MEDICINE

Dye for Radiation Sickness

A blue dye may save lives in case of another atomic bombing because it helps blood clotting in the illness following exposure.

➤ A BLUE DYE may save many thousands of lives in the event of any future atom bombing. It is called toluidine blue. Its potential value was discovered by Drs. J. Garrott Allen and L. O. Jacobson, of the University of Chicago, in studies made under contract with the Manhattan Project.

The dye might save those survivors of an atomic bomb attack who were having the bleeding stage of radiation sickness. A considerable number of Hiroshima and Nagasaki survivors succumbed a few weeks after the bombings from the infection promoted by this internal bleeding. Even without the blue dye they might have been saved, American doctors think, if they had gotten blood transfusions and penicillin.

Patients with acute leukemia and certain other blood disorders may also get significant temporary benefit from the dye so far as the bleeding in such illnesses is concerned, the Chicago doctors report in *Science* (April 11).

The cause of the bleeding that comes in persons exposed to near fatal doses of ionizing radiations such as those from the atom bomb is an excessive amount of heparin in the blood, the Chicago doctors find. Heparin is an anti-blood clotting substance normally present in the liver. It is used medically to counteract a tendency to dangerous blood clots. Too much of it makes the blood clot very slowly or not at all. Fatal bleeding might result.

A dog suffering from radiation sickness like that seen in the Japanese after Hiroshima and Nagasaki had blood that took more than 48 hours to form a clot when a bit of it was tested in a glass tube. The clotting time returned to normal within 20 minutes after the blue dye was injected into its veins.

Neither vitamin K, the anti-bleeding vitamin, vitamin C, calcium salts nor blood transfusions prevented hemorrhage or stopped it in the irradiated dog. But the dye controlled the bleeding.

Science News Letter, April 19, 1947

PHYSICS

Long-Distance Dialing

➤ STRIKES of long distance operators won't be effective sometime in the future because of two developments that are still experimental:

1. Dialing of long distance calls directly from your telephone.

2. A machine that automatically times and prices the call you are making and makes out a bill for it.

In one part of Philadelphia, the first long distance dialing is being used, but so far it is the operators who do the actual dialing.

The gadget that sees to it—mechanically—that you pay for the call is in experimental use in a Los Angeles suburb. It is called "automatic ticketing." When the Los Angeles subscriber dials a toll call to a nearby community, the equipment automatically prepares a printed ticket with all the information needed for properly charging the call.

These developments were made during the war and first put into operation in 1943. The Bell System, which owns four-fifths of America's telephones, plans to expand these installations to other communities to provide an automatic long distance network, but an estimated 40% of the Bell System's subscribers still requires operators for local calls.

A combination of the Philadelphia long distance dialing system and the Los Angeles billing device may lead to future long distance calls made as easily as a call is dialed on a city phone today.

Another telephony development which may speed some types of future calls was first demonstrated in 1945. It is a radiotelephone circuit permitting 24 two-way calls to be transmitted on a single radio-frequency carrier wave.

Developed by the Federal Telephone and Radio Laboratories, the system uses the pulsetime modulation principle. A single transmitter and receiver and one radio-frequency carrier wave were used in making 24 calls at the same time.

Basically, the system uses an electronic selection system which allots certain fractions of each second for each of the 24 calls.

Science News Letter, April 19, 1947

BACTERIOLOGY

Britons Isolate Antibiotic From Penicillin Relative

➤ TWO BRITONS, John H. Birkinshaw of Pinner and Stephen E. Michael of Croyden, have isolated a new antibiotic drug from *Penicillium patulum* and *P. expansum,* two molds related to the species from which penicillin is obtained. U. S. patent 2,417,584 has been issued to them on their product.

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