

# Astronomy

Dietrick E. Thomsen reports from Santa Cruz, Calif., at the meeting of the Astronomical Society of the Pacific

## Mt. Wilson observatory that wasn't

California's mountains are famous observatory sites and housed permanent observatories long before Mauna Kea became the astronomers' Jerusalem (SN: 8/11/84, p. 88). One of the most famous is Mt. Wilson, which overlooks Pasadena, city of roses and little old ladies who drive their cars only on Sunday.

In the 1870s and 1880s the Lick Observatory was being built for the University of California on Mt. Hamilton near the south end of San Francisco Bay. The site was chosen by its donor, James Lick, a San Francisco merchant and land speculator. It was to have what would be the world's largest telescope, a 36-inch refractor. (Astronomers were partial to refracting telescopes in those days; only at the turn of the century did they begin to recognize the superiority of reflectors.)

Southern California could not be outdone. E.F. Spence, a banker, who was one of the founders of what is now the Security Pacific Bank, proposed to fund an observatory for the University of Southern California in Los Angeles. This would have a 40-inch refractor. The site chosen was what was then called Wilson's Peak, a site superior in all respects, they thought, to Mt. Hamilton.

The work on this Spence Observatory required the collaboration of Harvard University, which had experience. A preliminary move was to be the transportation of a 13-inch telescope from Massachusetts and its installation on Wilson's Peak. In the archives, Gibson Reaves of USC discovered a letter written in 1887 from astronomer William Henry Pickering of Harvard to Marion McKinley Bovard, president of USC, detailing how this was to be done.

The tube of the telescope weighed nearly a ton. Even when it was cut into pieces, the pieces might be too heavy for a single mule. If so, Pickering proposed, the pieces might be hung from wooden beams attached at their ends to two cross pieces. The four ends of the cross pieces would rest on the backs of four mules. Pickering also sketched in his letter three possible buildings to house the telescope, one with a sliding roof, one with a sectional roof that opened by hinges and one with a cylindrical dome. He also wrote he would come to Los Angeles to supervise.

It was the cylindrical dome that they finally built. Reaves couldn't find out whether four-mule teams carried the telescope up the mountain, but somehow it got up there and some observations were made.



Annals of the Harvard College Obs.

*It sometimes snows in southern California at high enough elevations. This is the first astronomical observatory on Mt. Wilson.*

However, the proposed Spence Observatory never went any further. After some time, the 13-inch telescope was sent to South America. Later the building blew down in a storm. A 40-inch lens that had been made was sold to the University of Chicago for its Yerkes Observatory at Williams Bay, Wis. A decade or so later, the Carnegie Institution of Washington picked up the site and built the Mt. Wilson Observatory that now stands.

Today Mt. Hamilton is still a highly active observing site, but Mt. Wilson has been overtaken by light pollution from the valley below, seriously hampering night observations. That and rising costs seem likely to lead to a decision to "mothball" its large stellar telescopes (SN: 7/7/84, p. 5).

# Biology

## Motherhood comes to a mule

The rule is that mules are sterile, but a Nebraska mule named Krause last month delivered a daughter, which was appropriately named Blue Moon. The father is a donkey named Chester, who is also Krause's father. Although there are a few prior claims of births by mules, Blue Moon is the first to be verified by modern genetic techniques. Other alleged mule mothers have turned out to be misshapen horses or donkeys or kidnappers of unrelated foals.

Blood samples of Blue Moon, Krause and Chester were shipped to geneticist Oliver Ryder at the San Diego Zoo. Preliminary tests indicate that mother and daughter are truly mules—having 63 chromosomes, compared to 64 for horses and 62 for donkeys. Beating odds of about one in a billion, Krause seems to have produced a fertile egg carrying only horse chromosomes. This makes Blue Moon the genetic equivalent of mules of more common origin, which have horse mothers and donkey fathers.

## Stillbirth for U. S. panda

The second pregnancy of Ling-Ling, the female giant panda at the National Zoo in Washington, D.C., failed to produce a live cub. A 5-ounce male was born dead several days after zookeepers observed signs that Ling-Ling was pregnant. Tests indicated the baby panda died six to 12 hours before the birth. At birth, the baby appeared fully developed and no abnormalities were observed. After a preliminary autopsy, the cub's death was ascribed to a bacterial infection acquired when the fetal membrane broke prematurely about a week before the birth. Ling-Ling has been prone to urinary tract infections (SN: 12/24 & 31/83, p. 405), which can make their way into the birth canal, says zoo pathologist Richard Montali. The pup's infection occurred despite low doses of antibiotics administered to Ling-Ling during the pregnancy.

Ling-Ling's firstborn cub died of pneumonia soon after its birth last year (SN: 7/30/83, p. 68). Zoo officials say that Ling-Ling's behavior indicates she could be an excellent mother. Ling-Ling is now receiving additional antibiotic therapy, and the zoo officials say they will try to determine and eliminate the cause of her recurrent infections. They plan to attempt to breed her again next year if she comes into heat.

## Animal briefs

- The status of the snail darter, the small fish that forced a delay on the Tellico Dam project in Tennessee, has been downgraded from an endangered species to a threatened species. A U.S. Fish and Wildlife Service spokesman says this change does not mean the snail darter is on the rebound, but rather that biologists are more informed about its habitats. Since it was discovered in 1973 in the Little Tennessee River, the snail darter has been found in at least eight other waterways.

- Cotton top tamarins, members of a seriously endangered South African monkey species, are being bred successfully at the University of Wisconsin in Madison. The colony there has grown from 11 to 55 animals in seven years. Researchers report that to become competent parents the cotton tops need early social experience with other infants.

- For the first time a rare species of chambered nautilus has been captured alive. U.S. scientists collected six specimens of *Nautilus scrobiculatus* in deep water off Manus Island, Papua New Guinea. The nautilus is the only survivor of a group of animals, shelled cephalopods, that flourished millions of years ago.

- The government of Chile has approved the creation of a national reserve for the protection of one of the last known populations of wild chinchillas, a few hundred animals in the mountain ranges north of Santiago. Chinchillas, once hunted to make fur coats, are now raised commercially.