

whole soils any longer. As a rule, only the mineral particles, ranging in size from coarse gravel to sand, are all that remain. These have been likened to the skeleton of the soil; they are more or less analogous to the fossilized bones that are usually the only remains we find of extinct animals. Missing is the "flesh" of the old soils—the finer clay particles and the organic humus that form the soil colloids. Missing also is the soil solution—the "blood" of the soil.

Yet despite the skeletonized condition of these fragments of ancient soils, it is possible to make some kind of legitimate inferences regarding the forest floors trodden by the dinosaurs, and the plains where the offspring of little Eohippus grew up into horses.

*Science News Letter, March 20, 1943*

## METALLURGY

## British Metallurgists Award Platinum Medal

► THE MEDAL of the Institute of Metals has been presented to a former president of the Institute, Dr. Harold Moore, C. B. E., director of the British Non-Ferrous Metals Research Association, a leader in industrial research in England, a communication just received in the United States reports.

The medal is unique in that it is made of pure platinum.

*Science News Letter, March 20, 1943*



**SPACE-SAVING MEALS** — *These tiny packets contain large quantities of food for shipment to hungry Europe.*

## PUBLIC HEALTH

## DI Men Avert Strike

Scientific detective force from U. S. Public Health Service tracks down the causes of skin diseases in more than 50 war plants.

► A THREATENED strike in a Seattle shipyard recently was averted by the DI men of the U. S. Public Health Service, the Office of War Information announced.

The DI men of the federal health service, (DI meaning "dermatoses investigation") are the six doctors specializing in skin disease and the one chemist who, under the leadership of Dr. Louis Schwartz, medical director of the Public Health Service, make up its Dermatoses Investigation Section.

This scientific detective force has tracked down the causes of skin disease threatening to cripple war production and prevented further outbreaks in more than 50 government and privately-owned arsenals and war plants.

Before these doctor-detectives went to work, almost 15% of the workers handling explosives in these plants suffered from some form of industrial dermatitis.

The strike threat in the Seattle shipyard came when electricians who had developed a skin eruption learned that they were working with cable made by a copper company where occupational hazards resulting in some deaths had recently been reported.

Plant officials persuaded the workers to stay on the job until a Public Health

Service DI man could arrive to investigate. Dr. Schwartz flew to Seattle, examined the workers suffering from "cable rash" and proved almost immediately that the cause was the chlorinated compound in which the cable was packed. He recommended precautionary measures which were put into practice at once. The strike was avoided and the workers protected.

A unique case recently solved by Public Health's DI men was an unusual skin rash which developed in two State Department clerical employees in Washington. Prior to the rash these employees had been sorting mail from India. The pouch in which this mail had arrived also contained glass tubes of oil samples which had broken and spilled over the documents in the sack. The DI men found by special tests that this oil contained an irritant which had caused the rash.

Government photographers, Navy Yard machinists, Bureau of Engraving printers and building trades' laborers are some of the members of Uncle Sam's wartime force of civil service employees served by Public Health's DI men in addition to industrial plant workers all over the nation.

*Science News Letter, March 20, 1943*

## PSYCHOLOGY

## Color-Blind Family

Father and two sons have among them three different types of color-blindness. Father is completely blind to violet end of spectrum.

► A FATHER and two sons who among them exhibit all the three known types of color-blindness were described by Dr. Dean Farnsworth of New York University at the meeting of the Optical Society of America in New York.

The father is violet-blind. He confuses violet with yellow, blue with green, and orange with red-purple. One son is red-blind. The other is green-blind.

Violet-blindness by itself is extremely rare. Dr. Farnsworth mentioned only

two conspicuous previous cases investigated in this country. One was of quite a different type, he said, and the other was not adequately investigated. However, he believes that violet-blindness is not so rare as generally supposed, that a number of cases have escaped detection because of inadequacy of the color-blindness tests.

Another rare feature of the present case is that the father is completely blind to the violet edge of the rainbow. He

does not see violet light at all. He sees yellow light but it appears colorless to him. The red-blindness and the green-blindness of the two sons are not uncommon among males.

*Science News Letter, March 20, 1943*

PHYSIOLOGY—PHYSICS

## Ability of Electric Fish To Produce Current Studied

► **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, New York University physicist. (*American Journal of Physics*, February)

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 came 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.

