

irradiation hemorrhage in man, this knowledge would afford a more intelligent basis for the use of blood and would channel the limited supply available in the directions in which it may be used most effectively.

The frequent administration of fresh blood transfusions without antibiotics in dogs failed to improve the survival rate or to ameliorate spontaneous bleeding after exposures to total body x-radiation (LD_{50} - LD_{100}). On the basis of these experiments a more cautious attitude toward the use of frequent blood transfusion alone as a therapeutic measure in the treatment of the *latent* symptoms of irradiation injury in man may be indicated. These data do not re-

late in any manner to the use of blood in the treatment of shock incident to the *early* blast effects of an atomic burst, or to blood needs in anoxic anemia, where the therapeutic importance of adequate blood and plasma transfusion is soundly established.

References

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Comments and Communications

Some Punkins!

DR. ZACKS' statistical note on "How Does the Ivy Grow?" in *SCIENCE* (114, 332 [1951]), with a later correction (114, 469 [1951]), is interesting, but either Harvard ivy is a laggard as regards its rate of growth, or else the fertility of Boston soil falls far short of that in the garden of a member of the University of Missouri faculty, as these records will show.

A single stray pie-pumpkin seed was found sprouting in a row of garden beets on May 17, 1951, and the plant was permitted to "root for itself" until killing frosts laid it low while still in the vigor of life on November 5, 1951. The plant received no added fertilizer and no cultivation or other care, except that some of the more ambitious runners were turned back into the garden from a traveled city alley at the edge of the garden. In all fairness, however, it should be said that there were no squash bugs in the garden to pester it.

In the 173 days, or 249,120 minutes, of its active life the plant produced a total over-all vine growth of 1986 ft, or 605,332.8 mm. This would mean a total average vine growth of 2.43 mm/min. However, this is a measure of total vine growth and not of the tip growth of any one runner. The longest single branch measured slightly over 75 ft, or 22,860 mm, which means that this vine made an average tip growth throughout the summer, rain or shine, of .092 mm/min. Observations showed that at the peak of growth it was greatly exceeding this record. In other words, this vine made an average daily growth of over 5 in., so one could actually see it grow.

But that is not all. While growing almost twice as fast as the ivy, this vine also produced 20 pumpkins weighing a total of 300 pounds, besides several small immature ones. In kitchen parlance this means that the vine produced one pumpkin pie every 7 hr. It overran every growing thing, including a grape arbor, fruit trees, and flowers, in 1600 square feet of garden space. Some of its leaves were 15 in. across. And yet

the whole story of this waif of a pumpkin seed has not been told, for during its remarkable vegetative growth and its production of the makings of over 500 pies, the seed actually reproduced itself twenty thousandfold, for the 20 mature pumpkins contained an average of 1000 seeds each. To my way of thinking, the Harvard ivy, with no serious accomplishments to its credit other than tip growth and perhaps a few seeds, really made a poor showing.

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The Alleged Disappearance of Hunger During Starvation

KEYS *et al.* (1) stated that the sensation of hunger disappears in a matter of days during total starvation, but that no diminution of hunger occurred during a type of semistarvation studied by them. Cannon (2, 3) seems to have been mainly responsible for the persistence of claims that hunger sensations cease after the first few days of starvation, although he made no study of hunger during prolonged starvation. Cannon only cited reports made by others, including hunger-strikers and individuals who tried the fasting cure (4). One of us (F. H.), after having fasted 8 days in 1912 and 26 days in 1913, also believed that the reference of hunger to the stomach disappeared in 5 or 6 days. In 1916, he thought that the senior author's study during 5 days of starvation (5, 6) was not sufficiently prolonged to reveal the true nature of hunger. Hence, a study of hunger was made by the senior author in which the junior author served as the subject during a 15-day fast in 1917 (7).

It was found that the periodic gastric contractions, which Cannon as well as the senior author attributed to hunger, persisted throughout the 15 days of fasting, and that the desire to eat or to resume eating was always keenest when the periodic gastric contractions occurred. A modification of the sensations was experi-