ments of an extensive research of the peracid oxidation of unsaturated ketones in these laboratories have yielded similar results; for example, an α -phenyl- α,β -unsaturated ketone reacted with peracetic acid giving a mixture consisting mainly of compounds II and III. It is hoped to report on the outcome of these investigations in due course.

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Solubility of Melanins

IN further attempts to find a solvent for melanin which would be of use in histological work, the following substances have been found to dissolve, in the cold, the pigments extracted from the ink sac of *Sepia officinalis* and melanoma tissue, and those prepared from adrenaline and 3,4-dihydroxyphenylalanine (dopa): ethylene glycol monomethyl ether, ethylene glycol monoethyl ether, and ethylene glycol

monobutyl ether. The monoethyl ether had the greatest solvent power. These melanins have also been found to be soluble, in the cold, in mixtures of ethyl lactate and benzyl alcohol, the best proportions being 6 of the former to 4 of the latter (by volume). In all these solvents the solubilities of sepia, melanoma and adrenaline melanins were, so far as could be determined from what must be regarded as impure specimens, of the same order, but the melanin from 3,4-dihydroxyphenylalanine was much less soluble than the others. However, these solvents failed to dissolve the melanin in sections of melanoma tissue, even with the aid of heat. The method used for extracting the sepia and melanoma melanins was: (1) solution in 10 per cent aqueous sodium hydroxide, (2) filtration and precipitation of the melanin by dilute hydrochloric acid, (3) removal of extraneous fatty substances by extraction with ethyl alcohol, chloroform and benzene, (4) repetition of (1) and (2). This extraction procedure was also applied to melanins from 3,4-dihydroxyphenylalanine and adrenaline, but in spite of this uniformity of treatment the former product was still the least soluble of the four types of pigment.

Millott and Jacobson¹ have recently directed attention to the variations in the solubility of melanin as described by different workers in this field. In the case of sepia and melanoma melanins, as compared with that from 3,4-dihydroxyphenylalanine, these differences in solubility may well be due to combination of the pigment with other intracellular substances, probably proteins. (Preliminary experiments have suggested that sepia melanin has a molecule approximately twice the size of that from 3,4-dihydroxyphenylalanine².) This does not explain the difference in solubility between 3,4-dihydroxyphenylalanine and adrenaline melanins; but this may be due to the persistence of the methyl group, attached to the indole nitrogen, in the adrenaline product³.

Two conclusions appeared to be justified: (1) removal of melanin from the ink sac of *Sepia officinalis* and melanoma tissue by the method described above altered its chemical composition; and (2) these melanins, after taking into consideration this effect of extraction, are not identical with that derived from 3,4-dihydroxyphenylalanine.

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