SCIENCE NEWS

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PARICUTIN, MEXICO'S NEW VOLCANO

I HAVE just seen Mexico's new volcano, Paricutin, from the air and it is like having a grandstand seat at the geologic drama that shaped the face of much of this country. Dr. L. C. Graton, of Harvard, and I flew to Uruapan from Mexico City in two small planes provided by Dr. Gonzalo Bautista, governor of the State of Puebla, and piloted by Captain Luis Martel and Lieutenant Carlos Cortez, of Puebla's aviation school.

The air around the volcano in late afternoon proved too dusty for successful aerial observation, but a start early next morning gave almost perfect conditions for observation. We saw Paricutin nestled among dead crater peaks, each of which in past geologic time must have had a few months of life. A great tower of smoke and dust billowed upward, with outbursts about every twenty seconds, showering red-hot pumice on the sides of the cone, which in February began to arise out of what was then a cornfield. Around the cone lay a great lava flow formed during past weeks, while to the northeast could be seen the little village of San Juan Parangaricutiro which is being smothered under several feet of volcanic ash that lies like blackish-brown everlasting snow over everything.

Our little plane buzzed about the erupting cone, keeping away from flying débris that might puncture the wing fabric or unbalance a propeller by an unlucky hit. Both planes twisted and turned for angle photographs that should be helpful to Dr. Graton in interpreting the volcano's geology.

The pilots and I spent eight hours on the previous night making a trip overland, twenty miles by airline but longer by auto, over ash-choked roads and by burro over trails for the last three miles, to the rim of the depression in which the volcano lies. Outbursts of flame lighted the countryside for miles around, and falling incandescent sand outlined the cone. A soft, harmless rain of volcanic sand pattered down as we clambered by volcano light over lava still steaming and hot to the touch.

Our ground and air views of America's latest volcanic blister impressed on us that nature is still building the earth and that study of such infrequent outbursts should give new knowledge of how the rocks of earth were manufactured. Since our food is grown on earth made of these rocks, and since our metals for war and peace come largely from deposits in molten magmas associated with volcanic action, new practical knowledge should come from studies of Paricutin.

As we flew over the Mil Cumbres (Thousand Peaks) region between Mexico City and Morelia, we realized that each of these old cinder cones had its brief days of fire and that although the earth is young here, geologic action was old when man began to record history. There are volcanic cones by the tens of thousands in Mexico, yet only one other eruption like Paricutin is recorded. That was in 1759, when a cone called Jorullo, about fifteen miles from Paricutin, was formed.—WATSON DAVIS.

GLASS WALLS IN HOMES OF THE FUTURE

THE homes of the future with sliding glass partitions that can be made transparent or opaque at will were described by Dr. Alexander Silverman, head of the department of chemistry of the University of Pittsburgh, in an address before a recent meeting of the American Ceramic Society. By sandwiching light-polarizing material in glass, then crossing two plates in a double wall construction, an opaque partition will result. When one of the plates is slid back, the partition will become transparent, permitting light to stream in.

Colored plate glass walls with artistic continuous metallized decorations was another possibility cited by Dr. Silverman. Electricity passing through the decorations would heat the room. Glass floors could be metallized like the walls, or glass foot-warmers designed as hassocks could be used. If additional heat were necessary portable stoves of artistic metallized glass might be designed. "A room at sixty degrees, insuring warm feet and uniform radiation toward the body from all sides, would be more comfortable," Dr. Silverman pointed out, "than to-day's home at seventy degrees or higher."

Glass construction combined with heating elements can also have built-in lights, thus producing attractive heating and illuminating effects. Tempered glass doors, either clear or opaque, may lead from one room to another and cover cabinets and closets. By the recently developed treatment of sheet glass to produce thin etched films only about a molecule thick, almost all reflected light glare can be eliminated.

Although glass plates can be used for both interior and exterior construction, glass brick and hollow tile are likely also to have increased use. The blocks will be produced in various colors, opaque, translucent, transparent. Artistic design will evolve from the more utilitarian approach now used in modern factory construction.

Glass wool will be more widely used for insulation. It is constantly being made lighter and is now available in a form weighing only a half pound per cubic foot. A four-inch layer of glass wool has the heat insulating value of a fourteen-foot concrete wall, it is claimed.

In the temporary housing provided for our Armed Forces in the Arctic regions, porous glass materials, especially wool, are employed to keep out the intense cold. Glass fabrics will also find increasing use in motor generators, in cables, and as battery insulators.

THE PHYSICAL EXAMINATION OF CHILDREN

A PHYSICAL examination of every boy or girl should be made before he or she is granted a work certificate, was stated by Miss Katharine L. Lenroot, chief of the U. S. Children's Bureau, at a press conference in Washington. The "special measures" for the protection of working boys and girls of high-school age called for in President

Roosevelt's proclamation of May 1 as Child Health Day were explained at the conference.

It is estimated that under the stimulus of war, more than 2,000,000 boys and girls between 14 and 18 years of age were employed as of October, 1942. More than 3,000,000 were employed during the 1942 summer vacation. An even larger number is expected to be at work this summer.

