

researches led to the rejuvenation operation.

Dr. Steinach's emphasis on sex hormone treatment is in line with the work of American medical scientists, many of whom have been extremely critical of the results claimed for his operation. Sex hormone treatment is now being used by a number of American doctors with good results not so much in rejuvenation

of elderly people, but in stimulation of normal sex gland activity when this has been lacking in young people.

For the future, Dr. Steinach says his work points to a prospect of "no land of eternal youth, but one of bearable old age in which within natural limits the optimum physiological conditions of life prevail."

*Science News Letter, May 11, 1940*

## GENETICS

## Double Blessed Event More Likely For Older Fathers

IF YOU are an expectant father, your chances for having twins instead of one son or daughter are slightly greater with each year of your age, it is revealed by a statistical study conducted by the National Institute of Health and reported (*Human Biology*, Feb.) by Drs. J. Yerushalmy and S. E. Sheerar.

Older mothers are more likely to give birth to twins than are younger women. And twin births occur with much greater frequency in families already large than they do as first or second births.

But the fact that older fathers are more likely to have twins cannot be explained by the fact that older women are more likely to have older husbands. When only the births to young mothers are considered, there is still a considerable increase in the proportion of twin births to total deliveries with advancing age in the father.

The influence of age of mother and order of birth, although showing up clearly when all twin births are considered, seems to apply principally to the births of non-identical twins, those resulting from a double ovulation rather than the dividing of a single egg cell.

Mirror imaging in twins, the trick of nature that makes one twin look like the other's reflection with reversed

handedness, hair whorl, and so on, is explained by Dr. H. H. Newman of the University of Chicago, in the same issue of *Human Biology* as being due to environmental rather than hereditary influences.

Such reversals, whether superficial ones like hair growth or fingerprint patterns, or even having the heart and other organs on the wrong side, are much more common in joined "Siamese" twins than in separate identical twins, and in joined twins occur much more frequently in the right-hand member. Joined twins are due, it has been found, to twinning so late in the development of the embryo, that production of two complete and separate individuals is impossible.

Mirror imagery often accompanies the occurrence of defects in development and is probably due, Dr. Newman concludes, to growth-depressing agents.

*Science News Letter, May 11, 1940*

## CHEMISTRY

## Derivative of Castor Oil Now Used in Fly Spray

ADD to castor oil's usefulness: a new fly spray is made from it. A derivative of castor oil is being used to

replace part of the pyrethrum in commercial fly sprays. Large quantities of pyrethrum obtained from a species of chrysanthemum plant are used in suitable hydrocarbon oil bases as fly sprays. The most important of the chief sources of pyrethrum is Japan and the supply is adversely influenced by the war. Castor oil when subjected to heat is broken down into undecylenic acid, heptaldehyde and residues. The undecylenic acid is separated by distillation and treated with isobutylamine to form isobutyl undecylenamide. This, when used in combination with small amounts of pyrethrum in a suitable base oil, is an excellent fly spray, better than either pyrethrum alone in the base oil, or isobutyl undecylenamide alone.

*Science News Letter, May 11, 1940*

## PHYSICS

## Exiled Woman Scientist Continues Work on Uranium

OUT of war-threatened Stockholm comes the latest news on uranium fission—the amazing splitting of this heavy element by weak neutrons with the release of enormous amounts of atomic energy.

Reporting in the British scientific journal, *Nature* (March 16), is Dr. Lise Meitner, exiled German Jewish woman scientist, who first suggested to Prof. Otto Hahn in Berlin that his pioneer experiments really showed that uranium was split by neutron bombardment. Dr. Meitner, for years before the coming of Hitler to power in Germany, had been a close associate of Prof. Hahn in his researches.

At the Research Institute for Physics in Stockholm Dr. Meitner has been carrying out experiments on the capture "cross-sections" of atoms of lead, thorium and uranium exposed to the neutrons.

The problem of cross-sections is a vital one in nuclear physics for it helps to determine whether a bombarding particle like a neutron will be scattered by the nucleus or captured.

One may visualize "a capture cross-section" by a baseball analogy. The area over which a player, standing still, can catch a baseball thrown at him would be his "capture cross-section." All players would have different capture cross-sections for baseballs, just as the nuclei of atoms have different capture cross-sections for neutrons. This is a rough picture intended only to give a partial idea of the meaning of a cross-section as physicists use it.

Dr. Meitner says that the nucleus of

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