in for a $10,000 boost, and a $10,000 increase is listed for research on the chemistry and physics of soils. Naval stores research is to have a $2,500 increase.

The heaviest single item of increase in the entire Bureau of Chemistry and Soils is a jump from the present $286,000 to $381,000 in the new budget, toward completion of the national soil survey. This $95,000 increase, however, represents new money only in part; part of the fund simply replaces an earlier cut made during an economy drive, which had to be made at the time but resulted in slowing down the soil surveying and mapping program.

Science News Letter, January 25, 1936

ARCHAEOLOGY

Stone Age Paintings Show Hunters, Warriors, Game

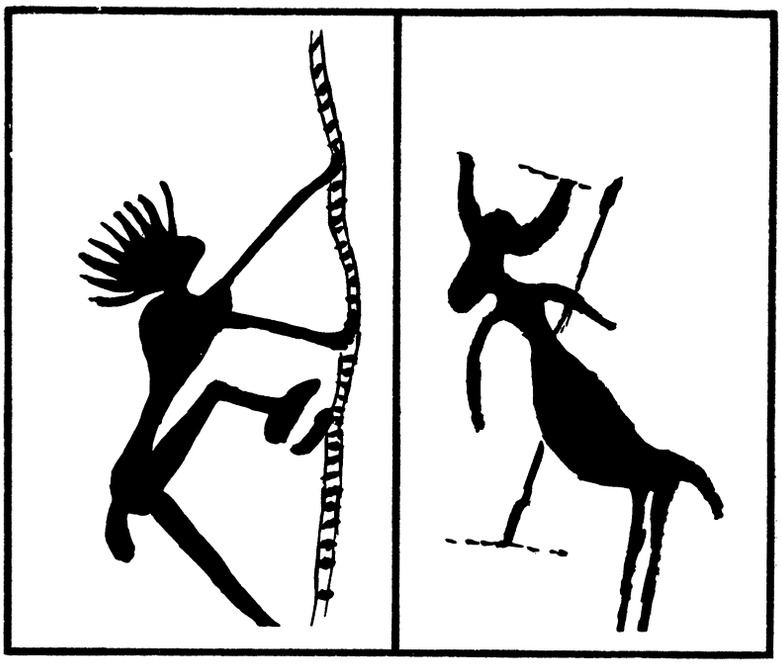
DID gentlemen of the Late Stone Age entertain "visiting firemen" in their lodge meetings? One picture, lately discovered on a cliff in eastern Spain, might indicate something of the sort. It is a lively, though crudely drawn, silhouette of a man climbing what appears to be a rope ladder. The figure wears only a breech-clout and a headdress of what look like feathers.

More prosaically, the picture probably represents a common means of getting up and down the steep rocky cliffs, in the niches of which the tribesmen painted hundreds of pictures of human beings, game animals, and other living things. The paintings have been studied by Prof. Hugo Obermaier of the University of Madrid. (*Forschungen und Fortschritte*, Nov. 20, 1935.)

The paintings are all in silhouette, usually monochrome, occasionally two-color. Their style is much inferior to that of the earlier art of the Old Stone Age as found in the caves of southern France and northern Spain, but it still represents clearly the kinds of animals the men of the artists' tribes hunted, and shows other interesting facts of their lives.

For one thing, war was probably in the world by then. Some of the scenes show marching armed men—hundreds of them—keeping close, ordered ranks. One individual painting shows a luckless individual transfixed by a spear, kicking in his death-agony. Bows and arrows are common; these weapons were unknown in the Old Stone Age.

Hunting scenes are shown in lively fashion, many of the animals being represented as shot down with arrows, or lying helpless with broken legs. Most abundant among the game are deer, ibex and wild pigs. One boar is shown lying kicking on his back, as though mortally wounded.



REALLY OLD SPANISH MASTERS

Artists of the Late Stone Age, 10,000 years ago more or less, painted these silhouettes on a cliff in Spain. The ladder-climbing figure, upper left, seems to have feathers in his hair; what looks like a tail is probably a loose end of his "Gunga Din" uniform. Opposite him is a figure in an animal mask—possibly a medicine man.

One exceedingly curious picture is of a fat spider, with flies buzzing about. Prof. Obermaier conjectures that this may be the cave-artists' tribute to the spider as an exceedingly skilled snarer of game in nets.

Science News Letter, January 25, 1936

PHYSICS

Atoms About You Are Exploding One By One

THE ATOMS of the air about you are exploding one by one and filling the room where you sit with showers of their fragments. Surprised?

Did you know the projectiles causing those atom explosions have traveled millions upon millions of miles across interstellar space?

