

nations and properties may differ because of the radically different environmental conditions to which the plants are subjected.

While it is possible for the amateur gardener to have a lot of fun with hydroponics if he does not stop to bother about the costs, Dr. Gericke emphasizes that using the system for profit-making purposes is a task for scientific knowledge and practical horticultural experience. He is convinced that hydroponics is destined to play an important part in the

food and flower production of the future, but he feels no less strongly that the important advances will be made by men and women who bring with them not only enthusiasm for a new thing but also hard work and patiently acquired skill.

The name, hydroponics, is a word of Dr. Gericke's own coining. It is formed by analogy with a Greek work, *geoponics*, meaning earth-working — that is, agriculture. Hydroponics is the liquid analogue of agriculture.

*Science News Letter, March 23, 1940*

## CHEMISTRY

## Japanese Make Synthetic Fiber From Soya Bean

### Yarns Finished to Resemble Either Silk or Wool; Lecithin Used to Prevent Premature Hardening

**O**UT of the protein in soya beans two Japanese chemists have developed a strong synthetic fiber of high tensile strength which can resemble wool or natural silk, depending on production methods. The process is described in a new patent, No. 2,192,194, just granted by the U. S. Patent Office, to Toshiji Kajita and Ryohei Inoue of Tokyo.

Scientists of the U. S. Department of Agriculture express little surprise that a wool-like fiber can be created from soya beans, for it has been done experimentally, also, in the United States. The claims of a silk-like fiber are novel. While samples of the new Japanese fiber are not available, it is believed that this claim relates to the appearance of one form of the fiber which might be straight without the kink of wool, and which might possess a sheen resembling that of silk.

Chemists, too, are interested in the new patent because it describes the use of the chemical, lecithin, to stabilize the protein solution prior to its ejection into a hardening bath. American investigators have found that with soya bean protein solutions a critical stage is reached where pectin is present. Pectin is often used by cooks to make jelly. If the pectin in the solution makes it gel prematurely the whole batch must be thrown out. If the Japanese can prevent this gelation with lecithin they have made a real advance in the synthetic fiber art.

Italy was the original home of wool-like fibers made from protein and Italian

scientists introduced and perfected Lanital—made from milk. The protein of the casein in milk is the basic starting point for this product.

It has been pointed out many times that the protein of soya beans, or fish, or other sources might also be used for fibers and world-wide research has progressed rapidly to perfect these other possibilities.

In the Orient, where soya beans form such an inexpensive, widely-produced and used commodity, the perfection of methods of making fibers from the protein in the bean represents the East's answer to the West.

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## GEOLOGY

## Giant Artesian Springs Caused Carolina "Bays"

**G**REAT, bubbling prehistoric artesian springs and not a spectacular shower of giant meteorites from outer space are the most probable cause of the mystery "bays," or craters, of the central Carolinas, Prof. Douglas Johnson, geologist of Columbia University, told the Sigma Xi chapter of Denison University.

Prof. Johnson told how his continued research and analysis has led him to revise the older theory that a shower of giant meteorites made the craters. He used the Carolina "bays" and their study as an object lesson in scientific research and its methods.

The great artesian springs, some of which on a small scale still remain in the region, may offer a better explanation of the formation of the craters than does the hypothesis of meteorite showers, but Prof. Johnson still does not regard his own theory as perfect.

"I fully realize that some other hypothesis, perhaps one that wholly escaped my search, may prove the key which will solve the mystery of the Carolina craters," Prof. Johnson said.

Admitting that his theory of artesian springs as the cause of the craters is more intricate and complicated than the earlier theory of giant meteorites, Prof. Johnson concluded:

"We can draw some worth-while lessons from our study. One is that the simplicity of an explanation is no guarantee of its validity. The human mind prefers simple explanations of natural phenomena. Yet it remains true that Nature often moves in complex as well as in mysterious ways her wonders to perform."

*Science News Letter, March 23, 1940*

China's National Geological Survey will shortly issue a report on China's fossil plant life of 25,000,000 years ago, thus continuing non-military scientific work despite war conditions.

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