TABLE I

in vitro comparison of the effect of caffeine (6·5 mmol/l) on testicular hyaluronidase activity

Species	Origin	% inhibiton (↓) or activation (↑) (mean ± S.D.)
Rat	testis	21·87±1·55 ↑
Goat	testis	51·65±0·84 ↑
Ovine	testis	235·76±0·02 ↑
Human	acrosome	14·38±0·66 ↓

Specific activity = μ moles of N-acetyl glucosamine liberated/mg. protein/minute.

In contrast to the above report the present study indicates that human acrosomal hyaluronidase appears to be different from rat, goat and ovine testicular enzyme with respect to its inhibition by caffeine.

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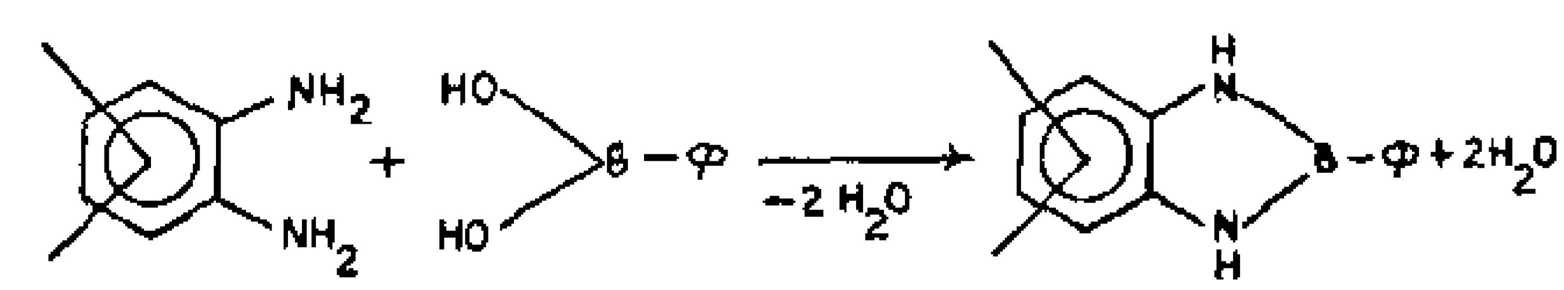
SYNTHESIS OF SOME NEW BENZODIAZABOROLE DERIVATIVES

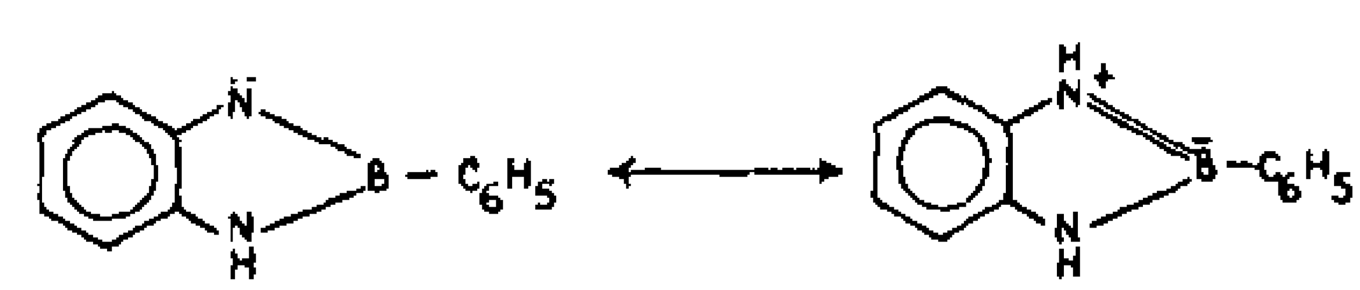
BENZODIAZABOROLE, pyrimidine and a few purine type boron analogues where —C—H group in heterocyclic ring is replaced by boron were prepared and screened for treatment of cancer[1,2] with certain success.

Liao *et al.*,[3] have prepared and tested heterocyclic boronic acids for the same purpose. The application of boron heterocyclics as stabilizers, antimetabolite, disinfectants and chemosterilants have also been recorded.

In view of this, a number of benzodiazaboroles have been prepared. Their structures have been confirmed by elemental analyses and recorded I.R. frequencies. Heterocyclic boron compounds reported herein have been prepared by conventional methods, *i.e.*, azeotropic distillation of the reactants to remove the water formed in the reaction.



Their physical properties have been recorded in Table I. These compounds are iso-electronic with indole and show only a small absorption due to a dipolar B–N, B–O or B–S bonds. Non ionic form is the predominant of the two resonating structures.



