Group of rats	No. in group	Mean body-weight (gm.)	Mean difference between right- and left-hind limbs		Mean excess output of N in urine during post-fracture period (mgm.)
			Weight (gm.)	N (mgm.)	
I	6	346	0·68 (= 21·3 mgm. N*)	60·3	205·7
II	5	166	0·16 (= 5·0 mgm. N*)	11·2	128·4

* Calculated from 1 gm. rat muscle = 31·3 mgm. N (Cuthbertson *et al.*[1]).

trated sulphuric acid, and nitrogen determinations were made on aliquots. As indicated in the accompanying table, the mean differences in weight between the injured and uninjured limbs were smaller than the mean difference found by Cuthbertson *et al.*[1]; but differences in the nitrogen content of the limbs found by actual analysis were greater than nitrogen losses calculated on the basis of differences in weight. The nitrogen lost from the injured limb did not, however, account for more than a small proportion of the extra output of nitrogen in the urine after the injury. These observations accordingly confirm the view put forward by Cuthbertson[3] that the greater part of the nitrogen lost from the body after an injury comes from sources other than the injured limb.

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[2] Munro, H. N., and Chalmers, M. I., *Brit. J. Exp. Path.*, **26**, 396 (1945).
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Effect of Colchicine Treatment on the Alkaloidal Content of *Datura metel*

As a result of the work of Rowson[1], who found that the induced polyploids of various Solanaceous plants possessed higher alkaloidal contents than the normal varieties, we have investigated during the past two years the effect of colchicine treatment on the alkaloidal content of *Datura metel*, a commercial source of hyoscine.

A batch of seeds of *Datura metel* was well mixed and divided into two equal portions, one of which was treated with 0·4 per cent aqueous colchicine solution, as described by Rowson[1]. During March 1946 the seeds were sown in boxes and the plants reared under glass until about six inches high, when they were planted in the open on the materia medica farm at Dartford. The treated and the untreated plants were placed in separate plots but, so far as was practicable, under identical growing conditions. At the beginning of November 1946, the plants were harvested and a representative sample of each type assayed. The experiment was repeated in 1947 and the analytical results for the whole investigation are summarized below.

	1946		1947	
	Untreated	Colchicine-treated	Untreated	Colchicine-treated
Total alkaloidal content (%) expressed as hyoscyamine, calculated with respect to the plant in 60-mesh powder dried at 100° C.	0·422	0·419	0·401	0·438

These figures do not seem to us to support the view that colchicine treatment of the seeds results in a significant increase in the alkaloidal content of the plants; but in so far as we were unable to obtain any evidence of polyploidy by microscopical examination of our treated plants, it appears that in our experiments we were unsuccessful in producing polyploid species of *Datura metel*. We think that our results should be recorded, however, for the benefit of other workers interested in the practical applications of polyploidy.

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Structure of Yeast Ribonucleic Acid

During recent years, facts have accumulated about the electrometric titration of samples of yeast ribonucleic acid isolated by various methods. All the titration curves published[1-6] show on analysis the presence of a group titrating in the range *p*H 5·0–8·0; further, the pentose nucleic acid of the larvæ of *Calliphora erythrocephala* exhibits a similar dissociation[7]. The amount of this group present varies slightly with the samples used by different observers, but is generally of the order of 0·7 equiv. per statistical tetranucleotide in the polynucleotide, and it has been shown by Fletcher, Gulland and Jordan[3] that this value approaches close to 1·0 equiv. per four atoms of phosphorus on correction for the phosphorus-deficiency commonly encountered in this nucleic acid. There appears to us to be no reason to suppose that the simplest interpretation of this observation is not the correct one, namely, that the group is a secondary phosphoric acid group; this conclusion was reached by Fletcher, Gulland and Jordan[3] and by Chantrenne[4]. The suggestion put forward by Allen and Eiler[2] that this group is a very weak primary phosphoric acid group could only be accounted for on the basis of a much greater disturbance of the interrelationships of the groups in the polynucleotide than has so far been contemplated.

Any proposed structure for yeast ribonucleic acid must take into account the evidence derived from titration, which demands the presence of three primary and one secondary phosphoric acid groups, three amino-groups and two purine-pyrimidine 'hydroxyl' groups for every four (corrected) atoms of phosphorus in the polynucleotide. The simplest formulæ on this basis are those proposed by Fletcher, Gulland and Jordan[3], which are based also on the assumption that the phospho-ester linkage is the main internucleotide bond. At least one other formula which involves pyrophosphate groups and ether linkages satisfies the titration data, but is not acceptable on stereochemical, and perhaps chemical, grounds.

The experimental results of Zittle[5] on the enzymatic degradation of yeast ribonucleic acid, which are considered by him to invalidate the formulæ of Fletcher, Gulland and Jordan[3], cannot at the moment be explained, particularly in view of the facts that, on our analysis, the electrometric titration curve of his nucleic acid initially showed 0·7 equiv. of a secondary phosphoric acid group per tetranucleotide, and that enzymic degradation liberated 3·45 addi-