two main colloids are unequally distributed in the two phases of the system. True *adsorption* must as Zsigmondy has pointed out[1] play an important part but the reactions imply that *absorption* also takes place. The arrangement of the denser continuous phase of the gel in the form of a fine sponge or of a close mesh of plates or fibers would offer conditions in which both adsorption and absorption might occur. The parallelism of hydration in biocolloids with hydration and growth in plants with regard to temperature implies identity of structural arrangement and similarity of action. The end points, maxima or totals in the swelling of the biocolloids given above probably represent the point at which dispersion assumes a high rate, and available information is not sufficient to identify this with the upper temperature limit of growth.

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The chemical basis of morphological polarity in regeneration

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When a piece is cut out of the stem of a plant (*Bryophyllum calycinum*) the most apical buds will grow out into shoots, while roots develop chiefly but not exclusively at the basal end. The writer suggests the following explanation of this phenomenon of polarity. In the normal stem the growing region at the apex as well as the leaves send out special inhibitory substances toward the base of the plant which prevent the growth of the more basally situated dormant buds capable of giving rise to shoots. When a piece is cut out from the stem these inhibitory substances continue to flow in the piece toward the base and the most apical node will be the first one sufficiently free from these inhibitory substances and hence the two dormant buds situated at this node will grow out first. As soon as they grow out they produce and also send out inhibitory substances toward the base, thereby preventing the more basally situated buds from growing out into shoots.

A brief outline of the experiments supporting this hypothesis has been published in *Science*.[2]

[1] Chemistry of Colloids, p. 59, 1917.

[2] Loeb, J., *Science*, 1917, xlvi, 547.