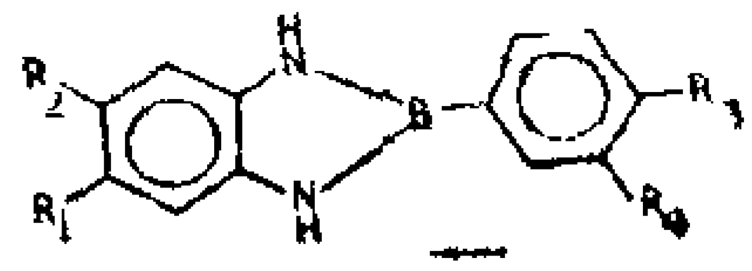
Preparation of Borimidazolines :

Equimolar amounts of the aryl boronic acid (0·01 mol) and *o* phenylenediamine (0·01 mol) were taken in xylene and heated under reflux for 4–5 hours. The water was removed azeotropically and the solvent xylene was distilled off at reduced pressure. The products were crystallized from carbon tetrachloride or benzene.

The infrared spectra of these borimidazoline compounds show the presence of the important functional groups. All show the characteristic NH-streching absorption in the regions of 3450 — 3400 cm^{-1}, aromatic -CH- at 2950 — 2900 cm^{-1} and B-N group, being double bond character appears in the region of 1520 — 1380 cm^{-1}. The absorptions for N-H bands in KBr are very strong and sharp at 3470 cm^{-1} and 1430 cm^{1}, trivalent bornon at 1350 cm^{-1} and out of plane C-H modes of boron substituted aromatic rings at 760 750 cm^{-1}, 700 690 cm^{-1}.

TABLE I

Borimidazolines



Sl. No.	R_1	R_2	R_3	R_4	M.P. °C	Yield per cent	Properties	Formula	N% Found	N% Reqd.	B% Found	B% Reqd.
1.	CH_3	H	H	H	223–224	80·7	light reddish brown flakes	$C_{13}H_{13}N_2B$	13·08	13·46	5·01	5·28
2.	CH_3	H	CH_3	H	229–231	72·9	light brown flakes	$C_{14}H_{15}N_2B$	12·54	12·61	4·83	4·95
3.	CH_3	H	OCH_3	H	> 293	67·6	greyish brown powder	$C_{14}H_{15}N_2OB$	11·58	11·76	4·65	4·62
4.	CH_3	H	Br	H	217–218	65·5	reddish brown plates	$C_{13}H_{12}N_2BBr$	9·93	9·76	3·80	3·83
5.	CH_3	H	H	NO_2	276–277	59·6	dark brown powder	$C_{13}H_{12}N_3BO_2$	16·83	16·60	4·52	4·35
6.	CH_3	CH_3	H	H	242–243	77·4	pinkish white shining plates	$C_{14}H_{15}N_2B$	12·78	12·61	4·83	4·95
7.	CH_3	CH_3	CH_3	H	257–258	80·1	pinkish brown shining crystals	$C_{15}H_{17}N_2B$	12·01	11·86	4·39	4·66
8.	CH_3	CH_3	OCH_3	H	138–140	62·3	dark brown crystals	$C_{15}H_{17}N_2OB$	11·04	11·11	4·18	4·37
9.	CH_3	CH_3	Br	H	231–233	67·4	light reddish brown shining crystals	$C_{14}H_{14}N_2BBr$	9·49	9·30	3·59	3·65
10.	CH_3	CH_3	H	NO_2	> 290	66·6	light brown flakes	$C_{14}H_{14}N_3BO_2$	15·64	15·73	4·23	4·12

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BEHAVIOUR OF *MACROPHOMINA PHASEOLI* AND *SCLEROTIUM ROLFSII* WITH RELATION TO SOIL TEXTURE AND SOIL pH

THE importance of edaphic factors on the disease incidence in the case of soil-borne plant pathogens has been duly emphasised[1-4] and the effect of soil temperature, moisture and organic matter on the growth and multiplication of *Macrophomina phaseoli* (Maubl.) Ashby and *Sclerotium rolfsii* Sacc. in soils free from plant debris has been noted[3,5,6], but it is not known whether soil texture and pH have any influence on these fungi under similar condition. This communication therefore attempts to present some information regarding the effect of soil texture and soil pH on the prevalence of *M. phaseoli* and *S. rolfsii* in soils which do not contain any fragments of plant tissues.

Air-dried field soil was passed through a 80-mesh sieve to remove all the sand particles and the percentage of silt and clay content was deter-