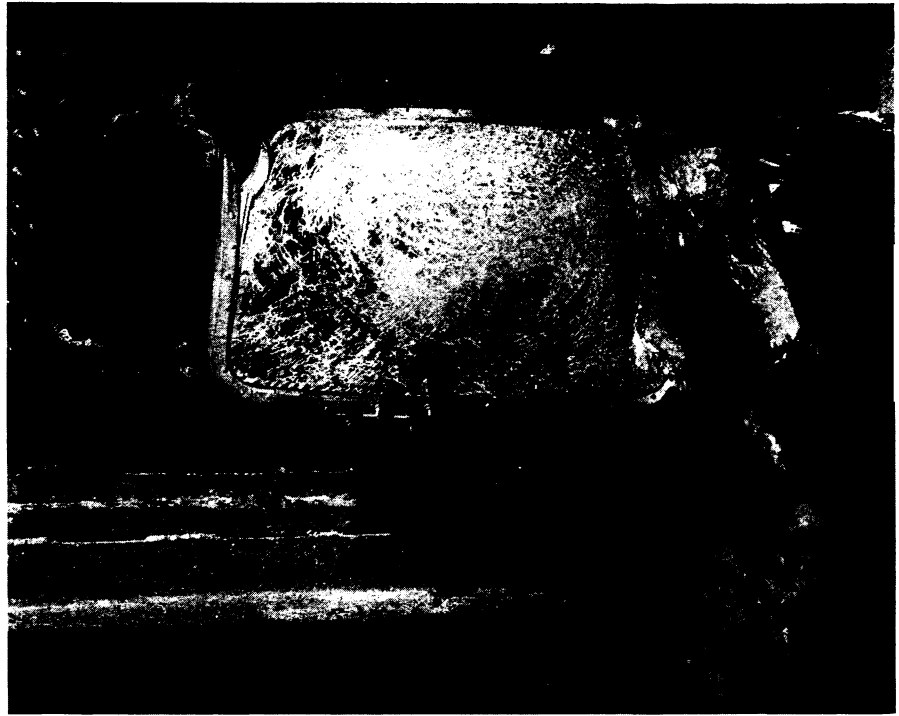
When an eel discharges from fear of enemies or to obtain prey, it serves as an electrical signal for other eels nearby to close in. In fact, the scientists discovered that eels could be called by producing a current in any manner.

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 towards 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 revealed 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.

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**FAILURE**—This is what happens when a large bird is thrown against a windshield with the speeds encountered in flight. This is a windshield that failed in the test, checking so badly that the vision of the pilot would have been completely obscured.

ENGINEERING

## Windshields Duck-Proofed

Tests arranged by Civil Aeronautics Authority show what happens when a large bird is hurled against windshield. Proper shield is developed.

► **DEAD DUCKS**, slammed against airplane windshields at velocities of 300 miles an hour or more, determine the ability of the glass to stand up against actual collision with flying birds in the air, in tests arranged by the Civil Aeronautics Authority.

Planes sometimes collide with ducks, geese, eagles, seagulls and other birds, up to heights of 8,000 feet. The birds' bodies crash through the windshield, and have been known to cause serious accidents. Chances of collision with birds are a special worry of night fliers.

The C.A.A. some years ago interested the National Bureau of Standards in the problem, and preliminary experiments with "synthetic" ducks made of rubber and other substances were carried out in Washington. Later, the project was transferred to the Westinghouse laboratories where manufacturers of the plate glass and plastics used in laminated

aircraft windshields collaborated with the C.A.A. in an elaborate research program, using freshly killed ducks and other birds as the missiles. The present "duck-proof" windshields will stop the body of a fifteen-pound bird thrown against it at speeds up to 300 miles an hour or more.

A compressed-air gun with an eight-inch bore and a 20-foot barrel is used. The bird carcasses are weighed and placed in flour sacks. They are then stuffed into the barrel and shot out at speeds simulating flight conditions.

Frosting and icing is prevented by placing a quarter-inch pane of tempered glass in front of the bird-resistant panel with an air space between them. Hot air is circulated through this space. This not only prevents frosting but also keeps the "duck-proof" panel warm, which adds to its strength in resisting impact.

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