

RADIO

Police Shortwave Systems Valuable Wartime Network

INTER-CITY police radio systems are so organized in at least 22 of the nation's largest cities and a number of smaller ones that they can play an important part in war efforts of their areas, a report to the International City Managers Association shows.

Police communications systems, virtually without change, can undertake prevention of escape of enemy agents across jurisdictional lines, prevention of large-scale sabotage and looting, facilitation of troop movements and civilian evacuation through coordinated traffic control, the report says.

Cities connected by police radio usually include a central city which clears messages, and as many as fifty other police jurisdictions in the metropolitan area. In most cases arrangements for cooperative broadcasting are made merely by exchange of correspondence.

When time is important, the Chicago system, for example, can mobilize 500 squad cars in Illinois, Indiana, Michigan and Wisconsin in five minutes.

Science News Letter, March 21, 1942

ASTRONOMY

Simon-Pure Red Star Blinks Like a Stop-Light

A FEW weeks ago the Harvard College Observatory received a radiogram from Prof. Jean Bosler, director of the Marseilles Observatory in France, announcing the discovery by astronomer R. Jonckheere of a "remarkable red star" and asked for its spectrum.

No spectrum of this star was to be found on any of the existing Harvard photographic plates, so Robert Fleischer made one with the observatory equipment on a red sensitive plate.

The star turned out to be truly red. All of its spectrum was confined to the red end of the rainbow sequence of colors, the end which does not photograph at all on a blue sensitive plate. The spectrum, examined by Dr. Dorrit Hoffleit, was declared to be of type Nb, to which only the reddest of the red stars belong.

The star itself was also photographed one night, both on a red and on a blue sensitive plate. It showed up brightly on the former, not at all on the latter.

However, the star was found on 120 Harvard plates taken during the past several years. Examination of these

plates disclosed that the star varies—blinks—but takes about 500 days between blinks. At its brightest, it is about three magnitudes, or 16 times, brighter than at its dimmest. But even at its best it would still have to be 16 times as bright to be seen with the unaided eye.

The star is in the constellation Monoceros, which lies between Orion and Canis Minor, the Lesser Dog.

Science News Letter, March 21, 1942

MEDICINE

To Arrange Instruction In Sister Kenny Treatment For Polio

A PLAN aimed at making the new Sister Kenny treatment for infantile paralysis more generally available is announced by the National Foundation for Infantile Paralysis. The treatment was originated and introduced into this country by Miss Elizabeth Kenny, an Australian nurse.

Under the Foundation plan, the University of Minnesota will arrange to teach certain physicians, physiotherapists and nurses Sister Kenny's technique. Later Foundation chapters will extend such training in cooperation with local agencies such as hospitals and health departments.

The limited number of trainees will depend upon the number of patients in the early stage of the disease being treated at Minneapolis Hospitals. The Kenny treatment is confined to such cases. Both the Foundation and the University are "doing all that is humanly possible to spread knowledge about this method of treatment of the acute stage of the disease."

Sister Kenny's treatment, reported to have made possible great improvement in cases usually considered "hopeless," substitutes exercise for splints and braces which immobilize the affected part.

Science News Letter, March 21, 1942

GENERAL SCIENCE

No Science at National Academy Annual Meeting

THE National Academy of Sciences has blacked-out the usual scientific sessions of its annual meeting to be held here April 27 and 28. Only business meetings will be held. Members of the press were notified officially that neither reporters nor photographers will be admitted to the Academy building during the meeting.

Science News Letter, March 21, 1942

IN SCIENCE

ZOOLOGY

Australia Destroys Its Dangerous Zoo Animals

GREYHOUNDS and dangerous zoo and circus animals were the first victims of the Japanese threat to invade Australia, according to the Australian News and Information Bureau.

Greyhounds were sent by their owners to the Society for the Prevention of Cruelty to Animals to be destroyed. Circuses and zoos likewise destroyed lions, tigers and leopards lest they break loose during air raids.

Science News Letter, March 21, 1942

ENGINEERING

Tiny Jet of Water Drills Steel and Hardest Metals

DRILLING a hole through a piece of hard steel with nothing more substantial than a tiny jet of salt water sounds fantastic. Yet that is just what Dr. Charles F. Burgess, former professor of chemical engineering at the University of Wisconsin, did to the astonishment of the Electrochemical Society of Chicago.

The hardest of metals, Dr. Burgess declared, can be drilled in this way, even tungsten carbide which can otherwise only be cut with a diamond.

The jet of salt water issued from a glass nozzle directed toward the steel plate. This nozzle was connected by a sealed in wire with the negative pole of a battery, the positive pole of which was connected to the plate. Thus an electrical circuit was established from the battery to the plate, up through the jet and back to the battery. The salt in the water made it a good conductor of electricity.

This is precisely the arrangement used in electro-plating, except that in this case the current is in the reverse direction and the metal is, so to speak, depleted. The metal torn off by the electric current, instead of being deposited on the other electrode, is washed away by the stream of water. Thus the jet wears its way through the metal.

