to the question of mammalian longevity. The retarding effects of D_2O on the growth of mice bearing tumor transplants were demonstrated by Barbour and Allen.[4] One fifth saturation with deuterium oxide retarded the growth of both tumors and hosts, the latter showing shorter survival periods than the H_2O controls. A number of other mice have for several months tolerated one fifth saturation with D_2O, without evidence for enhanced longevity.

More significant is the fact that while the obelia offers evidence for decreased catabolism in low forms of animal life, mammals respond to one fifth saturation of deuterium oxide by catabolic stimulation persisting for many days.[5] Such difference in mammals may be attributable to checks and balances acquired in their phylogenetic development, as are, for example, provided by the elaboration of hormones. Now, deuterium oxide, presumably by providing a slow-acting form of hydrogen, protects and "prolongs the life" of at least two of these unstable hormones, namely, epinephrine[6] and acetylcholine.[7] The first of these has been found responsible for the metabolic increases, up to +20 per cent., which tend to make the mice "live faster" rather than slower.

Therefore, although deuterium oxide retards growth and anabolism and in toxic concentrations even delays catabolism in all forms of life so far examined, it is not to be expected that mammals enjoying the luxury of partial saturation with this substance will exhibit enhanced longevity.

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HEPARIN AND BLOOD CLOTTING

THERE recently appeared an article in which Astrup[1] confirmed our observation[2] that normal plasma contains an unknown factor, which, in conjunction with heparin, blocks the transformation of prothrombin into thrombin. Both his work and ours showed that heparin alone has little or no effect in blocking this reaction—a finding which conforms to the earlier experiments of Mellanby[3] and Quick.[4] However, in mixtures containing both the plasma factor and heparin, our work and that of Astrup showed that marked inhibition of thrombin formation results.

In a recent note in this column, Ferguson[5] discussed these results, and indicated, erroneously, we believe, that Howell and Holt's[6] original work had brought out all these same facts. It is true that they did find that the *destruction* of thrombin by heparin requires a plasma factor ("pro-antithrombin"), but they believed that heparin interfered *directly* with the conversion of prothrombin into thrombin (antiprothrombic action of heparin). Our work and that of Astrup has brought out the new concept that a plasma factor is needed for this inhibitory action of heparin.

Although we have suggested that this new plasma factor and the pro-antithrombin of Howell may be identical chemically, as yet no data are available on this point and the question must be left for future work.

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MASTODON REMAINS FOUND IN WEST VIRGINIA

ON Monday, October 9, there was brought to the biological laboratories of Bethany College the proximal portion of a long bone, too large to be that of any local domesticated animal. This bone fragment had been uncovered and picked up by a Mr. Funk, the operator of a steam shovel engaged in stripping coal about two miles west of Bethany, W. Va., in Brooke County, on a tract of land known as the Pendleton Farm and owned by a Mr. Petzol, of Hollidays Cove, W. Va.

The undersigned went immediately to the stripping operation and there found a number of other fossilized bones, as well as a portion of a tooth. These materials were removed to the biological laboratories of Bethany College. Dr. Leroy Kaye, paleontologist of the Carnegie Museum, Pittsburgh, Pa., was called into consultation and it was agreed that these were parts of a skeleton of the American mastodon.

The skeleton remains were found in a deposit of blue clay about 18 feet below the surface. This layer of clay was 6′ 3″ in thickness. It was probably a Pleistocene deposit. This layer contained an abundance of Gasteropod and Pelecypod fossils, as well as numerous pieces of fossilized wood. Overlying this was another layer of yellow clay of a gravelly nature,

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