

MEDICINE

Life Span of Paraplegic

► THE 1,000 young adults who are made helpless by severe spinal cord injuries each year are now believed to have the opportunity to live out their normal life span.

Paraplegics, as these people are called, are able to produce professionally, commercially and industrially on every economic level, reports Dr. Morse P. Manson, of Birmingham Veterans Administration Hospital in Van Nuys, Calif., to the National Vocational Guidance Association.

Paralyzed from the waist down, these people suffer loss of movement and disturbance or loss of sensation in the lower extremities. The higher the level of cord injury the greater the disturbance to the bodily functions.

The injuries which occur suddenly and often at the peak of physical development have grave effects on the personality. Although rehabilitation is a great factor at present for injured veterans, the rehabilitation of the paraplegic will continue as long as there exist airplanes, falling, diving and accidents involving these and other activities.

A study of 115 male paraplegics, all of whom were veterans, showed that the occupational selections of paraplegics and non-paraplegics vary only slightly. After vocational counsel over 40% of the cases enrolled in schools or entered training while over 50% remained vocationally inactive.

The paraplegics engaged in some kind of vocational training showed marked preference for professional objectives while vocationally inactive paraplegics preferred skilled and clerical types of work. This group selected 52 different employment objectives ranging from farmer to elevator operator.

A follow-up study made by a training officer indicates that the adjustment patterns of paraplegics in training and non-paraplegics are very similar. "Instead of urging and encouraging paraplegics to continue to improve their work efforts, the training officer must be on the alert for indications of over-work and over-exertion."

Science News Letter, April 29, 1950

ENGINEERING

Cheaper, Smaller TV Sets

► A CUT in both cost and size of television receivers is promised by a manufacturing method described to the Institute of Radio Engineers by Dr. M. U. Cohen of Balco Research Laboratories, Newark, N.J. The use of prefabrication and printed circuit principles is the basis of the process.

The new manufacturing methods presented by Dr. Cohen resulted from investigations made for the U.S. Army Signal Corps. They apply to radio construction as well as to television. Printed circuits, instead of wire, use painted tracks of metallic ink on plate. One silver ink used is a solution of silver oxide. The printed circuit is a two-dimensional affair requiring little space.

The ordinary radio and television set

contains from five to 30 tubes and hundreds of other parts, Dr. Cohen stated. In present manufacturing methods, all of these parts are assembled into a set and individually wired and soldered into place. A high degree of skill and long assembly lines are needed.

The new method prefabricates all this necessary wiring before any assembly is started. The complete wiring pattern is first laid out in the engineering laboratory on a plastic or ceramic chassis plate using metal paints, wires, or foil as conductors. The various radio parts are then soldered into position.

When the set has been tested and perfected, the final wiring pattern is copied photographically, and then reproduced au-

tomatically on a printing press on chassis plates similar to the original. All the wiring is thus printed at very high speed and at low cost.

The radio parts are then put into place on the printed wiring, a prepared stencil or pattern being used to see that the parts are placed only in their correct positions. This operation can be done by hand without tools.

When the parts have been placed into position, they are all clamped to the printed plate. Plate and parts are then dipped into a bath of molten solder so that all are soldered to the printed wires at the same time. With this method, Dr. Cohen emphasized, printed circuits may be used in all kinds of radio and television equipment.

Science News Letter, April 29, 1950

METEOROLOGY

Some Dust Bowl Relief; East Colder than Normal

► SOME relief in the form of rain may be expected between April 15-May 15 for the nation's dust bowl farmers, the Weather Bureau predicted. Normal rains are expected by the bureau's extended forecast section in parts of Nebraska, in Kansas, Missouri, Oklahoma, parts of Texas, New Mexico and Arizona, as well as all the far western states.

"Abundant" is the word the Weather Bureau uses for the amount of rain expected during the latter part of April and first part of May from Texas eastward and north-eastward through the Gulf states, middle Atlantic states and New England. However, Jerome Namias, chief of the extended forecast section, defined "abundant" as "greater than normal."

Northern plains states are in for sub-normal rains, the Weather Bureau said.

Prediction of normal rainfall in the dust bowl states will be a relief to federal soil conservation officials who said the situation was "pretty bad" there.

"Although we have enough know-how so that the situation cannot become as bad as it was during the 1930's," said Dr. Mark L. Nichols, chief of research for the Department of Agriculture's soil conservation division, "if there is no rain there soon, there is little we can do to help."

The eastern half of the country can expect a little but not much relief from the recent colder-than-normal temperatures. The extended forecast section predicts that temperatures from mid-April to mid-May will average below normal in the East, although they will be milder than in the first part of April.

West of the continental divide, temperatures will be above normal. Near normal temperatures are predicted for the Gulf Coast, northern New England and a strip extending from the Dakotas southward to west Texas.

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