

plete circuit of the grill and thus return always to the initial position it may readily be adapted to other modes of stimulation (visual). We have not used it for training animals other than cats, but with minor modifications it should be eminently suited for any of the smaller species, such as guinea pigs.

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### THE DETERMINATION OF MOISTURE IN UNSTABLE PRODUCTS

For the determination of moisture in relatively unstable products the vacuum oven is more dependable than the electrically heated and controlled drying oven, as is shown by the results obtained on six brands of commercial smoking tobacco and on the tobacco removed from five brands of cigarettes, all purchased in the local market. The samples were ground to pass a 1 mm sieve and the determinations conducted in glass-stoppered weighing bottles.

The vacuum oven employed was a water-jacketed Carr evacuated by an ordinary filter pump at room temperature (25° C.) with the intake air passed through sulfuric acid. The drying period for finely ground materials is generally over night (20 hours), but in this instance was continued through two nights, because of excessive humidity in the laboratory, followed by a single over-night run for the second weight. The electrical drying oven was of standard make and heated to 95° C. The drying periods were

### MOISTURE IN TOBACCO SAMPLES

Sample No.	Vacuum oven		Electrical drying oven		
	Period 1	Period 2	Period 1	Period 2	Period 3
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
<i>Smoking</i>					
1 .....	4.65	4.76	6.17	6.64	7.37
2 .....	5.81	5.93	7.21	7.80	8.90
3 .....	4.99	5.11	7.38	8.28	9.52
4 .....	4.87	4.98	6.13	6.34	6.73
5 .....	5.52	5.64	7.31	7.92	8.83
6 .....	5.61	5.70	7.52	8.39	10.01
<i>Cigarettes</i>					
7 .....	4.82	4.95	6.52	7.05	8.04
8 .....	4.50	4.65	6.46	7.07	8.11
9 .....	5.37	5.51	7.33	7.91	9.01
10 .....	5.49	5.59	7.10	7.49	8.56
11 .....	5.79	5.90	7.67	8.23	8.99
<i>Average</i> ...	5.22	5.34	6.98	7.56	8.55

two, of 3 to 4 hours each, followed by an over-night run for the third weight.

The slight additional loss on the second weighing from the vacuum oven could be attributed largely to quicker handling and to lower humidity. Decomposition was a serious factor by the electrical drying oven, even for the first period, and increased for the duration of the test. Similar results were obtained on ice-cream stabilizers.

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## SPECIAL ARTICLES

### HEREDITARY VARIATIONS IN THE GESTATION PERIOD OF THE RABBIT

For the past few years this laboratory has maintained an experimental colony of rabbits, comprising approximately 1,500 standard bred and hybrid animals. Each of the standard breeds has been inbred to a considerable extent in order to obtain a more homogeneous population than was represented by the original stock. In some cases close inbreeding has been maintained for several years. The data accumulated have included accurate records of the date of service and of birth of nearly all animals raised in the colony. Experience showed that the gestation period varied from 29 to 36 days. The data bearing on this subject have been submitted to a statistical analysis for the purpose of determining whether breed or race had any influence on the duration of pregnancy in the rabbit.

A total of 569 pregnancies from observed matings, distributed over a five-year period (1929 to 1933),

forms the basis of the present analysis. Matings were made in all months, with the exception of July and August. Eleven breeds, consisting of ten standard bred strains and one intensively inbred line of albinos which may be considered as a breed or family, are represented. The mean gestation period ranged from a low of 30.37 days for the Polish to 32.89 days for the inbred albino group. The number in each breed, together with the breed mean values, are given in the accompanying table.

It was found that the variance between breeds was significantly greater than the variance within breeds (Var. between means of breeds = 19.09; Var. within breeds = 0.86;  $F = 22.2$ ,  $P = 0.01$  -, significant). In order to make the test of variance more exacting, the albino group which had the longest gestation period, and which in reality is a family and not a standard breed, was excluded. On this basis, the variance between breeds, although reduced, was still significantly greater than the variance within breeds (Var. between