TABLE 3

VOLATILE BASES RELEASED FROM TCA EXTRACT OF BRAIN CORTEX BY OXIDATION WITH ALKALINE $KMnO_4$

Expt.	Area	N mg % non-stimulated	Stimulated
1	Frontal and central	23.0	32.0
2	Frontal and central	22.0	43.0
3	Frontal	31.5	32.5
	Central	33.0	43.0
	Occipital	39.5	43.5
4	Frontal	39.5	45.0
	Central	45.0	45.0
	Occipital	44.5	47.5
5	Frontal and central	36.8	50.0

tion of these bases during stimulation in spite of a considerable increase of NPN, when their resting concentration reached this figure.

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Effect of Phosphorylated Hesperidin and Other Flavonoids on Fertility in Mice

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Several reports have appeared recently concerning the antifertility activity of phosphorylated hesperidin, a compound previously shown (*1*) to be a hyaluronidase inhibitor. This derivative of hesperidin has been reported to prevent conception in rats (*2*), mice, and humans (*3*) when administered orally or intraperitoneally. However, Chang and Pincus (*4*) were unable to confirm the reported activity of phosphorylated hesperidin, and furthermore indicated that a hyaluronidase inhibitor would not necessarily be an inhibitor of fertilization. Subsequently Martin (*5*) reported that the phosphorylated hesperidin as originally used was a mixture of phosphates, only one of which acts as an antifertility agent.[1]

In the present investigation, initiated before publication of the reports by Chang and Pincus (*4*) and Martin (*5*), three flavonoids, phosphorylated hesperidin,[2] dihydroquercetin, and hesperidin methyl chalcone were tested for antifertility activity in mice. Rodney *et al.* (*6*) have shown that dihydroquercetin inhibits hyaluronidase *in vivo* to a greater extent than most of the other flavonoids tested by these investigators. Although hesperidin methyl chalcone does not inhibit hyaluronidase (*6, 7*), it seemed of interest to include this compound in the antifertility tests because of its similarity in structure with the two other flavonoids being tested.

[1] Following the completion of this paper for publication, Millman and Rosen (SCIENCE, **118**, 212 [1953]) reported that phosphorylated hesperidin did not reduce fertility in mice or rats treated orally or by intraperitoneal injection.

[2] We wish to thank G. J. Martin, of the National Drug Co., Philadelphia, for supplying the phosphorylated hesperidin.

TABLE 1

PREGNANCY IN MICE

Group No.	Compound*	No. males	No. females	No. pregnant	Gestation period† days
1–6	None	6	24	22	21–34
7, 8	Phosphorylated hesperidin	2	8	8	21–30
9, 10	Dihydroquercetin	2	8	6	21–31
11, 12	Hesperidin methyl chalcone	2	8	8	21–23

* Each compound incorporated in diet at a level of 0.875 g/kg.

† Refers to number of days from the time male was introduced to the female to the day of parturition.

Weanling mice were separated according to sex and maintained on a laboratory breeding ration consisting of ground grains, alfalfa leaf meal, brewers' yeast, and whole liver powder until the mice were 7 wk old. At this time 3 females were placed with each male for fertilization. Pregnancy records were kept for each group. Following the parturition of their first litter, 48 fertile females were arranged in 12 groups of 4 each. In addition, 12 males of proved fertility were housed individually. Each of the 3 flavonoids to be tested for antifertility activity was incorporated at a level of 0.875 g/kg of the breeding ration, respectively. Since 5–6 g of diet were consumed/day/mouse (weighing 25–35 g), the level of flavonoid used afforded an intake of approximately 150 mg/day/kg of body weight. Two groups of females and 2 males were maintained on the respective diets 10–12 days prior to placing the males with the females. Each group continued to receive their respective diets during mating. The remaining 6 groups of females and males received the unsupplemented breeding ration and served as controls. About 2 wk following the introduction of the male, the females were examined daily for pregnancy and removed from the male if pregnant. The data obtained are presented in Table 1. The results of this investigation indicate that fertility in mice was not affected by any of the compounds tested under the conditions of this study.

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