was good for patients, but not so good for paleopathologists. Instead, the team had to gather together the world's entire laboratory collection of treponematoses, and collect strains of the disease in wild baboons and rabbits. In addition, they were able to locate two specimens of yaws from the only known site of active infection in the Americas: Amerindians living far inside Guyana. In all, they managed to find 26 genetic sequences from different types of treponemal bacteria.

Comparing such data allows educated guesses to be made about which species are most closely related and what evolved when. The first thing Dr Harper found, as she reports in the *Public Library of Science*, was that of all the treponematoses, yaws was most likely to resemble the ancestral pathogen. This supports a theory that yaws is an "heirloom disease": one caused by a bacterium that infected humanity's ancestors and that has evolved with the species as people have spread around the world. Syphilis, though, emerged relatively recently in evolutionary terms.

The two Guyanese samples of yaws were a crucial component of this study, because they appeared to be the closest relatives of venereal syphilis and were genetically different from Old World species of yaws. Indeed, critics of the study reckon Dr Harper is relying too much on them, since the differences in question may be the result of local natural selection rather than the type of random mutation that this sort of analysis depends on. She, though, thinks the evidence suggests that an ancestral disease resembling yaws first arose in the Old World as a non-venereal infection. It spread to the Middle East and eastern Europe, and then on to the Americas in the form of New World yaws when humans crossed the Bering strait some 13,000 years ago. Finally, syphilis was introduced back into the Old World as a result of European exploration.

It is possible that when a bug that came from the moist, tropical New World arrived in the cooler climes of Europe it survived by adapting to the nearest thing European man (and woman) has to a tropical environment: the genitals. Thus freed from external constraint, it used the French, the Italians, the Dutch, the Spaniards, the Russians, the Poles, the Turks, the Tahitians and even the British to become the global success that it is today. ■

Antarctic science

Snow place like home

THE SOUTH POLE

America's new research station at the South Pole is officially opened

MOVING house is always traumatic, and the odd tear would have been forgivable as the flag came down over America's old base at the South Pole. It was handed from person to person along a line of scientists and support staff like an egg being passed between penguins. Slowly, it made its way past the marker that represents the exact point of the Pole, and then on to its new staff outside the third incarnation of the Amundsen-Scott station that is the home of America's scientific effort at the Pole. This new station, which formally opened for business on January 12th, took almost 20 years to design and build, and cost $174m. It will house researchers from fields as diverse as neutrino astronomy, cosmology, seismology and atmospheric physics.

The first polar base was established in 1957, during the International Geophysical Year. Eventually, it succumbed to the elements and was buried under years of snowdrift. It was followed by a geodesic dome, an unheated structure filled with small shipping containers that served as buildings. That, too, is now partially buried and is scheduled for demolition over the next few years.

The latest station, though, is designed to stave off the fate of its predecessors by using the very elements against themselves. The building rests on 36 steel columns, elevating it four metres above the surface of the ice. Using detailed computer simulations, its designers have arranged its orientation and aerodynamic exterior to accelerate the gale-force winds that blow over the pole and channel them underneath the station. The resulting gusts scour the ice surface, depositing snow on the other side instead of letting it build up against the station itself.

However, in Antarctica, the elements are relentless. Eventually, over a period of about 15 years, snowdrifts will build up. When they do, the designers have another trick up their sleeves. Using hydraulic jacks, the entire building can be raised. Extensions another four metres long can be added to the steel columns, and the scouring can begin anew. Two such extensions will add 30 years to the base's life.

Once inside, not all is so strictly utilitarian. The station has many of the comforts of home—a full-sized gym for volleyball and basketball, an exercise room, a music room, an arts-and-crafts room and a library. For those needing an escape from the 24-hour sunlight (or 24-hour darkness), there are lounges with televisions, a pool table and a good supply of beer and Scotch whisky. And for those who prefer a healthier diet there is also a hydroponic greenhouse where fresh vegetables will grow all year round.

Each of the 750 people who will pass through the base in a typical summer season will have the luxury of a private room with a phone and an internet connection. In fact, it sounds just the place for an exotic holiday. So, to remind the inhabitants that this is, indeed, Antarctica, they will be allowed to shower only twice a week. ■