Science News Letter, March 21, 1942

CE FIELDS

CHEMISTRY

Phosphorescent Materials To Make Blackout Safer

See Front Cover

A SELF-PORTRAIT of glowing chemicals provides the illustration for the front cover of this week's SCIENCE NEWS LETTER. They are the kind that "phosphoresce" when invisible ultraviolet rays fall upon them and continue to glow for some time after the exciting rays are removed. Such chemicals have great possibilities for use in air raid blackouts, as luminous paint or fabrics to guide people in the dark. (See *SNL*, Mar. 7.) The chemicals were photographed by their own light, the room being otherwise completely dark. The scientist examining them is Dr. Gorton Fonda of the General Electric Research Laboratory.

Science News Letter, March 21, 1942

NUTRITION

Red Cross Reveals Diet of Americans in German Camps

FIRST accurate account of what American prisoners are fed in a German prison camp was made public by the American Red Cross, which described the diet as "slightly insufficient."

The American internees, about 300, are at "Ilag VII," a prison camp at Laufen, near Salsburg, Germany, and are reported badly in need of cloaks, clothing, underclothing and shoes by an International Red Cross Committee delegate who visited them. Headquarters here cabled \$5,000 to Geneva, Switzerland, for purchase of needed clothes.

The diet which includes an unknown "food paste," is the same as in other prison camps and consists of per month, meat 1,325 grams; fish 248; margarine 720; cooking fat 320; food pastes 500; marmalade 770; potatoes 4 kilograms; cabbage, carrots 6 kilograms; sauerkraut 1080 grams. In addition there is a ration of 330 grams of bread per day. Usual menus: morning, tea substitute; noon, soup containing 40 grams meat, 25 grams beans, 10 of fat, a few potatoes; evening,

same, sometimes kraut. Hygiene and disinfection were described as good. Internees are allowed one hot shower weekly.

Red Cross nutritionists here immediately set about calculating the value of this diet in terms of calories and plan to send food packages to the American internees to supplement their diet.

Neither Red Cross nor Government nutritionists here were able to say what the food pastes are. A guess was offered that they might be some kind of macaroni or other flour and water paste. The tea substitute also is unknown here.

Science News Letter, March 21, 1942

PUBLIC HEALTH

Trichinae Killed By Freezing in New Process

PORK can be made safe for human consumption, so far as any lurking trichinae are concerned, by proper freezing, U. S. Department of Agriculture scientists have determined. Sections of pork or pork products not more than six inches thick are freed of the dangerous parasites by exposure to a temperature of five degrees Fahrenheit for 20 days, or ten degrees below zero for ten days, or 20 degrees below zero for six days. Thicker pieces may be made safe by longer freezing.

The Department warns that in many food locker plants temperatures are not kept low enough to insure a complete kill in stored pork.

Science News Letter, March 21, 1942

PHYSICS

Army Uniforms To Match; Standard Shades Approved

IF you have a good eye for color you've noticed that seldom do two Army uniforms, officers or enlisted men, exactly match. All that is to be corrected now with an official Army "swatch book" giving standard colors for all articles of Army dress.

The book, which will cost clothiers \$5.00, contains samples of cloth showing the approved shades of the various fabrics used by officers, warrant officers, enlisted men and personnel of the Army Nurse Corps.

Also standardized is a color for leather known as "Army Russet" for belts, boots and shoes.

Present Army uniforms for officers as well as enlisted men vary in color from tan, to khaki, to brown, to a brownish green. Official shade is "olive drab."

Science News Letter, March 21, 1942

PALEONTOLOGY

Find Evidences of Life Half-Billion Years Ago

FOSSILS showing that life existed half a billion years ago, in a shallow sea where the Appalachian mountains now rise, have been found in a series of limestone strata long thought to be barren of such evidences. The formation is described in a new publication of the Smithsonian Institution, by Dr. Charles E. Resser, paleontologist in the U. S. National Museum.

The strata constitute what is known as the Maryville formation. It crops up in many places in the long chain of Eastern mountains. Geologically, it is classified as of mid-Cambrian age. The fossils, mainly of ancient relatives of crabs and crayfish known as trilobites, are related to similar forms found in the Rocky mountains.

Science News Letter, March 21, 1942

ASTRONOMY—PHYSICS

Short Life So Far For Universe Suggested

A VERY short life for the universe so far—a mere two or three billion years—was suggested by new theories of evolution of the stars presented to the Inter-American Astrophysical Conference, by Prof. H. N. Russell of Princeton, leading authority of the life and death of stars.

This is only about the age of the oldest rocks on the earth and it may mean that the earth is as old as the rest of the universe.

Prof. Russell's new theory takes into account the recent ideas that the stars are kept shining by means of the energy they obtain from transmutations of the atoms that compose them.

The older ideas of 30 years ago, proposed by Prof. Russell at that time, pictured the stars as undergoing a regular evolution, one sort turning into another.

Prof. Russell now concludes that, puzzling as it may be, the white dwarf stars have not arrived at their present state through an evolutionary process but were "born" that way. The supergiants, blazing at a great rate, consume so much energy that they could not have kept up that pace during the new short lifetime of the universe. Prof. Russell therefore suggests that these stars had an existence during which they did not shine but were actually 170 degrees below zero Centigrade on their surfaces.

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