that the serum cholesterol in individuals with coronary artery disease reaches inordinately high levels in many (but not all) instances. The serum phospholipids, on the other hand, do not keep pace with this rise in serum cholesterol. Hence it is believed that one of the factors favoring the deposition of cholesterol in the intima is enhanced because of the lack of a colloid stabilizer which may be reflected by the proportion of phospholipids in the serum. Conversely, in the normal individual it may be suggested that the colloid stability of cholesterol is unchanged because the rise of serum phospholipids is proportional to the rise in serum cholesterol.


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## Inhibition of Anaphylaxis in Guinea Pigs by D-Catechin


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The use of antihistaminic agents has proved to be an effective adjunct in the treatment of various allergenic reactions by virtue of their antagonistic activity toward preformed histamine. Recently, Martin *et al.* (*4*) demonstrated *in vitro* the inhibitory effects of vitamin P compounds in histidine decarboxylase. This enzyme, present in animal tissues, is capable of forming histamine from histidine (*3*, *6*, *7*). Preliminary tests *in vivo* (*1*) also indicated that these compounds are active. Their activity might be directed toward inhibition of the formation of histamine. Inhibition of histamine formation in the body seems a rational approach to the treatment of allergies.

In this study, 14 guinea pigs were sensitized in the manner described by Raiman *et al.* (*5*). Half of the animals received 2 mg of D-catechin, an aglycone flavonoid, intraperitoneally daily for 19 days. The remaining animals were not treated and served as controls. At the end of the 19-day period each animal was shocked by an intracardial injection of 0.1–0.5 ml of fresh normal horse serum.

The animals receiving D-catechin exhibited no anaphylactic reactions. The control animals exhibited typical reactions followed by extreme dyspnea and finally death due to asphyxia. The complete reaction lasted approximately 5 min.

Four additional guinea pigs, which had received daily doses of D-catechin for 1 week, were injected intracardially with 0.1 mg of histamine diphosphate. These animals died several minutes later with typical shock symptoms.

The dead control animals and the animals from the histamine group were autopsied. No significant difference in gross pathology could be observed. The predominating characteristic in both groups of animals was the constriction of the bronchiolar muscles. Each animal showed varying degrees of pulmonary edema and hyperemia.

These studies show that D-catechin protects guinea pigs from anaphylactic reactions but not from histamine shock. It appears reasonable to believe that this protective activity might be attributed to an actual inhibition of histidine decarboxylase. This reaction would tend to prevent the formation of histamine, which is an important factor in the anaphylactic syndrome (*2*).


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## Regeneration of the Shoot Apex of *Lupinus albus* after Operations upon the Central Initials


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In attempting to transplant the central portion of the shoot apex, it was noted that the uninjured portions of the original meristem regenerated into one or two normal apices. This regeneration was similar to that described by Linsbauer (*2*) and Pilkington (*3*) after different operations. The heavy black line in Fig. 1 shows the position of the cuts made in the shoot apex. The sector (*S*) was either transplanted to another apex, replaced in the same or reversed orientation in the original apex, or excised. Usually the sector died when it was left in an apex (Figs. 2, 3, 4, 5), and its shrunken remains marked the site of the operation. When the sectors were re-

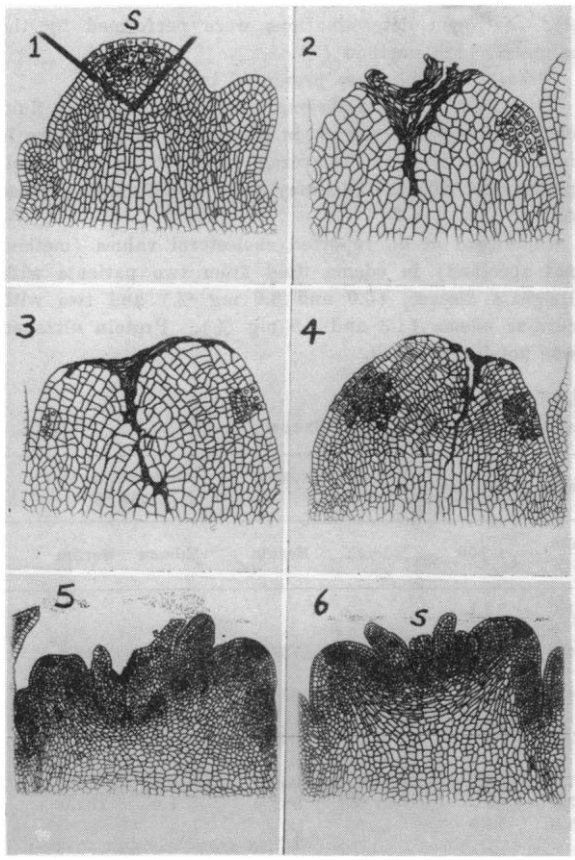


FIG. 1. Longitudinal section diagram of the shoot apex showing, with the heavy black lines, the position of the cuts made to take out the sector (*S*) containing the central initials (with outlines of nuclei). Magnification × 109.

FIG. 2. Diagram of a shoot apex two days after the operation. The sector had shrunken and died. New initials occur in the right regenerating apex. Magnification × 148.

FIG. 3. Shoot apex four days after the operation. The sector is further shrunken. New initials are seen in both right and left regenerating apices. Magnification × 130.

FIG. 4. Shoot apex six days after the operation. Large groups of initials occur in both regenerating apices. Magnification × 95.

FIG. 5. Regenerated apices 18 days after the operation. The apices had produced shoots 90° from each other, leaving behind the remains of the sector. Magnification × 43.

FIG. 6. Regenerated apices 18 days after the operation. The apices had produced shoots 90° from each other, leaving behind the sector (*S*), which had united with the subjacent tissues. Magnification × 55.

placed in the same orientation in the original apices, a very few of the sectors united with the subjacent tissues (*S* in Fig. 6). Only in this limited degree were transplants successful. In such successful grafts the sector was not retained as a part of the shoot apex, but was left behind by the growth of the regenerated apices. Irrespective of what was done with the sector, or whether it did or did not unite with the apex, the uninjured remains of the original meristem underwent regeneration by forming new initials in lateral positions (Figs. 2, 3, 4). It had previously been postulated (*1*) that the cells along the flank of this apex are equivalent anatomically to the initials. This mode of regeneration demonstrated


FIG. 7. Plant with regenerated shoots 61 days after the operation. The new shoots were approximately parallel to the original shoot and to each other. Magnification × ½.

that the cells along the flank of this shoot apex, although they produce foliar primordia in the original apex, could, under the circumstances of this experiment, become the central initials of a new shoot apex. The flank cells are therefore equivalent morphogenetically to the original central initials. The origin of the new group of initials appeared to entail periclinal divisions of the second tunica layer (Figs. 2, 3). Derivatives of the tunica were therefore contributed to the new corpus. The shoot apex, in its regeneration, appeared to function as a unit, and to determine how the individual cells would divide, and what they would become. The early growth of the regenerated apices occurred away from each other. The axes of the new shoots in Figs. 5 and 6 are approximately 90° from each other and 45° away from the axis of the original shoot. It is not known whether the angles of the new shoots were due to mutual repulsion of adjacent centers of growth, or merely due to the position of their origin on the sides of the original meristem (Figs. 2, 3, 4). Further studies are being made with the hope of obtaining evidence on this matter. After the regenerated shoots attained considerable length, they no longer grew at a sharp angle from each other, but were approximately parallel to each other and to the original shoot (Fig. 7).

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