MEDICINE

Check Polio-Induced Limp

By surgery it is now possible to slow down the rate of bone growth in the leg not shortened by polio in children. A chart on bone growth has been worked out.

➤ CHILDREN with polio-shortened legs can be saved from a lifetime of limping by a method announced at the First International Poliomyelitis Conference in New York.

The method consists in an exactly timed operation to shorten the longer leg. It was devised by Drs. William T. Green and Thomas Gucker III and Miss Margaret Anderson of the Children's Hospital of Boston.

A leg paralyzed in childhood commonly does not grow as rapidly as a normal leg. If only one leg is paralyzed, the child may when he is fully grown have one leg as much as four and a half inches shorter than the other.

To correct this difference, one or more of the growing ends of the bone in the longer leg is operated on so that it will grow at a slower rate. The object is to slow down the normal, longer leg to the point where the paralyzed, slower-growing leg can catch up with it in length by the time the child stops growing.

The big problem is to catch the growing end bone of the longer leg at exactly the right time. A guide for this, in the form of a chart of bone growth in 160 children, was worked out by the Boston scientists. The chart was made from measurements of X-ray pictures of the children who were observed continuously from periods of three to 11 years. The growth expectancy for the leg bones was determined for each age level from this chart. From this the scientists could predict the rate at which the longer leg would grow each year, and thus when to operate.

The child who shows signs of failure in growth and consequently has a more string bean physique may be more likely to get polio, it appears from growth studies by Drs. Neil N. Litman and James F. Bosma of the University of Minnesota.

They studied the physical progress of 216 school children who got polio during the 1946 Minnesota epidemic and compared these children's progress with that of 198 of their brothers and sisters and 607 of their classmates.

The physique and rate of growth of the brothers and sisters and classmates up to July, 1946, was close to the average for American school children. But, the scientists report, "there was a distinctly higher incidence of growth failure prior to this date in the children who contracted clinically-proven poliomyelitis in the 1946 epidemic.

"The results of this study," they conclude, "definitely show that growth failure and susceptibility to clinical poliomyelitis are related phenomena."

Science News Letter, July 24, 1948

AERONAUTICS

Jet Planes for Civilians Predicted for 1951

➤ JET PLANES for civilian transportation, which will fly nearly seven miles above the surface of the earth carrying 30 passengers at 500 miles per hour, are predicted for 1951.

The prediction was made by Robert E. Hage, Boeing Airplane Company, at the meeting of the Institute of the Aeronautical Sciences at Los Angeles. By that time the commercial use of 30-passenger turbojet planes can be technically feasible and commercially profitable, he declared.

This type of transportation, he added, will offer to the commercial air passenger more speed, greater flight frequency, and more comfort at fares comparable to present standards. The goal of the airlines is increased speed, especially if at the same time improvements in safety, comfort, reliability and economy result.

Immediate development of a prototype turbojet transport will speed the development of turbojet powerplants, airport facilities, airline procedures, and the overall efficiency and growth of the American commercial air transport system. Furthermore, Mr. Hage said, a reserve of highly efficient transport aircraft will be available for military service in a future emergency.

Science News Letter, July 24, 1948

Pressurized Tanks Urged

➤ PRESSURIZED TANKS directly attached to jet engines were advocated at the same meeting to replace engine testing in either closed or open wind tunnels, by J. F. Manildi, University of California at Los Angeles. It is a less costly way and dodges serious problems that arise in tunnel testing.

In closed tunnels, he said, the problems of dissipation of heat generated within the engines and the interference due to tunnel walls are nearly insurmountable. In open tunnels the power required to insure a stream of sufficiently large cross-section is extremely large.

With pressurized tanks attached to the intake of the jet engine, the effect of both forward speed and altitude can be simulated. Installation costs and power requirements are much lower than for tunnel installation, and the evaluation of internal performance of the engine from the test data is vastly simplified.

Science News Letter, July 24, 1948

POPULATION

Small Cities Are Now Gaining in Importance

➤ SMALL CITIES and suburbs are increasing rapidly in size and importance and large cities are growing more slowly. Decentralization is slowly taking place in this country, with small cities as centers.

These changes have been taking place chiefly in the last 10 years, declares Prof. Donald J. Bogue of the Scripps Foundation for Research in Population Problems at Miami University.

City dwellers are gradually moving to the suburbs to escape congestion and high taxes, he finds.

At the same time, automobiles and electric power are making it possible for small communities outside the sphere of large cities to support a larger population than before. As a result, small cities are growing and developing their own tiny suburbs and farming regions.

While regions close to the big cities and those over 65 miles away have been growing faster than the big cities themselves, the zone which lies between 45 and 65 miles from the large cities has been hardly growing at all. Cities in this zone are too far from the metropolis to be suburbs and too near to avoid strong competition, Dr. Bogue points out. The next 10 years may see development of this region because of pre-fabricated housing, electric power and motor transport.

Science News Letter, July 24, 1948

ENTOMOLOGY

Leaf-Cutter Bee Makes Nest By Using Scissors and Paste

See Front Cover

➤ THE LEAF-CUTTER BEE, which looks like a small bumblebee, is often seen flying among rose bushes in search of tender leaves. The bee cuts leaf patches with its jaw shears, as shown on the cover of this week's SCIENCE NEWS LETTER, and carries them away for the construction of its nests. Favorite nooks for nests are holes in posts, and spaces under weather boarding. The bee constructs a nest by carefully fitting and pasting together leaf patches into a thimble-shaped container. Bee-bread, made from pollen, is first stored in the nest, and then an egg is laid on this lump of food. Finally the nest is sealed up with several additional patches. The bee uses oval patches for the sides, and round ones for the top and the bottom of the nest. The bee that hatches from the egg emerges by chewing a hole through the wall of leaves.

Science News Letter, July 24, 1948