the mammary tissue can not be attributed to a general foreign substance reaction.

A beginning attempt at fractionation of the desiccated mammary tissue of rabbits 26 days pregnant has yielded a strong tumor-inhibiting ether-insoluble fraction and an equally potent tumor-stimulating ether-soluble fraction. The desiccated mammary gland was first thoroughly extracted with ether and the soluble material, after evaporation of the ether, was suspended in 1 per cent. phosphate buffer. The insoluble portion of the powder was extracted with sterile distilled water. The pH of each test solution was 7.0–7.2.

The results of the tests are shown in Table I and include only those in which all the solutions were tested concurrently on grafts from the same tumor substrate and on mice from the same cage lot. A tumor growth was considered inhibited when the control in the same animal was twice the weight of the test tumor at 21 days or more after inoculation. When the test tumor was twice the weight of the control it was considered as evidence of stimulation. Following the accepted procedure, a significant difference from the normal frequency distribution depends on the value of P being less than .05. The table shows that there was an excellent fit between the frequency distribution of results from double controls and that of the theoretical normal distribution. The results demonstrate not only a definite inhibiting action of the water extract of the ether-insoluble fraction of the rabbit mammary gland, but also an equally definite stimulating property of the ether-soluble fraction from the same tissue. Furthermore, it would appear that there is a partial neutralization of the two forces in the aqueous extract of the unfractionated mammary tissue.

Additional results, including tests of both rabbit and cow glands, are presented in Table II. The results

TABLE II

TUMOR INHIBITION AS SHOWN BY FRACTIONS OF RABBIT AND COW MAMMARY GLAND

Fractions	Frequency of: Inhibition	No effect	Stimulation	N	χ^2	n′	P*
Unfractionated ..	154	115	29	298	48.49	3	.000001
Ether-insoluble ..	79	43	9	131	48.02	3	.000001
Double controls ..	63	110	68	241	Standard of reference		
Theoretical normal distribution ...	60	120	60	240	1.01	3	.61

* P = "Probability that deviations as great or greater would occur by chance."

are pooled because there was no significant difference between the effects of extracts of rabbit and cow mammary tissues.

The results seem to offer further support to the idea that active normal tissues may contain two factors, one capable of inhibiting the multiplication of cells and the other augmenting the process.

DOUGLAS A. MACFADYEN
ERNEST STURM

DOMINANT LETHAL GENETIC EFFECTS CAUSED BY NEUTRONS

IN crosses of unrelated stocks of the parasitic wasp Habrobracon, all females come from fertilized eggs, all males from unfertilized. Treatment of sperm with any physical agent causing dominant lethals should therefore reduce number of female progeny. Number of male progeny should not be affected unless the sperm were themselves rendered incapable of "fertilizing" the eggs. In this case the males would be increased.

As a preliminary experiment wild-type male wasps were sent via air mail to Berkeley, California, and subjected to various dosages of neutrons by Professor Ernest O. Lawrence. Upon being returned these males were crossed with unrelated orange eyed females. Progeny (Table 1) indicate decreased fecundity of the

TABLE 1

Treatment	Total days during which progeny were being produced	Progeny: Orange males	Wild-type females	Males per day	Females per day
Control ..	70	42	139	0.60	2.00
530 R. ...	20	14	35	0.70	1.75
900 R. ...	75	43	50	0.57	0.66
1900 R. ..	65	20	5	0.31	0.08

mates of the treated males. It is likely that the fluctuations in number of male offspring are due to small numbers involved.

Although the data presented herewith are meager, they are reported at this time because the cyclotron will not be available for use for several months.

P. W. WHITING
UNIVERSITY OF PENNSYLVANIA

RECOVERY OF INFLUENZA VIRUS SUSPENDED IN AIR

THE union of two independent techniques has made possible the recovery of the Puerto Rico 8 strain of influenza virus,[1] experimentally suspended in air. One of us (H. W. B.) prepared liquid suspensions of the influenza virus and confirmed, by means of animal inoculation, its recovery from air.[2, 3] The other (W. F. W.) atomized the liquid suspension of virus into

[1] Provided through the kindness of Dr. T. Francis, Jr., Rockefeller Institute.

[2] H. W. Brown. Unpublished Thesis, Harvard School of Public Health, 1936.

[3] H. W. Brown, *Am. Jour. Hyg.*, in press.