

ASTRONOMY

Why Mars Is Red

► THE red color of Mars is due to rocks on the surface of the planet that are naturally red colored.

This was the view expressed in Bloomington, Ind., by Dr. Clyde Tombaugh, discoverer of Pluto and at present in charge of telescopic observations of V-2 and other rockets-in-flight at White Sands Proving Ground. He discussed the geological significance of markings on the planet Mars with members of the American Astronomical Society meeting.

Dr. Tombaugh believes that the lower temperature of Mars' surface, compared to the earth's temperature, may mean that the surface is little affected by chemical action and that the desert areas of Mars consist of rhyolitic igneous rocks, which are naturally red in color.

Some scientists have proposed that the red color of the planet is the result of oxidation of its surface by what little oxygen the atmosphere may have had at one time.

Rounded oases observed in many places on Mars could be the sites of impact craters caused by the collisions of small asteroids. Great dust clouds on the planet indicate the presence of wind, and wind erosion would smooth out the abrupt slopes of the impact craters.

These oases show seasonal change and a dark color. Dr. Tombaugh suggests that

vegetation similar to earthly lichens finds a favorable environment in the pulverized igneous rock and shelter offered by the crater of each oasis.

The idea of intelligent life as the maker of canals on Mars was definitely rejected by Dr. Tombaugh. He believes the canal-like markings are real, however, and that they can be seen by practiced observers.

The radial pattern of the canals with respect to the oases is attributed to fracturing of a thick crust under strain by the impact of asteroids that created the oases. The fractured zones could give haven to a hardy vegetation in regions of unfavorable environment, and at certain seasons this vegetation might absorb the slight moisture present in the Martian atmosphere after the polar caps evaporate and melt after each Martian year.

Mars is a planet about one-half the diameter of the earth. It requires nearly two years to go around the sun, and its average distance from the sun is about one and one-half times that of the earth. The temperature on the planet at its equator in the summertime equals in warmth only that of a spring day in the temperate zones of the earth. Recently Dr. Seymour L. Hess, at Lowell Observatory, has shown that weather changes may occur on Mars similar to those on the earth.

Science News Letter, July 8, 1950

fin and diathermy. The use of heat produces definite physiological effects which have been well substantiated."

Rest is an important part of the prescription, he said. Excessive exercise is to be avoided.

Science News Letter, July 8, 1950

BOTANY-PALEONTOLOGY

Seedlings Are Living Experiment of Dead Age

► SCIENTISTS have reached back 30 million years through time in a "live" experiment on a period of the earth's history known only through fossils.

Seedlings of the Dawn Redwood, recently found living in the interior of China after it had been thought to have been extinct for millions of years, play the leading role in this experiment.

The seedlings, germinated from seeds brought out of China two years ago, were planted last year in half a dozen locations in Alaska, where forests of the Dawn Redwood flourished in past ages.

Reports arriving in Berkeley, Calif., indicate that most of the young trees, covered by snow for many months, have survived one of Alaska's most severe winters. Of 66 seedlings planted, 46 are known to be alive—at Anchorage, Ketchikan, Cordova, Sitka and Juneau. Five have died and 15 are still under snow.

The past winter has been a good test of the ability of the trees to survive indefinitely in the Alaskan environment, says Dr. Ralph W. Chaney, professor of paleontology at the University of California, who initiated the experiments.

This is quite surprising to scientists, Dr. Chaney added, since it has been supposed that the Dawn Redwood required a milder climate. It now lives in a much milder climate in China. Furthermore, scientists have believed that the tree was driven out of Alaska and other northerly regions by the encroachment of cold in past ages.

The results are forcing scientists to question some opinions they have long held, Dr. Chaney said. For example, it now seems possible that the climate of the northerly regions where the tree flourished may have been colder than is generally believed.

The results also warrant speculations on the possibility that the climate of Alaska may now be gradually changing to a warmer one, Dr. Chaney added.

This year Dr. Chaney plans to extend the experiments. He will send 125 more seedlings to Alaska for planting in such places as the Aleutians and as far north as Fairbanks. He may also send seedlings to Iceland, Greenland and Spitzbergen, where fossils of the Dawn Redwood, called *Metasequoia*, have been found.

The scientist said seedlings of the *Metasequoia* are thriving especially well in California, where about 1000 have been planted.

Science News Letter, July 8, 1950

MEDICINE

Remedy for Aching Joints

► IF you are over 50, you probably have aching joints. But don't worry. Heat and rest will ease the pain and if you don't overdo at sports, you can probably go on working for many years.

This, in brief, is advice from Dr. Walter M. Solomon of Western Reserve University, Cleveland. He gave more details, in more technical terms, in his report to the American Medical Association meeting in San Francisco.

"Surveys have shown that practically everyone who lives to be 50 years of age or older will complain mildly or bitterly about one or more of his joints, with the vast majority of complaints due to the degenerative form," Dr. Solomon said.

The characteristic change in the progress of the disease is degeneration and the eventual wearing away of the cartilage, the gristle or white elastic substance attached to articular bone surfaces. This may take months or years. It is usually considered to be the result of wear and tear of life, Dr. Solomon pointed out.

"Since articular cartilage is insensitive, the pain is probably due to secondary changes in other structures, including such factors as muscle spasm brought on by stresses and strains, irritation of other tissues, such as bursae, tendons, and the like, the elevation of the periosteum (the tough fibrous membrane surrounding a bone) and loose bodies in the joints," he added.

"The physical measure most effective in relieving pain, stiffness and muscle spasm is heat in various forms, including infrared lamps, bakers, compresses, baths, para-

This ad is worth \$1.75

if mailed with \$2., plus your name and address, for your copy of RIVER MATHEMATICS by Alfred Hooper. This \$3.75 cloth-bound book is one of the liveliest and most unusual books on mathematical lore, history and practice ever written. Off-the-beaten-track chapters on origin of number symbols, birth of algebra, earth measurement, using logarithms and slide rule, graphs of functions, etc. Use book as an adult text for learning mathematics. Or read it for pleasure. Tells how Egyptians figured out square on hypotenuse while building pyramids, how international date line was determined, etc. 400 pages. Hundreds of diagrams. Book sent postpaid. Dover Publications, Dept. SNL9, 1780 B'way, N. Y. 19. Money back if not delighted.