

Nature's Factories Sustain All Life

By LYDIA KING FRETSE
Special Writer for The Birmingham Eclectic

Late June brings with it a full measure of leaf-green, which is the living freshness of summer. Now, before the slow stain of life falls on roadside and garden, we should like to stay nature's hand while we savor that richness and fragrance which is so brief and so change-ful.

But this lush greenery which we enjoy is only a by-product—hap- penance, as it were—of nature's important business of food pro- duction, which will continue at its peak throughout the sum- mer months. This unique function of all green plants—greenery in the leaf. Here and there alone, nature is working during every hour of sun- light to manufacture food which sustains every living creature. You have read more than once and you will read them again. However, in spite of repetitions, all too few of us are aware of the tremendous im- portance of this food-making process. We are even less aware of how closely it is linked to the life of each one of us.

LEAVES of every shape and size lie all about us, and hang like a canopy over our heads. If we could spread out all the leaf surface in any park or wooded area, one continuous sheet it would cover hundreds of acres, for a single large maple tree has as much as a half-acre of it.

The amount of leaf surface ex- posed to the sun determines the amount of radiant energy which the plant can trap and this in turn determines the amount of food it can produce. In full sunlight a square yard of leaf surface will manufacture only about one gram of carbohy- drates per hour. Yet this same daylight hours, will produce more than 3,000 pounds of pure food concentrate during the three months of the summer season.

ALTHOUGH a leaf may be as thin as paper, its structure is complicated. It breathes through small openings on its surface. It has the power to lift to itself large amounts of water collected from the earth by its root system. At the same time certain of its cells are busy trapping sunlight so that it can manufacture food out of elements which it selects from water and air. This it ac- complishes by a process called photosynthesis, which can only be carried on in the presence of sun- light by the action of a magical substance called chlorophyll. This simple inorganic substance are turned into living tissue. Chlorophyll has an impressive formula (MSN₄C₅₅H₇₂O₅). If these various molecules are ar- ranged around a nucleus of iron instead of magnesium you have a substance called hemoglobin which carries oxygen to the cells. So we are linked to the plant that sus- tains us.

Such simple to make an extrac- tion of chlorophyll in the labora- tory. You end the experiment with a solution of iron sulfate and iron salts like grass, cut after the rain. But to duplicate the action of chlorophyll, you still need the clever hand and mind of man. It is nature's secret formula.

JUST HOW the leaf can take carbon from the air and hydrogen from water, then combine and transform them into a substance that resembles neither, and that is trapped within it, is energy from the sun. So we have the resulting substance is called starch or cellulose. So we have starch and cellulose of this basic food substance.

Thus the green leaf manufac- tures food for men and animals as well as for itself. Any cereal or candy factory, in fact any food producing concern, is only convert- ing this plant-made food into more useable forms.

Such foods as milk, meat, egg, and fish are all derived from basic plant-made carbohydrates. The im- mediate form of any food depend- upon whether you are eating your carbohydrates first, second or third course. In like manner, factory, egg and clover; poultry, cotton, grains and insects; fish eat water plants which in turn are fed by al- gae and other underwater plants. Even the lowly mussel is depend- ent upon diatoms which are micro- scopic water plants.

BEFORE ANY life could exist on earth, plants had to build up a food surplus, far beyond that need- ed for their own sustenance. Thus there could be no animal life on earth until the rocks were covered by a sustaining mantle of green. And so it is that the green leaf is the link between our own frail lives and the sun which is the source of all energy. It is no fair- field statement to say that "all flesh is grass."

So too it is that the energy which has been stored by plants over the ages is available for con- sumption by the rest of the world of our mechanical world. Let us not miss the meaning of leaves as they hang trembling over our heads. Their aspect of beauty has been added by man. From nature's point of view they are 100 per cent functional. And this function of the green leaf, so complicated as we try to explain it, goes on all about us on any summer day, tranquil, serene and unmodified.

Have You Met
Former Royal Oakers Mr. and Mrs. J. D. Atkinson of 2901 Blythe drive, who moved here in May? Atkinson is warehouse and distribution manager of General Motors Truck and Coach. Mrs. Atkinson is a member of the Royal Oak Massale and the Red Cross Motor corps. They have one daughter, Mrs. Robert Fleckinger of Clawson.

Birthdays, anniversaries, guests, births, parties are all news—call the society editor about them.

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Engaged to U of M Grad
At a family dinner in Ann Arbor last Saturday, following the commencement exercises, the Franklin E. (Hank) Webers of Chesterfield road, announced the engagement of their daughter, Janet Elizabeth, to Wayne Ellsworth Chapman. He is the son of L. Governor and Mrs. John William Chapman of Springfield, Ill.

Miss Weber attends the University of Michigan college of Architecture and Design and is associated with Delta Gamma. Her fiance was graduated from the same college and is affiliated with Alpha Tau Omega. He plans to enter the University of Illinois Law school in the fall. No wedding date has been set.

Goes to Ann Arbor For Annual Session
A columnist for The Eclectic and horticultural expert, Mrs. William H. (Alice) Weesels, Burlingame has been invited to attend the seventh annual conference to discuss the problems of an aging population. The session is being held at Ann Arbor, June 28-30, with the general topic being, "Aging—Everybody's Business."

The conference is being ar- ranged by the gerontology division of the University of Michigan which has been called on by many branches in the past for program assistance in this field. The conference will attract about 600 industrial leaders and "senior citizens", is open to all interested in the problem of older citizens from an industrial or individual standpoint.

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MULHOLLAND'S MEN'S AND BOYS' DEPARTMENT

Wins Will-O-Way '54 Scholarship



Western Vacation
John Scott Watson, son of Mr. and Mrs. E. B. Northway of Knox street, leaves today to spend two months at Vagabond Ranch, Granley, Colo. His parents will take him to Chicago where he joins the wagon west caravan of 30 boys who will vacation at the ranch.

Cranbrook Quartet Attends Conclave
Four eighth members of Cranbrook institution attending the eighth summer session of the National Training Laboratory in group development, June 23-July 10, at Gould Academy, Bethel, Me.

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