and plastochromanol C appeared to contain the group:

The content of plastochromanols in several leaves was determined.

These new chromanols were isolated in relatively high amounts from autumnal leaves, being present at concentrations comparable to the related plastoquinones. Whether these chromanols appear predominantly in the autumn or will be found throughout the summer remains to be seen. Hypothetical schemes for chromanols as metabolic intermediates have been devised (see Lederer & Vilkas, 1966), but none have proved fully acceptable. It appears that a sequence of reactions can befall plastoquinone, probably commencing with epoxidation and isomerization and followed by cyclization or esterification or both, and indeed further epoxidation and isomerization may occur.

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The Role of Malonyl-Coenzyme A in Isoprenoid Biosynthesis

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The route for the formation of the acetoacetyl moiety required for the synthesis of β -hydroxy- β -methylglutaryl-CoA (HMG-CoA) is still in doubt. Whereas Brodie, Wasson & Porter (1962, 1963, 1964) reported the formation of HMG-CoA and mevalonic acid by a pigeon liver fatty acid synthetase preparation, and Ishikara, Koyama & Takeda (1965) produced evidence for the formation of sterols from malonyl-CoA by dispersed rat liver cells, Fimognari & Rodwell (1964) and Fimognari (1965) concluded that in rat liver the proportion of mevalonic acid formed from malonyl-CoA was relatively small.

Further evidence concerning the role of malonyl-CoA in isoprenoid biosynthesis was sought by measuring the relative incorporation of [1,3- 14 C]- and [2- 14 C]-malonyl-CoA into squalene, crystallized as the hexahydrochloride. The 12000g supernatant from a cell-free extract of baker's yeast incorporated [2- 14 C]acetate and [1- 14 C]acetate in the ratio 3.0:2.0, whereas the ratio from [2- 14 C]- and [1,3- 14 C₂]-malonyl-CoA, in the presence of unlabelled acetyl-CoA, was 9.2:0.1. Analogous experiments, with a rat liver preparation (Knauss, Porter & Wasson, 1959), gave similar relative incorporation of [2- 14 C]- and [1- 14 C]-acetate but showed that [2- 14 C]- and [1,3- 14 C₂]-malonyl-CoA were incorporated in the ratio 1.31:1.0. These results indicate utilization on malonyl-CoA for squalene synthesis, but interpretation in terms of utilization of malonyl-CoA itself or prior decarboxylation to acetyl-CoA is difficult.

The latex of *Hevea brasiliensis* incorporated [2- 14 C]malonyl-CoA into fatty acids, but neither the non-saponifiable lipid nor the rubber was labelled. When, however, the latex was fortified by the addition of NADPH (0.3–0.5 μ mole/ml.), radioactive rubber was formed and, in contrast with the unfortified system, labelled mevalonic acid was detected when an unlabelled trapping pool was added.

We were unable to detect the formation of labelled mevalonic acid or labelled HMG from [2- 14 C]malonyl-CoA by a highly purified (Hsu, Wasson & Porter, 1965) pigeon liver fatty acid synthetase. The enzyme incorporated the substrate satisfactorily into palmitate, and formed a labelled material chromatographing at the same R_F as 3,5-dioxohexanoic acid.

Experiments are in progress to study the incorporation of malonyl-CoA into isoprenoids in conditions where the formation of malonyl-CoA itself is inhibited.

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