The Presence of an Aloin-like substance in Cascara Bark

SIR,—At the British Pharmaceutical Conference in Dublin last September, one of us (J.W.F.)[1] stated that there was evidence for the presence of a "resistant glycoside" in cascara (*Rhamnus purshiana*) which was possibly based on aloe-emodin. We have now succeeded in isolating a small quantity of this substance and preliminary tests indicate that it shares several properties of barbaloin. Barbaloin has recently been shown[2] to consist of aloe-emodin anthrone linked to glucose by a –C–C–linkage and not by the normal glycosidal link. Our new compound possesses the following properties which are identical with those of barbaloin: (*a*) it is not hydrolysed by heating with 3 N HCl as is usual with anthracene glycosides; (*b*) heating with ferric chloride leads to the production of anthraquinones; (*c*) the ultra-violet light curve shows peaks at 266 to 268 mμ and 296 mμ. It differs, however, from barbaloin in the following respects: (*a*) it is sweet and is much more water soluble; (*b*) the ultra-violet light curve of the new compound has a small peak at 325 mμ but none at 355 mμ, barbaloin has no peak at 325 mμ but a pronounced one at 355 mμ; (*c*) ferric chloride oxidation leads to the production of two anthraquinones. The first one was identified as aloe-emodin by its position on a paper chromatogram, its ultra-violet light curve and the melting point of the few crystals obtained. The second one appeared to be chrysophanol judged by its position on the paper chromatogram; but its ultra-violet light curve differed markedly from that of pure chrysophanol. This may be due to interfering substances eluted from the paper along with the anthraquinone; the R_F value of chrysophanol is 0·95 and in this region a certain amount of fluorescent material accumulates even in washed paper. A few crystals of the substance gave a melting point consistent with chrysophanol containing a slight amount of impurity.

The new compound bears some resemblance to "Casanthranol" described by Lee and Berger[3]; but it differs from their compound in that it is stable in water and appears to contain chrysophanol. It seems to be present in comparatively large amounts in the crude drug and in extracts and we are preparing a quantity for biological experiments and for further work on the anthraquinones and sugars present.

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