

## SCIENCE NEWS

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### ARTIFICIAL LIMBS FOR WAR VETERANS

ENGINEERING and surgical talent is going to work on the job of developing the best possible artificial limbs for war veterans. For the first time, engineers and surgeons will tackle the problem together in a large-scale, organized effort.

All types of artificial limbs that have been developed in this country and in England, Russia, South Africa and elsewhere will be studied by a newly established committee of the National Research Council. In addition to searching for the best features now available, the committee may through its own research develop new, still better, mechanisms.

The committee was created by the National Academy of Sciences and the National Research Council at the request of the Surgeon-General of the Army, following a meeting of representatives of the Navy, Veterans Administration and limb manufacturers, as well as of the Army. The chairman of the committee is Dr. Paul E. Klopsteg, professor of applied science at Northwestern University and director of research of the Northwestern Technological Institute.

The Army at present does a custom job of contouring and fitting the artificial legs, arms, hands and feet that it supplies to wounded soldiers. But it buys certain raw materials and prefabricated parts. Its new specifications call for the best joints available, but it is hoping for something still better. It is pointed out that joints for artificial limbs are not yet of as high a type as the joints found in airplanes.

Fit, weight, durability, maintenance and repair are other problems to be considered by the new committee. The Veterans Administration would like to be sure, for example, that if a veteran gets a leg in New York City and then moves to El Paso, Texas, he can get repairs for it there without difficulty.

The Veterans Administration has contracts with about 150 artificial limb manufacturers. Where possible, the limbs for veterans in its ninety-four hospitals are bought from manufacturers in the region of each hospital. This simplifies the problem of repairs to some extent, but there are always cases of veterans needing service while traveling if they have not moved from the region.

Each manufacturer at present has patented the special features of his product that are unique to it. For the Veterans Administration, which makes very few artificial limbs, it would be desirable to have a reciprocal agreement worked out so that manufacturers might use each other's patented features to develop satisfactory limbs for veterans.

One of the aims of the new committee is to bring about as much standardization as possible in parts and mechanisms to assure simplification of maintenance and repair. Dr. Charles F. Kettering, head of the General Motors Research Division, Detroit, and Dr. Roy D. McClure, chief surgeon of Henry Ford Hospital, Detroit, are consultants to the committee.

The operating headquarters of the committee are at Northwestern University, Evanston, Ill.—JANE STAFFORD.

### ITEMS

EVIDENCE of great economy in the animal body's use of mineral elements is offered in a study by Professor G. Hevesy, of the University of Copenhagen, on "tagged" atoms of artificially radioactive phosphorus in laboratory mice. The research is reported in a testimonial volume celebrating the sixtieth birthday of the noted physicist, Professor Thé Svedberg, of the University of Uppsala, recently published in Sweden, copies of which have just been received in this country. Professor Hevesy injected into the bodies of pregnant female mice a solution of a phosphate which had been rendered artificially radioactive, so that the atoms could be detected by suitable apparatus wherever they turned up. After the young mice were born, one was immediately killed and its body tissues analyzed to find how much of the maternal dowry of "tagged" phosphorus had been passed on to it. After three months, when the new mice were full-grown, another was killed and similarly analyzed. It was found that 40 per cent. of the phosphorus concentration present in the newborn mouse still remained in the body of its littermate three months later. In another series of experiments, the radioactively "tagged" phosphorus atoms were traced through three generations. The concentration in the granddaughter mice was found to be six tenths of one per cent. of what it had been in their mothers at birth.

THAT the death rate from childhood diseases has been reduced no less than 93 per cent. during the past twenty years, is reported by the Metropolitan Life Insurance Company. There are 90 per cent. fewer deaths from scarlet fever and 80 per cent. fewer deaths from both whooping cough and measles. The death rate from diphtheria among children of elementary school age, who were insured by the company, is only 1/26 what it was two decades ago. Only one fourth as many die to-day from tuberculosis and pneumonia as would if the mortality rate of twenty years ago still prevailed. The death rate among children between the ages of five and fourteen from all causes combined was cut 65 per cent. between 1922-23 and 1942-43. For every two children who die under current conditions, more than five would have died if the death rate of two decades ago had continued, the company estimates. All colors and both sexes have benefited by this improvement, but some more than others. The reduction in deaths among children of this age group, as shown among those insured in the company's industrial department, is larger among white children than among colored. Girls have profited more than boys. Children of elementary school age are only half as likely to have fatal accidents to-day as they were twenty years ago. Children are only about one quarter as likely to-day to die from burns and scalds.