POLYSACCHARIDES FROM THE SEED MUCILAGE OF *OCIMUM BASILICUM*, LINN.

THE capsular mucilage of the seeds, isolated as previously described[1,2], on purification by repeated alcoholic precipitation, gave an ash-grey coloured product, having the composition shown in Table I. The mucilage, which

TABLE I

Composition (%) of the O. basilicum, Linn. seed mucilage

Pentoses	..	9·22	OMe	1·25
Hexoses	..	70·30	OAc	5·08
Uronic acids	..	7·32	CMe	0·35
Lipids, free	..	25·4	N	Nil
bound	..	10·3	Ash	2·95

was partially soluble (42%) in alkalies, gave a thick viscous opalescent solution in water and highly gelatinized solutions in dimethyl sulfoxide and formamide. Acetylation and propionylation in formamide[3] gave fully acylated products which were only partly soluble in chloroform. Complete hydrolysis of the mucilage and identification of the sugars by the methods, reported already (*loc. cit.*), confirmed the presence of D-galacturonic acid (6·1%), D-mannuronic acid (3·3%), D-glucose (25·0%), D-galactose (24·4%), D-mannose (10·0%), L-arabinose (12·4%), D-xylose (7·5%) and L-rhamnose (7·0%).

Graded hydrolysis of the mucilage with 0·01 N sulphuric acid at room temperature for 30 mts. released a part of glucose and arabinose, probably present in furanoside forms, with trace xylose. Subsequent hydrolysis of the unhydrolysed residue with 0·01 N, 0·05 N, and 0·1 N acid at 100° for 15 mts., 18 hr. and 20 hr., respectively released galacturonic and mannuronic acids along with galactose, arabinose and xylose, in varying proportions. The release of glucose and mannose from the insoluble residue (43%), required stronger conditions, *viz.*, 1 N acid (100°, 20 hr.) followed by complete hydrolysis, and had glucose and mannose in the ratio 10 : 2. Further, periodate consumption[4], both by the mucilage and its delipified product (*loc. cit.*), was negligible, suggesting either the lack of vicinyl hydroxyls or their inaccessibility to oxidation.

The mucilage was fractionated by three different methods :

(*a*) 0·05 N hydrochloric acid fractionation gave acid-soluble (12·4%) and insoluble (86%) fractions. The soluble fraction was rich in uronic acids (21·6%) and pentosans while the insoluble fraction was rich in hexosans. This insoluble fraction on further fractionation with 0·5 N sodium hydroxide gave soluble (18·1%) and insoluble (66·5%) fractions, both containing glucose, galactose and arabinose in the ratio 8 : 4 : 1 and 12 : 4 : 1, respectively.

(*b*) Barium hydroxide fractionation furnished a soluble fraction, as a white granular powder (15%), similar in sugar composition to that of acid-soluble fraction, except for its mannose content. The barium hydroxide insoluble fraction (85%) was comparable to that of acid-insoluble, both in its appearance and sugar composition.

(*c*) Cetavlon fractionation[5] of the alkali-soluble mucilage gave two fractions, soluble (11·4%) and cetavlon precipitable (12·5%). The latter was similar to the soluble fractions obtained in (*a*) and (*b*).

Thus the mucilage is heterogeneous, probably highly branched, with bound and free lipids, and composed of cetavlon precipitable, uronic acid-pentosan-rich fraction, along with two other hexosan-rich fractions.

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MAGNETIC SUSCEPTIBILITY AND INFRARED SPECTRA OF SOME OXALATE COMPLEXES OF NICKEL (II)

COMPLEXES of ammonia, pyridine, isoquinoline, ethylenediamine and *o*-phenanthroline were prepared with nickel(II) oxalate and their structures have been resolved on the basis of analytical, infrared and magnetic susceptibility measurements.

TABLE I

Analysis, infrared and magnetic measurements

Compound	% of metal		% of oxalate		Infrared spectral measurements				μ_{eff} (B.M.)
					N–H stretching frequency (3,400)	C–H ring deformation (990–600)	O–C–O		
	Found	Calc.	Found	Calc.			Sym.	Asym.	
$NiC_2O_4.2H_2O$ ..	31·09	32·13	47·10	48·16	..	..	1335 vs	1640 s	3·2
NiC_2O_4 (pyridine)$_2$ ..	18·19	19·27	29·09	28·88	..	800 w	1320 ms	1760 m	3·2
NiC_2O_4 (isoquinoline)$_2$ ..	14·14	14·54	21·67	21·74	..	861 m	1315 w	1765 s	4·0
NiC_2O_4 (*o*-phenanthroline)	..	..	24·09	24·27	..	870 s	1330 m	1760 vs	2·7
NiC_2O_4 (ammonia)$_4$ ..	28·19	26·78	41·31	41·97	3305 s	802 m	1255 w	1760 vs	3·4
NiC_2O_4 (ethylenediamine)$_3$	17·40	17·96	26·98	26·95	3290 s	978 m	1250 m	1762 vs	3·1

Nickel complexes with nitrogen donor ligands have been extensively studied[1-4] but very little information is available on their structures. It was thus proposed to determine the structures of some of the complexes of nickel (II) oxalate with amines.

Complexes were prepared by suspending nickel (II) oxalate in chloroform and adding a little more than the calculated quantity of amine. The mixture was refluxed for seven hours. The resulting compound was filtered, washed with chloroform till free from the ligand, dried and analysed. However the ammonia complex was prepared by dissolving nickel (II) oxalate in conc. ammonia and precipitating the complex by adding the acetone.

Infrared spectral measurements were performed on a Perkin Elmer Infrared Spectrophotometer model 337 and magnetic susceptibilities of the complexes were determined by Guoy method at room temperature.

All the complexes were found to be paramagnetic with the magnetic moment all lying within the range 2·7–3·4 B.M. as expected for the octahedral and tetrahedral complexes of nickel (II) except for isoquinoline complex which shows a very high magnetic moment (4·0 B.M.) as reported[5].

The infrared spectra prove the co-ordination of amines as the following major changes are observed in the spectra of these compounds which are analogous to those reported earlier[6-8]

(1) the shift of C–H stretching (ring hydrogen) to higher frequency.

(2) shift of electron density towards the metal for strengthening co-ordinate structure.

(3) the antisymmetric O–C–O band shifts to higher (1700 cm^{-1}) value and symmetric shift to lower value (1400 cm^{-1}).

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SUBSTITUTED INDOLE HYDRAZINES AS POSSIBLE ANTICONVULSANTS

THE significance of 5-hydroxytryptamine (5-HT) and other tryptamines in the functioning of central nervous system has in recent years aroused interest in search of indole derivatives as potential psychotropic agents. Furthermore, clinical efficacy of 3-(2-aminobutyl) indole for the treatment of some types of depression[1] and the ability of some substituted indole hydrazines to inhibit monoamine oxidase[2] led to the synthesis of 1-(substituted indole)-2-(substituted benzylidene) hydrazines as possible anticonvulsants.

EXPERIMENTAL

2-Methyl indole-3-acetylhydrazine.—Phenyl hydrazine hydrochloride, cyclized to 2-methyl indole-3-acetate[3], was subsequently transformed into 2-methyl indole-3-acylhydrazide[2].

1-(2-Methyl-3-acetyl indole)-2-(substituted benzylidene) hydrazines (Table I).—An ethanolic solution of 2-methyl indole-3-acetylhydrazine (0·01 mole) and the appropriate