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ABSCISIC ACID IN *AEGILOPS KOTSCHYI* CARYOPSES

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Key Word Index—*Aegilops kotschyi*; Gramineae; caryopsis; abscisic acid; germination inhibitor.

The glumes and hulls of *Aegilops kotschyi* (Gramineae) contain material which inhibits the germination of the seeds of this plant [1] and lettuce [1–2]. An extract also accelerates leaf abscission in cotton seedlings [2] and inhibits GA_3-promoted reducing sugar production [2–3]. An attempt was made to determine the amount of the inhibitor present in the caryopses and identify it as ABA.

It was found that an inhibitor exists in the acidic ethyl acetate fraction which was prepared from the two types of caryopses. This inhibitor repressed the production of GA_3-promoted reducing sugar. The R_f values of the acidic ethyl acetate fraction of each caryopsis type corresponding to the R_f of the synthetic marker ABA were eluted from the chromatograms. After methylation, the elutes were subjected to GLC. It was found that the extract of the caryopses had a peak at the R_t of 3·0 min which exactly corresponded to R_t of the marker (the *cis–trans* isomer). It thus appears that *cis–trans*—ABA is present in both types of caryopses, its concentration being 2·5 times higher in the smaller (6·2 ng/g dry wt) than in the larger one (2·5 ng/g dry wt), this probably being a contributing factor to the more marked dormancy of the former [3–4].

EXPERIMENTAL

Plant material. Aegilops kotschyi spikelets were collected in the Northern Negev of Israel in the summer of 1971. After dehulling, large and small caryopses were investigated separately.

Extraction. 5 g dehulled smaller and larger caryopses were homogenized in cold 80% MeOH. After shaking the extract for 24 hr in the cold, it was filtered and centrifuged for 20 min at 10000 *g*. The MeOH in the supernatant was removed under vac at 35° and the pH of the aq. layer adjusted to 8·5 with 5% $NaHCO_3$. This was extracted 4× light petrol (30°–40°) and then 4× EtOAc. The pH was then brought to 3·0 with 1 N HCl, and again extracted 4× EtOAc. The latter fractions were combined and evaporated to dryness.

Chromatography. Samples of the EtOAc fraction (equivalent to 1 g dry wt) were separated on Whatman no. 1 paper and with PrOH–NH_4OH–H_2O (10:1:1). The barley endosperm test for gibberellins and ABA [5] revealed the presence of an inhibitory zone at R_f corresponding to that of the synthetic marker (Sigma). The zones were eluted with MeOH and methylated with CH_2N_2 and separated by GLC column 1·8 m × 0·3 cm with 1·5% QF_1 on Gas Chrom Q, 60–80 mesh with N_2 (26 ml/min) at 200°.

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A NEW NAPHTHAQUINONE FROM *TABEBUIA GUAYACAN*

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Plant: *Tabebuia guayacan* Hemsley. *Source*: Panama. *Previous work*: An early report [1] of lapachol in the wood of *T. guayacan* is the only reported investigation prior to the current work [2] in this laboratory. Other *Tabebuia* species have yielded several naphthaquinones, anthraquinones and prenylnaphthalene dimers [3–5]. *Present work.* Hammermilled heartwood was extracted successively with petrol bp 30–60°, Et_2O Me_2CO and MeOH. Recrystallization of cold petrol insolubles yielded lapachol (mp 136–137°) and preparative column chromatography of the filtrate (deactivated Si gel, C_6H_6) yielded a new compound as yellow needles (MeOH) mp 72–73°. Found: C, 81·2; H, 7·51 [Calc. for $C_{20}H_{22}O_2$: C, 81·6; H, 7·53]. UV λ_{max}^{EtOH} (log ε): 327 (3·25), 268 (4·20), 260 (4·19), 245 (4·25), ~243 (4·26) nm. IR: ν_{max}^{Nujol} 1660, 1615, 1590, 1460, 1290, 1280, 1160, 1100, 950, 345, 720 cm^{-1}. The 100 MHz NMR in $CDCl_3$ showed two vinyl gem dimethyl groups (*s* at δ1·70 and δ1·80), 2 equivalent