For ^{14}C compounds, oxidation is the normal method of choice, as our experiments with the analysis of ^{14}C-fatty acid methyl esters on diethylene glycol succinate columns, and of basic drugs on methyl phenyl silicone (OV17) columns, have shown that a slight loss of sensitivity occurs when hydrogenative cracking is used. This may be explained by the decreased residence time of the radioactive sample in the proportional counter due to an overall increase in gas flow rate which is necessary for the hydrogenative procedure.

The use of this equipment in the analysis of labelled fatty acid esters, drugs and other compounds of pharmacological interest will be demonstrated.

The study of antimalarial compounds *in vitro*

W. H. G. RICHARDS and S. G. WILLIAMS (introduced by P. J. GOODFORD), *Department of Protozoology, and Biophysics and Biochemistry Laboratory, Wellcome Research Laboratories, Beckenham, Kent*

Improvements in the culture medium (Cohen, Butcher & Crandell, 1969) have made it possible to culture the intra-erythrocytic forms of malarial parasites through a complete asexual reproductive cycle. The demonstration will show how the effect of drugs on this life cycle can be studied in such a defined medium *in vitro*.

Infected erythrocytes are incubated in the medium containing ^{3}H-labelled leucine with and without drug being present. At intervals small portions of the culture are removed and the radioactivity in the protein fraction which is insoluble in trichloracetic acid is determined by scintillation counting (Cohen *et al.*, 1969; Byfield & Scherbaum, 1966). In this manner the effect of the drug on the plasmodial protein metabolism may be quantitated. Antimitotic effects of the drugs are determined histologically from smears of the culture cells taken at intervals during the incubation.

To gauge the effect of the drug on the metabolism of the erythrocytes, which are host cells to the parasite, the ATP and K^+ content of these cells is determined. The latter assay is performed by atomic absorption spectroscopy and the former by the fire-fly luciferase method. Optimal use of the automatic scintillation counter for this assay is demonstrated (Stanley & Williams, 1969).

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Methods for the study of nucleotide, nucleic acid and protein metabolism

I. C. CALDWELL† (introduced by P. J. GOODFORD), *McEachern Laboratory, University of Alberta, Edmonton, Alberta, Canada*

Many drugs, particularly those acting on proliferative tissues, are known to have effects upon the formation and metabolism of nucleotides, nucleic acids and proteins. A number of newly developed methods applicable to studies of the effects of drugs upon these metabolic parameters will be demonstrated.