Sugars of the Glycoside of the Root of *Marsdenia erecta* R. Br.

Marsdenia erecta is a plant which grows in Turkey as well as the Near East. Recently some of us[1] have studied the morphological and chemical properties of this plant and isolated a glycoside—marsdenin. To identify the sugar contents of this glycoside and compare with the sugars of the other *Marsdenia* glycosides, we obtained the glycoside, hydrolysed it and identified its sugars by paper chromatography.

200 gm. of dry root of *Marsdenia erecta* were powdered and extracted with petrol ether, chloroform and ether as previously described by F. Korte and I. Korte[2], who used this method for extraction of the glycoside condurangin. The extraction product was dissolved in 200 ml. of 10 per cent methyl alcohol and filtered through an aluminium oxide column. The filtrate is dried by aeration and gave the glycoside. This glycoside is hydrolysed in 20 ml. of 5 per cent sulphuric acid solution in a boiling water-bath for 5 min. and the aglycone fraction is separated by filtration. The filtrate is neutralised with barium carbonate, decolourized with charcoal and dissolved in ethyl alcohol and evaporated: the residue is redissolved in water. The water-soluble hydrolysates were run for 24 hr. on paper chromatograms, Whatman No. 1 (descending technique) using the organic layer from a freshly prepared *n*-butanol-acetic acid-water mixture (4 : 1 : 5, v/v)[3].

These were sprayed with aniline hydrogen phthalate reagent[4] and the chromatograms were dried in an oven at 110° C. The chromatograms showed 4 spots. The first one was dark brown and agreed with authentic specimen of glucose, the second one was brown and corresponded to condurangobiose. Third and fourth spots were dark brown and authentic for thevetose and cymatose respectively.

It seems that the sugars of both glycosides (condurangin and marsdenin) are chromatographically the same. On the other hand the aglycone fractions of these two glycosides are different. To show the difference between these two aglycone fractions, we used different solvents as described by Zechner and Zölss[5], and observed that the solubility of these two aglycone fractions were entirely different.

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Production of Emetic Material by Species of Fusarium

Occasionally crops of barley and other cereals in the mid-western States of America have been infected with one of several species of *Fusarium* that cause a condition known as 'scab'. Such grain often contains an emetic principle[1] which renders it unsuitable for feeding to animals having simple stomachs.

To the best of our knowledge, there are no reports of these micro-organisms producing emetic material in artificial media. As part of an investigation into the physiology of micro-organisms associated with grain, we have found that certain of the *Fusaria* produce emetic material when grown for at least 10 days in a suitable artificial liquid medium with agitation.

The micro-organisms investigated were *F. moniliforme* (two strains), *F. oxysporum lycopersici*, *F. graminearum*, *F. avenaceum*, *F. poae*, *F. sporotrichioides*, *F. equiseti* and *F. culmorum*. All these micro-organisms except *F. oxysporum lycopersici* produce or cause the plant to produce emetic material in grain. Those which produced emetic material in artificial media were *F. moniliforme* (one strain), *F. poae*, *F. culmorum* and *F. nivale*. All the last named, except *F. nivale*, were grown in Richards' solution[2]. For *F. nivale*, which showed poor growth in this medium, nutrient broth was used (3 gm. 'Difco' beef extract, 10 gm. 'Difco' peptone, 10 gm. glucose and 1 litre water). Culture filtrates were evaporated to one-fifth their original volumes, adjusted to *p*H 9 with sodium hydroxide solution and extracted exhaustively with diethyl ether. Upon the evaporation of the dried ether solutions, the ether-soluble residues were examined for the presence of emetic material by injecting an aqueous suspension of 5–10 mgm. intravenously into pigeons. A positive response was indicated by prolonged emesis. Controls prepared similarly by processing sterile media showed no activity.

Work is in progress to ascertain the chemical nature of the emetic compound(s) in these preparations and in extracts of 'scabbed' grain.

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Sterol Glycosides in Oilseed Phospholipids

Sterol glucosides (sterolins) have been shown to be present in the commercial phospholipids obtained from soybean[1], cotton-seed[2], corn[3] and groundnut[4]. Using the acetone extraction procedure already described[4] we have now isolated similar compounds from rapeseed and linseed phospholipids; to the best of our knowledge this is the first report of the existence of sterol glycosides in any part of the flax or rapeseed.

Precipitation with acetone of an ethereal solution of commercial rapeseed 'lecithin' yielded a crude phospholipid which contained 2·1 per cent of sterol glycoside, and a similar substance was found to comprise 2·9 per cent of linseed phospholipids, prepared in a like manner. It is probable that in each case β-sitosterol is the major sterol component, but minor proportions of other phytosterols may also be present; thus detailed examination of the