data-crunching parallel processing and Unix-inspired open-source collaborations, but there was a time when the cutting edge — at least for molecular scientists — was being able to draw a benzene ring digitally on screen. Jobs and Apple gave scientists the power to do that, and more besides. Scientists responded with decades of loyalty and, on news of Jobs's death, with tributes of their own.

Apple lost the battle for dominance of corporate computing to the PC long ago, yet there is a good reason for the devotion to Apple computers in industries such as design and publishing (even if it might seem irrational to outsiders). The introduction in 1984 of the Apple Macintosh, or Mac, complete with mouse, brought easy graphic imaging to the masses. In doing so, it slashed the time taken for chemists and molecular biologists, among others, to represent their work and deliver their papers. Windows as we know it was years away, and Apple had a head start in these fields that, for many scientists, it never relinquished.

The mid-1980s was a time ruled by technology giants such as the Grafacon 1010, a table-top-sized digitizing tablet that was operated by a foot pedal. For the scientists fortunate enough to have access, the machine converted hand drawings into glowing lines on a screen. Most researchers got by with sheets of Letraset letter and symbol transfers bought from the local stationer and painstakingly rubbed onto written pages at the correct positions. Foreshadowing the modern use of punctuation to portray emotions (emoticons), chemists were not averse to inserting sheets of paper into their typewriters at oblique angles and using the equals sign and dashes to represent chemical bonds.

Henry Rzepa, a computational chemist at Imperial College London, says that the Mac, in tandem with associated software such as ChemDraw and early laser printers, "gave us back our science". Before its introduction, he says, it was not unusual for a university scientist to spend an entire week transferring all the letters and symbols onto the pages of a research paper, which journal publishers were demanding in 'camera-ready' form. Some academic departments employed a staff member to do nothing else. The Mac made it a five-minute job and, Rzepa says, the effect was liberating. (Certainly, in a sign of what future Apple technology would do for record shops, the unfortunate staff member who was skilled with the transfers often found themselves liberated from a job.)

Susan Forsburg, professor of molecular and computational biology at the University of Southern California in Los Angeles, was an early user of the Mac. "It's hard to explain to my students today what a change it was to go from laboriously hand-drawing figures to making clean, crisp, computer-generated line drawings and digital images," she says. "It was revolutionary." Molecular biologists have been attracted to Apple technology ever since, she adds, and at least half of the attendees at scientific meetings are likely to have one on their desk. "These days, a lot of graphics software runs on Windows but I think Macs still have the edge, in part because they focus so much on ease of use. But I would think that, wouldn't I?"

"Nostalgia has probably helped to delete memories of some of the early Mac's shortcomings."

Advocates of the PC are no doubt gnashing their teeth at this point, and rose-tinted nostalgia has probably helped to delete memories of some of the early Mac's shortcomings. A comprehensive review of "software for two-dimensional chemical structure editing" published in the late 1980s (A. C. Norris and A. L. Oakley *Comput. Chem.* **12,** 245–251; 1988), for instance, rather stiffly points out that the Macintosh version of ChemDraw "is more difficult for a chemist to use than is at first apparent". Among the drawbacks: "Rings have to be sized and oriented each time they are drawn, making drawing of fused rings tedious." Still, this did not stop the potential of the new trend being recognized by the authors, who concluded: "Electronic publishing is likely to have a considerable impact on the way in which authors, research and commercial concerns, and publishers produce and distribute information." Quite — and Jobs and Apple more than played their part. Thank you, Steve. ■

More than teeth

The bizarre-looking naked mole rat is a worthy member of the genome club.

In an unflattering light, a naked mole rat looks like a wrinkly sausage with oversized teeth, legs and a tail. And given that it spends all of its extraordinarily long life short of air in dark and overcrowded underground tunnels, where it frequently eats its own excrement, an unflattering light is probably the best that a naked mole rat can hope for. Still, the best science, like love and justice, is blind, so this week the naked mole rat (*Heterocephalus glaber*; also known as the sand puppy or desert mole rat) joins the illustrious list of animals judged to be of sufficient significance for an analysis of their genome sequence to be published.

And what an animal it is. Unfortunately, the research paper that describes its genetic insides, published online by *Nature* this week (E. B. Kim *et al. Nature* doi:10.1038/nature10533; 2011), finds no room to feature a clear image of its extraordinary outsides. So those readers unfamiliar with this bizarre burrowing rodent native to parts of east Africa are highly recommended to look up its image on the Internet. See what we mean about the teeth?

And there's more: the mouse-sized creature is one of only two mammals known to live in ant- and termite-style eusocial colonies (the other being the Damaraland mole rat). A naked mole rat queen suppresses the sexual maturity of her subordinates, and on a royal death, the female who wins the fight to take the queen's place must stretch herself to pup-bearing size. At length, she is joined by a select few breeding males, while the other members of the colony — sterile workers — dedicate their days to the search for food and to digging and defending tunnels. Should it need to, a naked mole rat soldier can shuffle backwards as fast as its little feet normally carry it forwards.

The creature is certainly an interesting curiosity, but in these cash-strapped times, why invest in the secrets of its genome?

The naked mole rat is one of Mother Nature's great survivors. The busy underground lairs in which the animals live almost always run low on oxygen and high on carbon dioxide. Steady subterranean temperatures have sapped the creatures' ability to regulate their body temperature. Yet what they sacrifice in quality of life they more than make up for in extraordinary quantity. Comfortably the longest-living rodent, naked mole rats can live for more than 30 years. They seem impervious to cancer and do not feel some types of pain.

All of which means that the frankly ugly naked mole rat could prove a sight for sore eyes in the biomedical community. The information published on its genome and transcriptome has already revealed patterns of gene expression different from those in humans, mice and rats, and this may underlie its longevity. With further study, mechanisms of ageing, genetic regulation of lifespan, adaption to extreme environments, low-oxygen tolerance, cancer resistance, sexual development and hormonal regulation are up for grabs.

As those reporting the genome sequence say, it provides a "rich resource that can be mined in numerous ways to uncover the molecular bases for the extraordinary traits of this most unusual mammal". And did we mention the teeth? ■

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