

MEDICINE

Salt Water for Shock

Future first aid treatment of shock in severe burns may be just a drink with just the right amount of salt in it. Proved life saver for mice.

► A DRINK of salt water, of just the right strength, may become the future first aid treatment for shock in extensive burns.

Experiments at the National Institute of Health by Dr. Sanford M. Rosenthal, principal pharmacologist of the U. S. Public Health Service, point that way, although so far no human trials of the method have been made.

Survival rate for the first two days among burned mice given about one-fourth of a teaspoon of the salt drink was about twice as high as among the animals not given this drink. When the animals were given two salt drinks, one and four hours after the burn, only about 13 out of 100 died the first day and 17 out of 100 on the second, as compared with about 93 out of 100 dying among untreated controls.

Dr. Rosenthal compared the salt drink treatment for shock from burns with other standard methods of treating shock. No benefit was observed, he reports, from epinephrine (adrenalin), posterior pituitary gland extract, adrenal cortical extract, or a synthetic adrenal cortical hormone preparation.

Human blood serum showed little effect when injected into the veins of the mice. Mouse blood serum was more effective but not as good as the salt drink.

Whether a salt drink can replace blood serum or blood plasma as life-saving treatment for shock in human victims of burns cannot be told until more experiments have been made. The salt drink treatment is based on a different principle from that of replacing lost fluids as by plasma or blood transfusions, Dr. Rosenthal explained.

In mice, he finds, the acute mortality, that is death, occurring within a day or two after an extensive burn, is closely related to a disturbance of the balance of sodium and potassium in the body as well as to the escape of fluids from the blood stream. The upset in sodium-potassium balance seems the most important, he reports, and may be the cause of the concentration of the blood and other effects attributed to the loss of fluids in the burned areas. Doses of potassium speeded death in the burned mice, and

when this was given with sodium chloride, it antagonized the effects of the salt drink.

The strength of the salt drink, he explains, has to be such as not to upset the fluid balance of the body, and should have about the same osmotic pressure as that of the blood.

Since it is the sodium of the salt that is effective, other sodium salts, such as sodium bicarbonate, might be given if the salt drink proved too nauseating. Salt tablets of the right dose with a glass of water might prove the most practical method for first aid use, if the new treatment develops into one useful for human burn victims.

Further studies on methods of saving those who succumb to burns after the first two days will be made, Dr. Rosenthal says. The studies have so far been limited to effects of treatment for shock, rather than for the burn itself, since in man from 60% to 80% of the deaths

from extensive burns occur within the first few days as the result of shock.

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CHEMISTRY

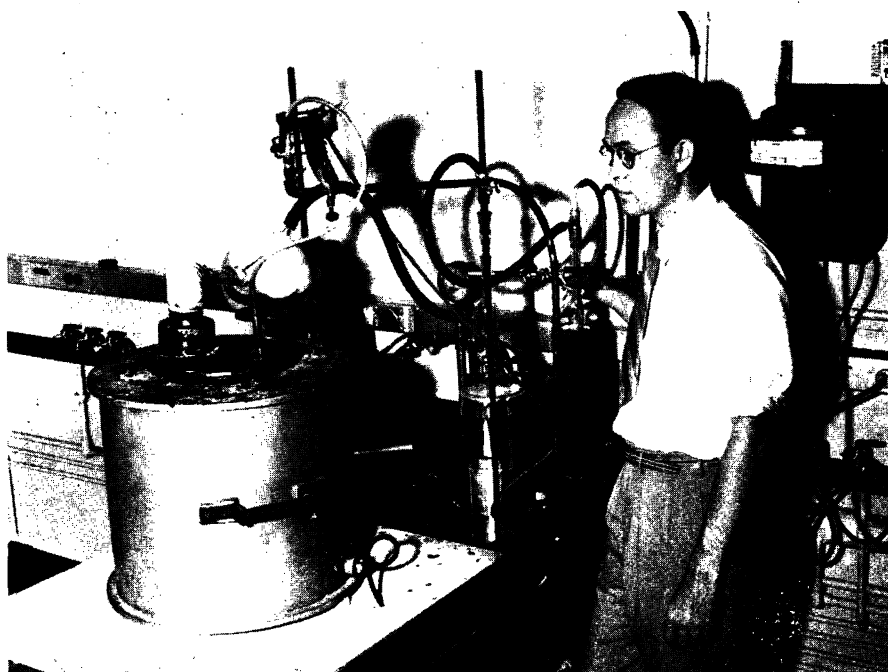
Synthetic Rubber Paracon Now Being Produced

► THE DEVELOPMENT of a new kind of synthetic rubber which will help meet essential war needs was announced by the Bell Telephone Laboratories. This new material, christened "Paracon," looks and feels like ordinary rubber, has a high resistance to damage by oil or gasoline, and is superior to natural rubber in resistance to heat, light and oxidation. It is inferior to natural rubber in resistance to steam, alkalis and acids.

In the raw state, Paracon is unusually adapted to moulding into intricate shapes. It is useful not only as a replacement for rubber, but in particular as a material for special application where its combination of unique properties is required. The aircraft industry is an example.

Paracon can be derived from agricultural products and coal products, or from coal and petroleum sources. It can therefore add to the present supply of rubber substitutes without interfering with the production of those already under way.

Synthesis of Paracon was accomplished by Dr. C. S. Fuller and Dr. B. S. Biggs



FOR PARACON—Here is Dr. C. S. Fuller with some of the equipment in Bell Telephone Laboratories with which he and Dr. B. S. Biggs developed "Paracon," newest synthetic rubber.