.” To count higher, you count the collarbone and the hollow at the base of the throat – and then right down the other side, all the way to 23. You can count to 46 by counting back the other way and even higher by starting over and doing it all again. So 61 in Kobon is “hand turn around second time go back biceps other side”. Michael Erard

8 ...without living things

WHEREVER biologists look for life on Earth, they tend to find it – with two notable exceptions. One is the large expanses of bare ice and snow found in Antarctica and Greenland, which comes as little surprise. The other is more of a mystery: an area called Yungay in the heart of the Atacama desert in northern Chile, the only tract of dry land that seems to have no surface life at all.

Although it is one of the driest regions of the world’s driest desert, Yungay’s lifelessness is baffling. This unique condition makes it unlike any other desert on Earth, according to teams of NASA researchers who have been doing fieldwork there for more than a decade. That’s what keeps them coming back. They are eager to uncover the secrets of the absolute limits that terrestrial life can endure, as it could provide clues to the necessary conditions for life on other worlds.

“It’s not clear what is limiting life there,” says Chris McKay, a planetary scientist at NASA’s Ames Research Center in California. “It could be the availability of food, or water. Both are in short supply. In other places [in the Atacama] that

are rich in life, both are brought in by fog.” But the fog doesn’t reach Yungay.

Part of the problem is that where microbes do take hold, there are so few of them that they are at the very limits of detectability. The first few years of sampling and testing suggested that the entire Yungay area was sterile. Then last year signs of life turned up. Jacek Wierzbos of the University of Lleida in Spain found a hardy variety of cyanobacteria inhabiting cracks in salt crystals, harnessing salt’s ability to draw water from the air – an adaptation that had never been seen before. Richard Quinn, a NASA biologist, also found traces of microbial life in some parts of the arid soil next to apparently identical areas that are lifeless.

Tests on the soil samples continue, but so far the secret to lifelessness remains a mystery. Solving it may be a key to eventually figuring out whether the ruddy soil of Mars is as lifeless as Yungay, or filled with hardy microbes like the soil under our feet. David L. Chandler