Hypoglycaemic Agent from Onions

SIR,—Many indigenous plants of India have been claimed to contain anti-diabetic principles, and Mukerji (1957) listed those claimed to have anti-diabetic properties after oral administration.

Allium cepa, the common onion, was investigated by Collip (1923), Janot and Laurin (1930) and Laurin (1931) and reported to contain a hypoglycaemic agent, a claim confirmed by Laland and Havrivold (1933) and Kreitmar (1936). A detailed study of various onion extracts was therefore undertaken in an attempt to isolate an orally effective hypoglycaemic principle from this important vegetable.

Onion bulbs were cut into pieces, thoroughly dried and completely extracted with different solvents. These extracts were dried and fed to groups of fasting normal male rabbits weighing 2 kg. and having a fasting 18 hr. blood-sugar level of 100–120 mg./100 ml. Only light petroleum extracts of the dried powder were found to have hypoglycaemic action which was compared with that produced by a standard dose of tolbutamide. The potency of these extracts was

TABLE I

BIOLOGICAL ASSAY OF ORALLY EFFECTIVE HYPOGLYCAEMIC FRACTIONS FROM *Allium cepa* COMPARED WITH TOLBUTAMIDE

Substance administered	Dose	Blood sugar response mg./100 ml.		Mean reduction per cent	Hypoglycaemic potency as per cent of tolbutamide
		Initial mean values for six rabbits	4 hr. pool. Mean value for six rabbits		
Tolbutamide	0·5 g.	100	74·98	25·0 ± 2·1	—
Light petroleum 60°–80° extract.	0·5 g.	117·2	98·99	15·5 ± 1·2	62·1
Ethyl ether 34°–36° extract of dried residue from above.	0·5 g.	115	82·97	19·2 ± 1·6	76·6

expressed as percentages of the standard substance, tolbutamide, according to the procedure laid down by Marks (1926) for the biological assay of insulin. Blood sugar was determined by the micro method of Folin and Malmros (1929).

The results, Table I, prove *Allium cepa* to contain light-petroleum-soluble material with a hypoglycaemic action. Further, ethyl ether extracts most of the hypoglycaemic fraction from a powder prepared from the petroleum extract.

Further work on the separation and purification of orally effective hypoglycemic compounds from these extracts is in progress.

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