The physical examinations, Miss Lenroot explained, are needed to make sure that a child with defects of vision or hearing, with incipient hernia, or with unsuspected tuberculosis or heart disease, is not subjected to work which will further impair his health. Many such children should not work at all. Others might work in certain jobs under careful supervision.

Too long hours of work are another health hazard to boys and girls of high-school age. The child labor laws of 42 states now have a maximum work week of 48 hours or less for workers up to 16 or 18 years in a varying range of occupations. No child under 18, the Children's Bureau maintains, should be permitted to work more than eight hours a day or 48 hours a week either on farms or on other jobs.

Part-time jobs after school should be limited so that the combined hours of school and work do not exceed this total, except that as school is likely to be different from a job and less strenuous, some boys and girls of 16 and 17 may be able to put in a total of 9 hours a day on school and job together.

Some jobs have basic health hazards, such as exposure to lead, carbon disulfide, chlorinated solvents and benzol, which, as Miss Lenroot pointed out, are more dangerous to boys and girls under 18 than to other workers.

ELECTRIC FISH

ELECTRIC fish will hardly power war industries, but knowledge of their "shocking" ability may eventually lead to better understanding of how our own nerves work. New research on these strange creatures has just been reported by Dr. R. T. Cox, of New York University, in *The American Journal of Physics.*

Experiments with three small electric eels were first conducted by Dr. Cox and his associates. When the eels were gently prodded, the scientists' instruments recorded quick electrical pulses as high as 200 volts, lasting about two thousandths of a second. These discharges followed each other in trains of three to five. Single weak discharges come from the rear half of the eel; one of them always preceding a train of major discharges, probably serving as a warning signal to enemies.

When an eel discharges from fear of enemies or to obtain prey, it serves as electrical signal for other eels nearby to close in. In fact, it was discovered that eels could be called by producing a current in any manner. When placed in a weak electric current an electric fish swims in the direction of increasing current density, no matter which way the current is going. But in a strong electric current, it swims toward the negative pole.

"This sort of telegraphic communication very likely compensates the electric eel rather well for his partial loss of sight," Dr. Cox states, "the better so in that he commonly lives in muddy water in which the clearest eyes could see no farther than a few feet."

Tests were also made on the largest of all electric fish, Torpedo occidentalis, found off the north Atlantic Coast. Measurements showed a maximum voltage of 220 volts. Peak power of the torpedo was calculated to be a little less than one horsepower per pound of electric organ. These are values for an instant and would be very much less for electric activity over a longer period of time.

ITEMS

BETTER first aid treatment for burns and wounds is promised by a new methalose gauze dressing developed by Dave Brady, Robert Bauer and Fredrick F. Yonkman, pharmacologists at Wayne University, Detroit. A soothing, healing water-soluble preparation, easily compounded and applied, are the advantages cited in a preliminary report to the American Pharmaceutical Association. Sulfanilamide and sulfathiazole, infection fighters, are dissolved in the chemical, propylene glycol, then added to a solution of alkyl cellulose. Sprayed on loose mesh gauze, this mixture makes a durable elastic pressure bandage. Adhering readily to injured areas, the gauze tends to prevent loss of fluid and plasma proteins. The dressing can be removed at any time by soaking in water or salt solution. Excellent first aid treatment is thus obtained, the researchers point out, without the disadvantages of greasy ointments or astringent precipitants, such as tannic acid, that kill cells in the injured area, thereby delaying healing.

A DESTRUCTIVE enzyme which destroys the vital red blood cells during certain diseases may be ever present in our bodies. Ordinarily an inhibitor in the tissues and blood serum holds the enzyme in check. Evidence that this mechanism exists is reported in *Nature* by Brian Maegraith, G. M. Findlay and N. H. Martin, of the West African Force. Certain tissues, such as the lung, liver and kidney, will destroy washed red blood cells suspended in salt solution, the scientists observed. But this action is checked by adding blood serum. Addition of a minute bit of the poisonous chemical, sodium cyanide, or heat application also inhibited blood cell destruction. Men, monkeys and guinea pigs have been used in the experiments. So far it appears that the cell destroyer in an animal acts only on its own species, while the inhibitor will also protect the blood cells of other animals. Discovery of this action, if substantiated, will aid those trying to combat lytic anemias, such as the mysterious blackwater fever to which the armed forces are exposed in tropical areas.

DEVELOPMENT of a yeast powder suitable for human food and plans for the first manufacturing plant for its production, to be set up in Jamaica, are announced in reports reaching Washington from England. It was developed from a strain of Torula utilis by Dr. A. C. Thaysen and colleagues, of the Department of Scientific and Industrial Research at Teddington, England. In the *Lancet* the yeast food is described as having a "slight, not unpleasant taste," and as growing rapidly and being a source of good protein as well as all the B vitamins. The first plant for its manufacture is to be set up in Jamaica because of the availability there of molasses on which, with the addition of ammonium salts, the yeast can be economically grown.