indices of small intestine crypts were calculated 5 h after injection to check whether any inhibitory effect on mitoses could be generally observed.

Results. The table shows the number of newly formed blood vessels observed in preirradiated Swiss mice on the 3rd day after single intradermal injection of 4×10^6 CFW splenocytes.

The mean number of blood vessels in recipients injected with cartilage extract was significantly lower from those in the other groups at $p < 0.05$, as estimated by Student's t-test. This number was comparable with that evoked in the control group by injection with half of splenocyte dose, i.e. 2×10^6 cells. Mitotic indices in intestinal crypts in all groups were not different at $p < 0.05$ and ranged from 3.94 to 4.06.

Discussion. The results show that human funnel chest cartilage extract, when administered systematically (i.v.), inhibits vasoproliferation in mice, induced in the course of a local GVH reaction. The extract decreases the angiogeneic response induced by intradermal injection of 4×10^6 allogeneic splenocytes to a level obtained by giving a dose of 2×10^6 spleen cells to control animals. The effect is specific, since other xenogeneic proteins do not decrease angiogenesis. Target cell seems to be endothelial cell, because mitotic indices of other cells like those in intestinal crypts are not affected, which rather excludes a nonspecific toxic effect of the extract on cell divisions.

It was suggested that small cationic proteins of protease inhibiting properties are responsible for cartilage effect on endothelial cell proliferation[8,9]. The cartilage is a very rich source of lysozyme[10,11], a cationic protein of mol. wt of the same range as inhibitory substance from cartilage[5]. A lysozyme was shown to inhibit some proteolytic enzymes[12], but an other study[13] did not confirm that finding. In our study the lysozyme from egg-white did not affect angiogenesis.

Further purification of human cartilage extract seems to be justified in view of possible application of endothelial cell growth inhibitor to block angiogenesis in tumors or in other pathological conditions, where hyperproliferation of blood vessels is observed.

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Electrical resistivity of labellar taste hairs of male and female blowflies, *Phormia regina* (Meig.)[1]

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Summary. The electrical resistivity of labellar taste hairs is higher in males than in females of *Phormia regina,* thus indicating a different ion diffusion and different interaction probabilities between stimulating agents and chemosensory dendrites in males as compared to females. This could account for differences in food intake between males and females.

The blowfly, *Phormia regina,* and various other species of insects, show different survival capabilities in the two sexes[2]. Besides, it has been noticed in *Protophormia terraenovae* R.D. that both mortality and the percentage of inactive labellar taste hairs change with the same time course as a function of age[3]. The percentage of inactive taste hairs of *Phormia* also varies with sex, being lower in females[4]. In addition, females consume more sugar and protein than males (Greenberg and Stoffolano, personal communication), and this coincides with the higher body weight and O_2-consumption of females[5]. On the basis of these facts, it seemed of interest to us to investigate whether different properties of labellar taste hairs, specifically electrical resistivity, existed in the two sexes. The electrical resistivity of the hairs was taken into account to estimate the diffusion of ions from the external environment to the dendrite, bearing in mind that the stimulating effectiveness of the ions present in the external environment is obviously related to their diffusion properties. In this respect, the mucopolysaccharidic layer which separates, at the labellar hair tip, the external environment from the dendrite[6,7], may be the important barrier.

To evaluate their electrical resistivity, the hairs were bathed in 2 groups of equiconductive solutions: the former consisted of alkaline chlorides, the latter of alkaline-earth chlorides, all of them exerting a stimulating action. The former group comprized a 0.4 M NaCl solution and KCl and LiCl solutions equiconductive with the NaCl one; the latter a 0.4 M $MgCl_2$ solution, and $CaCl_2$ and $BaCl_2$ solutions equiconductive with the $MgCl_2$ one. The equiconductive solutions were experimentally prepared by adding adequate amounts of the given salts and by measuring their conductivity by means of a Kohlrausch bridge. The resistivity measurements were performed on labellar taste hairs of *Phormia* (6–8 days old) according to the method described by Stürckow[8]. Only the first 2–3 long rostral aboral labellar hairs, following the classification of Den Otter[9], were taken into account. Either group of equiconductive solutions was applied to each hair in a random sequence. The results in table 1 show that the resistivity of labellar taste hairs bathed in NaCl, KCl or LiCl equiconductive solutions is higher in males than in females. The differences were statistically significant.

The same results were obtained by bathing the hairs in

Table 1. Labellar taste hair resistivity (MΩ) of males and females of *Phormia* when tested with NaCl, KCl and LiCl equiconductive solutions

	Test solution NaCl	KCl	LiCl
Males	39.23±0.71 (56)	38.58±0.73 (56)	38.95±0.67 (56)
Females	35.21±0.91 (40)	33.91±0.94 (40)	33.98±0.99 (40)

Mean values±SE. Males differ significantly from the corresponding females (Student's t-test, $p < 0.001$). The number of experiments in brackets.