These facts, almost taxing one's credulity, were established in the latest cosmic ray research in a mountain top laboratory on the summit of Pike's Peak.

Dr. Carl Anderson and Dr. Seth Neddermeyer of California Institute of Technology reported the findings of their mountain experiments to the American Physical Society.

To study the effect of cosmic rays having greater disintegrative power than those found at sea level, Drs. Anderson and Neddermeyer took, by truck, several tons of apparatus from Pasadena to Pike's Peak. Working night and day they packed a year of experimental measurements into a few months.

Using Dr. Anderson's Wilson Cloud

Chamber apparatus, already famous as the equipment wherein the positron was first discovered, they made over ten thousand photographs of the atom explosion tracks caused by cosmic rays.

Evidence was found indicating that many of the tracks were caused by a heavy type particle.

The terrific speed with which the atomic fragments were ejected in some cases represented more energy than could come from the nucleus of the struck atom alone. The fragments must, therefore, take up some of the energy of the incoming cosmic ray.

Science News Letter, January 25, 1936

MEDICINE

Leprosy Does Not Spread in Many Temperate Zone Areas

Stimulating Climate Suggested as Factor That Checks Spread of Disease; United States Practically Free

THE DRIVE of a stimulating climate such as is enjoyed in the northern part of the United States, may be an effective check to the spread of leprosy, Dr. C. A. Mills of the University of Cincinnati College of Medicine told members of the American Society of Tropical Medicine.

Dr. Mills sees leprosy sweeping over the entire world in the next century, as it did in the Middle Ages, if the trend toward higher world temperature continues. Meanwhile, he suggests moving the National Leprosarium from Carville, La., a place of low climatic drive, to Bismarck, N. D., the most stimulating spot available.

A stimulating climate is a vitally important factor for the existence of both men and other animals, Dr. Mills believes as a result of years of investigation of the relation of climate to health. The climate which he finds leads to increased bodily vigor, vitality and resistance to infection is one characterized by frequent daily changes in temperature without great extremes of heat or cold.

Comparing the distribution of leprosy over the earth with the vigor of the climatic drive shows that the regions of least stimulation are the ones where leprosy is worst, Dr. Mills pointed out.

"With very high indices of climatic drive, such as 26 in North Dakota, human resistance rises so high that the disease simply cannot be implanted, as witnessed by the disappearance of leprosy in and around Minnesota after scores of cases had been imported among the Scandinavian immigrants," Dr. Mills said.

"Within all individual countries this relationship of leprosy to climatic stimulation holds fairly well, increasing altitudes in tropical countries serving to provide temperate zone climatic effects."

The enigma of why leprosy has been prevalent in the Scandinavian countries is also explained by Dr. Mills on the basis of climatic drive. The prolonged benumbing cold for so many months of the year in these countries lowers man's resistance to disease much as tropical heat does. Dr. Mills' map of climatic drive shows most of Scandinavia to fall under a climatic drive similar to that which affects the Mediterranean countries.

Dr. Mills questions whether control of leprosy during recent decades has been due more to segregation of the patients or to the changing factor of climatic stimulation. He suggests that moving lepers to a stimulating climate may be more effective in checking the disease than segregating them in a region lacking the drive of a stimulating climate.

Little Danger in U. S.

The observation that leprosy does not spread in many parts of the temperate zone which embraces most of the United States was made more than ten years ago by Dr. G. W. McCoy, director of the National Institute of Health, U. S. Public Health Service.

There is practically no danger of becoming infected with leprosy in the United States, excepting in certain areas in the south, Dr. McCoy says. He does not, however, suggest climate as the factor which prevents the spread of leprosy in the major part of this country. What the reason may be is still unknown in his opinion.

Some of the lepers in the United States probably acquired the infection abroad, Dr. McCoy points out. The history of these shows that at some time each lived in a foreign country where the disease is prevalent. The remainder were infected in the endemic areas of this country. It takes a long time for leprosy to develop following infection, 25 years in a recent case, which explains why the disease may not have been discovered until after the patient had been living in this country again for some time.

Leprosy, Dr. McCoy explained, like measles or other communicable diseases, probably rises and falls in a more or less regular curve with high points on the curve when there is much leprosy and low points when it is less frequent. But the leprosy curve is much longer than that for other diseases and it takes two or more generations to go from a high point to a low one. This may explain why leprosy seems to disappear in a country as it has in Norway where it was once very prevalent.

Science News Letter, January 25, 1936

Cheese is 90 to 99 per cent. digestible, says the North Dakota Agricultural College.

Death Valley, noted for its summertime heat, is cool enough in winter to call for evening fires.