

## SOCIOLOGY

# Describe Typical Family

► THE TYPICAL AMERICAN family now plans to have an average of three children.

Only 2.2 children per family are needed to maintain a stable population in the United States.

Prof. Ronald Freedman, a University of Michigan sociologist, has reported that "barring any radical social and economic changes related to family planning, the present population boom will continue for some time to come.

Prof. Freedman based his remarks on a nationwide study conducted by the University of Michigan Survey Research Center in cooperation with the Scripps Foundation for Study of Population Problems.

Interviews for the study were conducted with a scientifically selected, random sample of more than 2,700 married women aged 18 to 39 living with their husbands. This age group includes 94% of the nation's child-bearing women.

He said there was a "very strong consensus" that most families expected to have between two and four children. Three-fourths of those interviewed said they planned to have a family this size. The re-

mainder divided equally between those planning to have fewer than two and those planning to have more than four children.

"Most of those with less than two children are people who cannot have as many as they want for physiological reasons," he said. "Many of those with more than four are people who are having more than they want because of failure to plan successfully or because they do not believe in planning.

"There is now rather general acceptance of the idea of deliberate regulation by each family of the number and spacing of children in relation to its needs and resources. Some groups are opposed to some methods or some motives for family limitation, but all major groups in our population now approve of family limitation under some conditions."

One-fifth of the nation's couples have completed planned families, Prof. Freedman reported.

Another two-thirds have partially planned for their children, while the remaining eighth have "excess fertility," unwanted pregnancies resulting from poor planning or no planning.

Science News Letter, August 10, 1957

## PLANT PHYSIOLOGY

# Algae Mass Produced

► ALGAE MUST be kept "content" or they do not multiply rapidly, scientists have found in recent attempts to "mass-produce" the tiny one-celled plants. Just the right balance of carbon-dioxide-enriched air, swirling nutrient solution and temperatures had to be maintained. Algae are microscopic plants that make up the greenish "goo" sometimes seen floating on puddles and ponds.

If they can be grown in large amounts, scientists say, the algae promise to give man a human or animal food which could either be grown cheaply in a small area, or act as a means for storing the sun's energy for future use.

Algae store the sun's energy by a process called photosynthesis. This is a plant's way of converting light energy from the sun and carbon dioxide into plant foods and tissues such as sugar and cotton-like cellulose.

Exploring ways of producing these useful one-celled plants are Dean R. Thacker and Harold Babcock of Charles Pfizer and Co.'s Research Laboratories, Brooklyn, N. Y., who reported their findings to the Association for Applied Solar Energy.

Since the algae in one acre of pond water can yield as much organic material as an acre of grass, cornstalks or some forests, there is no reason, scientists believe, why they cannot be grown, harvested and used much like these familiar sources of food and forage.

But the algae are difficult to "manufacture."

Even under the best conditions, the

scientists obtained only one-third the amount of dry, powdered algae that was possible with their small-scale production methods. Also, the cost of the product is about 50 cents per pound, which cannot compare with the price of wheat, corn or soybeans.

Using smoke-stack gas as a cheap supply of carbon dioxide, and searching for a new, hardier type of algae that can grow faster under a wider range of light and temperature are ideas the scientists are working on to help cut the costs of raising the new and unusual "crops."

Until there is some major research "break-through," however, they do not think algae could be considered an economical source of food.

Science News Letter, August 10, 1957

## PLANT PHYSIOLOGY

# Grow Algae Successfully Outside Natural State

► ALGAE, the single celled, yellow green plants that may hold a solution to the world's future food problems, have been isolated and grown in vitro, two American scientists report.

The algae live inside many different kinds of animals, such as mollusks, sea worms and jelly fish, which are found in tropical coral reefs and shallow marine waters. Scientists have not been able to make accurate studies of these important little plants because they could not be grown

outside of their "host" animal and in bacteria-free cultures.

Drs. Paul A. Zahl and John J. A. McLaughlin of Haskins Laboratories, New York, report in *Nature* (July 27) that, using a synthetic marine medium, within 15 days they observed a significant increase in the number of algae grown. The 5,000 to 10,000 vegetative cells originally present increased to about 30,000,000. Motile forms of the algae, indicating the presence of flagella or whip-like structures that propel the algae, were also seen after one to four weeks in continuous low light.

The motile cells repeatedly reverted to the vegetative type, the scientists report, and successive transfers are "now routine."

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