Table 2. Labellar taste hair resistivity (MΩ) of males and females of *Phormia* when tested with $MgCl_2$, $CaCl_2$ and $BaCl_2$ equiconductive solutions

	Test solution $MgCl_2$	$CaCl_2$	$BaCl_2$
Males	50.35±0.69 (55)	50.27±0.96 (56)	51.97±1.17 (56)
Females	46.75±1.23 (38)	46.27±1.20 (38)	45.48±1.02 (39)

Mean values±SE. Males differ significantly from the corresponding females (Student's t-test, $p < 0.001$). The number of experiments in brackets.

$MgCl_2$, $CaCl_2$ or $BaCl_2$ equiconductive solutions. Also in this case, the differences were statistically significant (table 2). Since the resistivity of labellar hairs is always lower in female *Phormia*, irrespective of the kind of bathing solution, one can assume that the concentrations of the stimulating ions we used in our experiments is higher, at the chemosensory dendrites, in females than in males. In fact, the lower resistivity of labellar taste hairs of females indicates a higher ion diffusion from the ambient solution to the dendrite. Consequently, females can be affected to a greater extent by the stimulating action of ions.

In conclusion, it seems conceivable that our results can contribute to an explanation, on the basis of a different response to the environmental stimulating agents, of the unequal food intake of males as compared to females.

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Enhancement of ethanol-induced sleep by whole oil of nutmeg

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Summary. In young chickens, the whole oil of nutmeg (200 mg/kg) increased the duration of sleep induced by ethanol (1-4 g/kg), particularly deep sleep. Iproniazid (50-400 mg/kg), a monoamine oxidase inhibitor, did not mimic this effect.

Due to its easy availability and potential for abuse as a psychotropic agent (i.e. a hallucinogen)[2,3], the basic pharmacology of the whole nutmeg (N), which is the dried seed of the nutmeg tree (*Myristica fragrans* Houtt.), its essential oil (NO), and the constituents of the aromatic fraction of the essential oil (e.g. myristicin, elemicin, etc.) have received some attention in the literature[3-8]. The mechanism of action of N is still rather poorly understood, although it has been suggested that N, NO, or myristicin may act as a weak monoamine oxidase inhibitor (MAOI)[9,10]; that amphetamine derivatives might be formed from myristicin and/or elemicin[8,11]; or that they might be transformed into the amino derivatives, either by direct transamination or oxidation and transamination[4]. While myristicin, one of the key components of the aromatic fraction of the oil of nutmeg, has some psychotropic activity, it does not account for the activity of the whole oil in humans[3,6]. It should be noted that elemicin, which is also a component of the aromatic fraction of the oil, but usually present in smaller amounts than myristicin, is approximately twice as potent as myristicin in rodents[12]. The interactions of N, NO, and the potentially active components, myristicin and elemicin, with other pharmacological and particularly psychopharmacological agents have received relatively little attention[7]. Since it has been reported that alcohol and MAOIs synergize each other[13], and since it is likely that alcohol and nutmeg might be consumed together by drug experimenters, and since myristicin and elemicin have been reported to alter the duration of ethanol-induced sleep in rodents[7], we felt that it was important to determine the interactions of the whole oil of nutmeg, which is likely to be more potent than its fractions, with ethanol. Since we found that young chickens were relatively susceptible to the effects of the whole oil of nutmeg[14], we decided to determine the interactions of ethanol and the whole oil of nutmeg in the young chicken.

Methods. Male White Leghorn chickens were obtained at 1 day of age from the Kazmeier Hatchery (Bryan, Texas) and housed in temperature controlled brooders, with food and water available ad libitum. The whole oil of nutmeg (F.C.C. East Indian Extra) was obtained from Fritsche D&O (New York, N.Y.). Weighted samples (i.e. 200 mg) of the whole oil were dissolved in 10 ml of distilled water which contained 0.05 ml Triton X-100 (Sigma Chemical Co., St. Louis, Mo.). This allowed a dose level of 0.1 ml/g of b.wt. Iproniazid phosphate (Sigma) was dissolved in similar volumes of distilled water and administered at dose levels of 50, 100, 200, and 400 mg/kg. Ethanol 95% (IMC Chemicals, Harvey, La.) was appropriately diluted with distilled water to allow the same relative volumes of alcohol solution to be injected. The dose levels of alcohol were 1.0, 1.5, 2.0, 2.5, 3.0 and 4.0 g/kg. All drugs were