Advances in Science and Agriculture

(An Editorial Feature)

After the successful synthesis of Chlorophyll by the Germans recently, top-ranking scientists of the world are now concentrating their efforts on the synthesis of blood. Chlorophyll is closely allied to blood chemically, and success in the synthesis of blood is a foregone conclusion. When this is achieved, we will be living in an amazing new world, where anaemia and malnutrition will not exist and where economy in the use of food will greatly help to solve the world's food problem. Laboratory synthesis of sugars, starches and proteins and artificial meat of some kind, closely resembling animal meat in quality and taste, can not be ruled out. Vegetarians and non-vegetarians alike can eat such meat without any prick of conscience.

The juice of *Acerola*, a small fruit-bearing tree native to Puerto Rico, is 80 times more potent in Vitamin-C than orange juice.

It has now been established that water is pulled up to the tops of tall trees by the negative pressures developed in minute concave capillary surfaces in the interior of the leaves.

The age of *meteorites* was determined by studying the ratio of potassium-40 to argon-40. The age of the earth is approximately 4500 million years, as two meteorites of which the age was determined was as old as the earth itself.

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Radioactive wastes are disposed of by absbrbing in clay pellets, glazing them in a furnace and then burying them safely. Scientists estimate that by the end of the 20th century, if the atomic race continues at the present pace, there would be 3 tons of radioactive wastes produced per day, which would require one-twentieth of the world's oceans for safe dilution. The interior of the earth would therefore remain the only place for safe disposal.

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Dr. Cesare Emiliani of the University of Chicago has predicted that within the next 10,000 years an Ice Age may bury cities like Chicago, Berlin and Moscow under a thousand feet of ice. The prediction is based on the pattern of past variations in the earth's temperature. These bygone temperatures are indicated by measurements of the ratio of oxygen-16 to oxygen-18 in the cells of fossil micro-organisms in deep sea sediments. This ratio depends on the temperature of the water in which these tiny sea creatures lived. The last glacial ice left the St. Lawrence Valley of North America only about 10,000 years ago.

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Potatoes, onions, cabbage, pork, beef etc. will keep longer when irradiated with nuclear radiations.

Electronic computers are used by the S. Weather Bureau to forecast rain fall, and snow fall quntitatively. Temperatures, winds and pressures are also being forecast by machine.

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Space travel is the big news of the day. Analysing the potentialities, scientists are shocked rather than jubilant. Why ? It is roughly estimated that 2000 million dollars (nearly Rs. 1000 crores) will have to be spent to project four human beings into space. Mass migration into spatial planets, even if there are inhabitable ones, is thus out of the question. Few may circle round other planets, collect thrilling scientific data and return safely to earth to tell us what they saw and how they felt. But with the known resources of the world, more than this can not happen, in the field of conquest of other planets and human immigration into them. But the evil potentialities are many and shoking to imagine. With a man having been put into orbit and made to land back safely in a pre-determined place, after circling the earth, it has now become possible to make any part of the globe a target of attack, within minutes. The man orbiting the earth, will be moving roughly at 18,000 miles an hour. He needs no power to drive him at this speed, the earth does it free for the nation which sent him. Tfhe does not die in his space machine, but can live for a few hours in it (and there is no doubt his cabin can be made comfortable for him for as long a time as required) he can drop his lethal hydrogen bombs on any target with remarkable precision. (We are told that the Space man landed back in a *predetermined* field).

Within less than two hours of rocketing the space machine into orbit, any part of the world in any continent or country would become vulnerable. The space man will be safe, nothing can intercept him, he can do his destruction work with absolute calm and peace of mind such as no one in this world would ever enjoy. The expenses for destroying the world would be much less than sending a few hundred men into space — the expenses for the manufacture of the hydrogen bombs or other nuclear devices and the cost of initial projection of the space machine into orbit along with these devices. A speed of 18,000 miles an hour is given to the space machine by the earth. Once in the orbit, no fuel aad no energy is required to drive the space machine. If not commanded to land back on earth, it will continue to circle the earth for a few thousands or millions of years just like any other celestial satellite. But a space man, intent upon evil purpose, will leave the orbit and be back in his country two or three hours after he left it Within this time he would have, if he wanted, rained death, destruction and disaster over every other country in the world.

Given peaceful conditions on earth, man will be able to synthesise any known material in the world, within the next 100 years. The only thing he may still miss is the laboratory synthesis of *life* itself. Sugars, carbohydrates and starches, proteins and complex proteinaceous foods, will all be produced on he assembly line — and the raw materials will be nothing other than water, and carbon dioxide and nitrogen from the atmosphere.

Artificial illumination combined with carbon dioxide application hastens flowering of plants.

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Gibberellic Acid applied in lanolin paste to young stems of plants increases the height

of plants three-fold in three to four weeks, retards flowering in some ornamental and crop plants and advances flowering in others.

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The inversion of a ring of bark on the trunk of a tree results in checking phloem transport to the roots and dwarfing of the tree. The effect is not permanent.

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Sugar sprays encourage fertilization by honey bees on fruit trees. Sprays of 20 to 25 % concentration should be applied twice daily, from about 75% full bloom to 20% petal fall. It is only necessary to spray one good size fruiting arm on every alternate tree.

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Alpha naphthalene acetic acid (ANA) at 10 ppm and 2, 4, 5, trichlorophenoxy propionic acid at 20 ppm. control fruit drop. 2, 4, 5,-T (2, 4, 5-trichlorophenoxy acetic acid) had no significant effect.

2, 4, 5-TP (2, 4, 5-trichlorophenoxy propionic acid) brightens colour, ripens fruits earlier.

Aqueous sprays of the following growth regulators for controlling pre-harvest drop, increasing size and hastening maturity had the following comparative effectiveness, when used in concetrations of 100 ppm. on Stewart apricots.

Control (unsprayed)	24.14% fruit drop
2, 4-D	3.08 %
2, 4, 5-TP	3.19 %
2, 4, 5-T	3.98 %
ANA	13.92 %

2, 4, 5-T is recommended for commercial use, as the other materials have adverse aftet effects.

Trace element deficiencies may be corrected through bark feeding.

Polythene or polythylene box liners prevent shrivelling and weight loss in fruit boxes.