The RNA of tobacco leaves is characterized by a low uracil and a high guanine content. The purine and pyrimidine composition significantly differs from that of tobacco mosaic virus RNA. The RNA in the present investigation may, however, come from several parts of the cell and represent an average of types each with a qualitatively different composition.

The tobacco mosaic virus RNA used in this investigation was a gift from Dr. C. A. KNIGHT.

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Studies on the intestinal absorption of glucose

For a considerable time it was believed that glucose is absorbed from the intestine without degradation, probably by a mechanism involving phosphorylation and subsequent dephosphorylation[1,2].

However, recent studies of glucose absorption in the rat *in vivo* and *in vitro* claimed to show that glucose is converted to an unidentified compound which was transported in the portal blood to the liver[3]. *In vitro* studies by WILSON[4] demonstrated that, although some glucose was transported across the intestinal wall of the rat, considerable degradation to lactate also took place. Experiments using guinea pig intestines have shown that glucose may be transported across the intestine *in vitro*[5,6].

An attempt to demonstrate whether glucose is degraded when absorbed by the intestine has been made by feeding glucose-1-^{14}C (5 ml of a 50% glucose solution containing 10 μc ^{14}C) to rabbits by stomach tube. Blood samples were subsequently removed from the ear vein and deproteinised by the method of SOMOGYI[7]. 20 mg of carrier glucose were added and glucosazone prepared by the method of GARARD AND SHERMAN[8]. The osazones were purified, their radioactivity measured, and then were degraded to the bis-phenylhydrazone of the mesoxalic aldehyde by the method of TOPPER AND HASTINGS[9]. The specific activity of the mesoxalic aldehyde, containing carbon atoms 1, 2 and 3 from the glucose, was compared with that of the osazone as shown in Table I which gives the results of a typical experiment. In this degradation, formaldehyde arises from carbon atom 6 of the glucose. This was isolated as the dimedone derivative and no radioactivity was found in this substance. (The standard deviation in counting this compound was $\pm$ 10%.)

TABLE I

Time blood sample removed after glucose ingestion (min)	*Specific activity of osazone (cts/min/μmole)*	*Specific activity of mesoxalic aldehyde bis-phenylhydrazone (cts/min/μmole)*	*Maximum possible randomisation (%)*
15	5.5 $\pm$ 0.22*	5.8 $\pm$ 0.43	0 $\pm$ 8
30	9.5 $\pm$ 0.25	11.9 $\pm$ 0.30	0 $\pm$ 4
45	14.9 $\pm$ 0.32	13.7 $\pm$ 0.47	8 $\pm$ 5
60	16.8 $\pm$ 0.44	18.1 $\pm$ 0.40	0 $\pm$ 6
90	9.6 $\pm$ 0.25	9.2 $\pm$ 0.26	4 $\pm$ 4

* Standard deviation.

In vitro experiments using sacs of rat, guinea pig and rabbit intestine filled with glucose-1-^{14}C and incubated in Krebs-Ringer phosphate at 37° C showed that under the condition of these experiments only a small fraction, usually less than 1/5, of the glucose disappearing from the lumen could be detected in the surrounding fluid. Practically all the radioactivity appearing in the outside fluid after periods of incubation from 30–60 min could be accounted for as glucose. Randomisation of ^{14}C determined by degradation as previously described, was small and always less than 20%.

It is suggested that these experiments and most of those of other workers may be explained on the assumption that the major portion of glucose is normally absorbed *in vivo* without degradation and that the remainder is metabolised to provide energy for the absorption. The conditions of *in vitro* studies of intestine may encourage considerable degradation without concomitant transport.

These findings are in broad agreement with recent reports[10,11], which were published while these experiments were in progress.

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Nucleic acid content of the egg of the domestic fowl

Early work on nucleic acids in unincubated eggs has been discussed by BRACHET[1] and recent literature on deoxyribonucleic acid (DNA) in eggs has been reviewed by HOTCHKISS[2]. Recently DNA has been measured in the whole hen's egg[3] and FRAENKEL-CONRAT *et al.*[4] isolated avidin, a protein of hen's egg white and found that it contained DNA. Further quantitative evidence for the presence of both ribonucleic acid (RNA) and DNA in egg white and yolk using an isotope dilution technique is reported here.

Unincubated egg yolk and white (from Rhode Island Red hens) from 6–10 eggs were separately homogenized in water with a Waring blendor. Free nucleotides were removed from these homogenates by precipitation of protein with perchloric acid (0.2 *M* at 0° C), and after removal of lipid with ethanol and ether, nucleic acids were extracted with 1.0 *M* perchloric acid at 70° C for 1 hour. The method of KIRBY[5,6] for obtaining nucleic acid extracts was also used: sodium *p*-aminosalicylate (6% w/v) was dissolved in a homogenate of egg white or yolk and the mixture then stirred with an equal volume of 90% (w/v) aqueous phenol solution for 1 hour. After centrifugation, the upper layer was removed and dialysed against distilled water for 2 days at 0° C (after centrifugation of yolk homogenates the upper aqueous and lipid layers were removed and the lipid extracted with ether before dialysis).

RNA in these extracts was measured by an isotope dilution method for uracil[7], and DNA by the same method for thymine[8]. RNA was also determined by the orcinol method[9] after removal of free hexoses[10], and DNA by reaction of indole with the deoxyribose component[11], with a correction for absorption at 520 mμ[12]; neither of these colorimetric methods produced reliable results in extracts of egg yolk or white. Previously reported[12] amounts of DNA in egg yolk and white based on the latter colour reaction are probably erroneous owing to colour contamination.

Aliquots of perchloric acid extracts were concentrated under reduced pressure to 70% (w/v) perchloric acid. Aliquots of nucleic acid extracts obtained by the phenol method were evaporated to dryness and suspended in 70% (w/v) perchloric acid. Pyrimidines were liberated from the nucleic acids by digestion with 70% (w/v) perchloric acid for 1 hour at 100° C, when either