product arising from stercobilin appears to be a water-soluble acid which forms an optically active, 2,4-dinitrophenylhydrazone. It is possible that stercobilin undergoes fission at the *b*-12 or *b*-13 bond with formation of a product of the type VI. A study of the nature of this product is being undertaken.

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A Ribonucleoprotein from Amphibian Gastrulæ

DISAGGREGATION of amphibian embryos by agents which chelate calcium is succeeded by re-aggregation if the cells are returned to a medium containing calcium[1]. It is customary to consider that the removal of calcium from the environment of the cells is responsible for the loss of adhesion displayed in disaggregation. An attempt has been made to find out whether any organic material is removed from the embryos during disaggregation. Such organic material might lie on the cell surfaces or between the cells and assist in their adhesion, or it might be removed from within the cells during disaggregation. Batches of 250–260 late gastrulæ of *Xenopus laevis* were disaggregated in 0·001 *M* ethylene diamine tetraacetate at *p*H 8·03 in *tris*-hydrochloric acid buffer (0·001 *M* in *tris*) made up in calcium-free Holtfreter solution. The embryos were gently agitated on a rocker for 40 min. at 19–21° C., and at the end of this period the cells of the completely disaggregated embryos were allowed to settle. No evidence of cytolysis of the cells could be found. The supernatant was removed and centrifuged at 300–400 *g* for 10 min. A small number of intact cells, and a few yolk platelets probably of extracellular origin, formed the residue. The clear supernatant from this centrifugation was examined spectrophotometrically, and the absorption curve suggested the presence of nucleic acids. The preparation was frozen-dried.

Estimations of the total nitrogen by the Lubochinsky test, phosphorus as phosphate after digestion in concentrated sulphuric acid, ribose by the orcinol reaction, and α-amino nitrogen by the ninhydrin method were made. Deoxyribose and hexose sugars were absent. After hydrolysis in perchloric acid the material was run on a chromatogram using *iso*propanol/hydrochloric acid/water (170 : 41 : to 250 vol.) as the solvent. Adenine, guanine, cytosine and uracil were recognized from the R_F values and from the absorption curves of the eluates of the spots. The extinction values of the various bases suggest that the nucleic acid forms 25 per cent of the dry weight of the material. This value is in agreement with the results of the other tests, and with the 260/280 mμ absorption ratio for the untreated material, which all give 75 per cent of protein in the preparation. A sample of the material was hydrolysed in 6 *N* hydrochloric acid, and a chromatogram of this hydrolysate was run in phenol saturated with water. Qualitatively, arginine, histidine and tyrosine have been recognized from R_F values and from specific reactions; exact identifications of the remaining amino-acids have not yet been done.

Embryos of this stage disaggregate in calcium-free media at or above *p*H 9·8, forming a clear jelly between the cells in the process, and show a certain amount of cytolysis. On returning the cells to *p*H 6·8 in the absence of calcium, the jelly slowly dissolves; if the return to *p*H 6·8 is done in the presence of calcium, the jelly remains. At this lower *p*H the jelly is dissolved by trypsin and by ribonuclease. It is possible that the jelly is at least in part identical with the ribonucleic acid and protein described above, though there is undoubtedly some degree of contamination with cytolytic products. Since ethylene diamine tetraacetate removes the ribonucleic acid and protein components from the embryos without visible damage to the cells, the suggestion is that they are derived from the surface of the cells or from between them. This is supported by histochemical evidence for the presence of ribonucleoproteins on or between the cells from methyl-green pyronin and toluidine blue staining (cf. ref. 2). The constant proportion that existed between the ribonucleic acid and protein components from batch to batch favours the view that they exist as a ribonucleoprotein in the embryo. Until the matter has been further investigated, it is probably most convenient to refer to the material as a ribonucleoprotein. It may be connected in function with the adhesion of cells to one another and with the binding of calcium on the cell surface, which is important in adhesion[3]. This function of ribonucleic acid on the cell surface has been suggested for *Elodea*[4]. It is of interest that if the disaggregated cells are treated with trypsin or ribonuclease they fail to re-aggregate, which suggests that there is a ribonucleoprotein on the cell surface connected with adhesion. It might also be concerned with induction and be related to the substance described by Niu[5].

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