



Spending the Savings

► THE GREAT majority of familiar spring flowers spring from the underground storage organs in which food-stuffs, usually in the form of starches and sugars, were accumulated during the preceding summer and fall. Dig up almost any of the abundant species—jack-in-the-pulpit, spring-beauty, bloodroot, trout-

lily, Solomon's-seal, May-apple, trillium, Dutchman's-breeches, wild iris, columbine—and you will find a bulb, or a fleshy rootstock, or a bundle of thickened roots, or some other form of vegetable savings account, which is now being spent on the beautiful and necessary business of blossoming.

It is a matter of practical necessity that this is so. The reproductive process, of which flowers are the symbol and the means, requires a considerable outlay of material and energy. Flowers do not produce this for themselves; it has to be supplied by the rest of the plant body. And annuals, plants that start anew each year from seed, require time to get their growth and to store up a surplus before they can turn to the serious and costly undertaking of producing flowers and setting seed. Hence the heyday of annual species comes in summer and early autumn.

Preparing for this year's spring flowers was really last summer's work—perhaps the work of more than one summer. The plant, starting from seed or through some form of asexual propagation, sends up a crop of flowerless leaves through one or

more seasons, slowly accumulating in its underground parts the surplus of food material that is left over after its daily wants have been supplied. Then, when enough has been piled up, it is expended freely and energetically—like a thrifty human couple cheerfully spending their savings in launching a family.

Some plant species end their life cycle with one offering of flowers and seeds—they blossom once, bear their fruit and then die. Much more common, however, are plants that go on growing new underground parts, which will continue vegetative propagation even while previously accumulated stores in the matured portions are being used up in the production of flower stalks. Thus we have the formation of offsets at the base of lily and hyacinth bulbs, and continued growth at the tips of the rhizomes of May-apple, iris and Solomon's-seal. The devices are many, though similar, and the end accomplished is the same—the survival of both individual and species.

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Road maintenance taxes on vehicles were collected 400 years ago in Scotland.

Pregnancy, Needed Weight-Gain, and Proteins

One of the tasks imposed upon the gravid organism is to produce new tissue to the extent of almost one-fifth of its own normal body weight.* Unless protein supply in the diet is adequate, quantitatively as well as biologically, the hazard for the maternal organism increases and the development of the fetus may be impaired. The proteins of meat are of the right kind not only to lay down these new tissues, but also to provide for the stepped-up functions during pregnancy, for which proteins are essential.

*“During pregnancy the average normal woman gains approximately 18-22 pounds, which represents the growth of the uterus, breasts and other organs as well as the fetus and placenta. In other words, a pregnant woman in nine months reproduces tissue almost equivalent to one-fifth of her own normal body weight. It must not be forgotten that the chief function of protein is to supply the tissue-building material of the body, that the need for this material is increased during pregnancy and that the protein deficiency in the diet of the nonpregnant woman may become dangerous when maternity intervenes. . . . It is reasonable to assume that protein foods satisfy appetite earlier than the others and make it content with fewer calories. In this respect we have found high protein diets of value for weight restriction during pregnancy.” (Arnell, R. E.; Guerriero, W. F.; Goldman, D. W.; Hucceby, E., and Lutz, A. M.: PROTEIN MALNUTRITION IN PREGNANCY, New Orleans M. & S. J. 95:114 [Sept.] 1942.)



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