

Food From Solar Energy In Two Years Goal Of Scientists

By RENNIE TAYLOR
Associated Press Science Reporter

PALO ALTO, Calif.—(AP)—Within two years Stanford university scientists expect to be able to show hungry peoples around the world how to use sunlight to produce nutritious food cheaply and in great quantities.

They have worked out a comparatively large-scale method of controlling the process of photosynthesis. This is the process by which plants use sunlight to convert water, carbon and a few other simple chemicals into the tissues of which all living things are made.

All the major scientific problems have been licked. The remaining job mainly is to work out the technical and engineering details which will give the greatest yield for the smallest expenditure

of materials and energy.

Some minor scientific problems remain but given another two years, says Paul M. Cook, chemical engineer in charge of the project, the researchers should have enough data to launch this spectacular undertaking on an industrial basis.

Just now the scientists are starting their first small pilot plant. It is a futuristic-looking collection of barrels and shallow rectangular tanks atop the Stanford engineering lab.

Process Described
Into each tank the researchers will put something less than 100 gallons of water which has been "spiked" with a few ounces of nitrates, and a few pinches of minerals such as magnesium, iron and sulfur compounds.

A few hundred little green ocelled plants, too small to be seen individually, will be dumped into the tanks. Small pumps will stir the water and add carbon dioxide now and then. Sunlight will do the rest.

These little plants are a type of algae or seaweed called *Chlorella pyrenoidosa*. Each contains chlorophyll, the stuff which makes plants green and converts chemicals into cell substances with the aid of light.

The walls of the cells soak up a little of the spiked water. When sunlight strikes them their chlorophyll goes to work. Soon the cell gets so big it splits in half and forms two complete cells. This goes on at a great rate until the *Chlorella* is so thick that the water turns dark green. Then the harvest starts.

Once the engineering plans are worked out, tanks may be built hundreds of times larger and yields

measured in hundreds or thousands of pounds.

Feeding Tests Started
As it is, the pilot tanks should be producing enough to start the experimental feeding of chickens with *Chlorella* in a couple of months, Cook said. It already is being used in the test feeding of laboratory rats.

The main object of the pilot plant is to see how far they can go toward increasing efficiency and reducing costs before any big scale operation is undertaken.

The process does not necessarily need direct sunlight to operate. The yield, Cook said, is almost directly proportional to the intensity of the visible light cast upon the tanks. This means a slowing down of production on cloudy or dark days but as long as there is some light there is a corresponding amount of production.

Egg, Milk Prices Too High, Brannan Tells Producers

DENVER, March 8.—(AP)—Farm price supports are pricing eggs and milk out of the reach of many Americans, Secretary of Agriculture Brannan said Monday.

"We must get eggs to market at a fair price or tell American farmers to quit producing them," he told the National Farmers Union convention.

The per capita consumption of milk is not far from its depression level, Brannan said; while the government has the equivalent of two to two and a half billion pounds of whole milk it bought to keep prices high.

Americans ate 11 eggs less per capita last year than in 1948, he said, yet the government has about 210 million dozen eggs stored in caves.

Brannan cited these as two examples of why his plans should be adopted.

Despite the opposition of farm bureau and national grange leaders, he said, the farmers favor his plan. "These pressure experts are afraid to tell the people for whom they profess to speak," he declared.

Farmers earned less than half per capita than non-farmers last year, he said, and if 1949 trends continue, farm income will drop to 40 percent this year.

Acceptance of sliding scale price supports, he said, is "equivalent and hoping that the problem will get tired and go away."

For many years Kyle had been associated with his father, William Kyle, in the fish packing business on the Siuslaw river.

Survivors include the widow, Lillian; and two sons, Maj. David M. Kyle Jr., stationed in Germany, and Robert E. Kyle, Florence.

Bill Gives Marines Voice In Military Planning

WASHINGTON, March 8.—(AP)—Chairman Vinson (D-Ga.) of the House Armed Services committee introduced legislation yesterday that would give the Marines a direct voice in the nation's top military planning body.

This action is an outcome of the committee's investigation last October into the "navy revolt" against present administration of the national defense act.

Under the Vinson proposal the commandant of the Marine corps would become a voting member of the joint chiefs of staff along with the military heads of the army, navy and air force.

Marine and navy witnesses told the committee during its inquiry last fall into the interservice row that they feared the army and air force were out to destroy the marine corps eventually.

D. M. Kyle Sr., State Fish Board Member, Dies

FLORENCE, March 8.—(AP)—David M. Kyle Sr., 64, member of the State Fish Commission, died at his home here Sunday.

For many years Kyle had been associated with his father, William Kyle, in the fish packing business on the Siuslaw river.

Survivors include the widow, Lillian; and two sons, Maj. David M. Kyle Jr., stationed in Germany, and Robert E. Kyle, Florence.

Dams Endanger Salmon, Senate Committee Told

WASHINGTON, March 8.—(AP)—Salmon—whether coming, going or standing, still—are endangered by dams, Oregon and Washington fish and wildlife experts told a Senate committee yesterday.

Their testimony was before a committee considering a budget recommendation that \$250,000 be allowed for planning Ice Harbor dam, but the witnesses made it clear their views held for three other Snake river dams also under consideration.

Donald R. Johnson, of the Oregon Fish commission, said approximately 15 percent of salmon headed downstream are lost in the pressure of turbine wheels in each big dam.

Fish headed upstream, he said, are delayed two or three days in negotiating Bonneville dam fish ladders. And if this period is multiplied by construction of other barriers, salmon lose interest and won't spawn.

Still a third objection to the new construction, Johnson said, is that

COOTIES TO MEET

Initiation is scheduled at tonight's meeting of the Cootie pup tent of Roseburg at 8 o'clock in the Vets lounge. The first, second and third degrees are also to be conferred.

Johnson was joined in his testimony by J. H. Cellars, secretary of the Columbia River Salmon and Tuna packers, and John M. Hurley, of the Washington department of fisheries.

All contended there is no need at the present time for the navigation waterway which the four dams are intended to provide.

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