Lynch[6, 7, 8] has demonstrated that lung tumor susceptibility may be transmitted by mating males from a high lung tumor line to females from a low tumor line. Observations on a very small number of individuals considered above and unpublished data verify these findings. They may also indicate that lung tumor susceptibility may be transmitted by either parent.

Conclusions. 1. Reciprocal crosses between 2 inbred high tumor lines indicate that: (a) The mean mammary gland tumor age in F_1 breeding females is more nearly related to that of the maternal stock. (b) The proportion of animals developing tumors in the F_1 generation was considerably greater than in the maternal stocks. (c) The relative correlation of the tumor incidence between the maternal strain and the hybrid generation was approximately the same.

2. A small number of observations show that lung tumor susceptibility may possibly be transmitted by parents of either sex from the high lung tumor race.

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Mechanism of Methylene Blue in CO-Poisoning.

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In order to see what effect methylene blue had upon the form of the hemoglobin in rabbits poisoned with CO, spectrophotometric analyses were made on blood at regular time intervals up to 20 minutes after removal of the animal from the gas chamber. Each rabbit was allowed to remain in an atmosphere of CO plus air, (% composition not determined) until it was unconscious and barely breathing, but not long enough to cause death. CO_2 was absorbed by soda lime. The animal was then taken out, a heart puncture made and 2 drops of blood immediately placed in a small tube filled to the brim with a measured amount of 0.4% NH_4OH. This was then tightly stoppered with paraffined corks excluding air, and shaken to cause complete hemolysis. A 0.03% methylene blue solution (Merck's medicinal) dissolved in 0.9% NaCl was then in-

[6] Lynch, C. J., *J. Exp. Med.*, 1924, **39**, 481.
[7] Lynch, C. J., *J. Exp. Med.*, 1926, **43**, 339.
[8] Lynch, C. J., *J. Exp. Med.*, 1931, **54**, 747.

jected intravenously, 1 cc. per kg., one minute after the animal had been removed from the CO chamber. Heart punctures were made 2, 4, 7, 11, 16 and 21 minutes later and samples collected as described above. Control animals were either given injections of 0.9% NaCl alone or no injections. There was no difference in the observed values between the 2 types of controls. Ten animals in each series were used. The probable error of the mean readings at each time was less than 1%. The disappearance of CO-hemoglobin and reappearance of oxyhemoglobin was then followed by spectrophotometric readings of the blood samples. The method described in previous papers[1] was used, the ratio of the extinction coefficients at 540 and 560 mμ being determined. This indicates the per cent oxyhemoglobin as compared with CO-hemoglobin present. Table I shows the progressive change in the proportion of the total hemoglobin present, the remainder in each case being CO-hemoglobin.

TABLE I.
% Oxyhemoglobin.

Time, min.	Controls	Methylene blue
0	26	26
1	43	76
3	54	96
11	63	100
21	82	100

This shows the rapid change from CO-hemoglobin to oxyhemoglobin in the case of the treated animals as compared with the slower change for the controls.

These results show definitely that methylene blue changes CO-hemoglobin into oxyhemoglobin in the blood stream and not into methemoglobin as stated by Henderson,[2] and Haggard and Greenberg.[3] Furthermore, they confirm previous findings that methylene blue is an antagonist for CO-poisoning and that it acts rapidly as opposed to the slower method advocated by Henderson.

1 Brooks, M. M., PROC. SOC. EXP. BIOL. AND MED., 1934, **31**, 1134.

2 Henderson, Y., *Science*, 1933, **78**, 408.

3 Haggard, H. W., and Greenberg, L. A., *J. Am. Med. Assn.*, 1933, **100**, 2001.