sulfate) is inversely proportional approximately to the cube of the oxygen consumption rate (*A. glabratus*). Some justification for comparing the LD_{50} of one genus of snails with the oxygen consumption rate of another is found in the fact that the oxygen consumption curve corresponds closely with the normal curve which Krogh (*8*) found to be valid for a wide variety of cold-blooded animals.

In view of (*a*) the prevalence of bilharziasis (*9*), (*b*) the fact that copper sulfate is currently the only chemical in large-scale use as a molluscacide,[6] and (*c*) the fact that the number of snails in a given canal, as estimated by the use of dip nets or palm-leaf traps, may decrease as much as 80% during the hot summer months without *any* external treatment (*10, 11*), the importance of temperature as a factor in snail control work can scarcely be overemphasized.

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[6] More than a million pounds per year are used in Egypt alone.

Chick-Growth Stimulation Produced by Surfactants[1]

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Certain surfactants have been found to produce an increased growth response in chicks. As part of a broad study on the use of distillers solubles in animal nutrition, it has been observed that these surfactants, when fed at levels ranging from 13 to 454 g/100 lbs mixed ration, will promote an increase in growth ranging to 12% above the controls. (Surprisingly, many commercial preparations for home laundry and dishwashing use are among the active types.) These results have been obtained in laboratory battery trials of more than two years' duration. A total of 125 individual test groups of 20 chicks each has been studied to date, all chicks being carried on experiment to 10 or 12 weeks of age. Practical-scale field trials have been conducted to check important laboratory findings.

[1] A preliminary report.

Tables 1 and 2 give the basal rations used and experimental data obtained in a typical test series on a rather thoroughly studied surfactant, an ethylene oxide condensate of coco fatty acids.

Evidence collected to date on B_{12}–antibiotic–surface-active-agent supplementation, both alone and in

TABLE 1

ALL-VEGETABLE BASAL DIETS USED FOR CHICK TESTS (Table 2)

Ingredient	Lbs/100 lbs	
	Basal for Series I and II	Basal for Series III
Ground yellow corn	60.0	60.5
Soybean oil meal (41%)	18.0	35.0
Corn gluten meal	10.0	—
Alfalfa meal	4.0	—
Distillers solubles	5.0	—
Feeding limestone	1.3	1.5
Steamed bone meal	1.0	2.0
1,500 A/400 D oil	.35	.50
Salt	.35	.50
$MnSO_4$	.02	.02
Riboflavin	—	(150 mg)
Total	100.02	100.02

TABLE 2

COMPARISON OF A SURFACE ACTIVE AGENT WITH B_{12} AND ANTIBIOTICS IN AN ALL-VEGETABLE–TYPE BROILER RATION

Series	Group	Supplement*	Amt Supplement fed for 100 lbs ration (grams)	Final† chick wt (lbs)	Lbs feed/lb gain
I	A	Control basal #1	None	2.82	2.71
	B	As "A" plus aureomycin supplement	50	3.22	2.57
	C	As "A" plus lauryl ethylene oxide condensate	50	3.09	2.84
II	A	Control basal #1	None	3.00	2.84
	B	As "A" plus terramycin supplement	50	3.14	2.67
	C	As "A" plus lauryl ethylene oxide condensate	50	3.31	2.85
III	A	Control basal #2	None	3.06	3.14
	B	As "A" plus vitamin B_{12}	50	3.33	3.26
	C	As "A" plus bacitracin supplement	50	3.34	3.08
	D	As "A" plus lauryl ethylene oxide condensate	50	3.34	2.97

* Antibiotic supplements used had a guaranteed potency of 5 g antibiotic/lb; B_{12} supplement used had a potency of 6 mg B_{12}/lb.

† Final chick weights in Series I and II were taken at 70th day; in Series III, on 84th day. Weights shown are the male-female average.

various combinations, points to a similarity between the chick-growth response on antibiotics and surface-active agents. Preliminary investigations of a possible synergistic effect between surfactants and B_{12}–antibiotic supplements have been negative. Further studies on this discovery are being continued by the Nutritional Group of National Distillers Research Division.

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Hereditary Differences in Ability to Conceive Following Coitus in Mice[1]

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Recent studies of the effects on embryonic development of cortisone injected into pregnant mice included observations on the strain differences in response to treatment (*1*). The mice were of 5 genetically different stocks: strains A, C57 black, and Black and tan, all originally received from the Jackson Laboratory at Bar Harbor, a stock (N) carrying the mutant "Naked" which was inbred in this laboratory for 11 generations, and a genetically heterogeneous stock (H). Very early in the cortisone studies it was found that these 5 stocks of mice fell into two distinct groups with respect to incidence of cleft palate in the offspring of pregnant mice injected with cortisone. Stocks A and N showed a very high incidence, whereas stocks C57, Black and tan, and H produced a relatively low incidence of offspring with cleft palate.

Strain differences have also been found in the incidence of pregnancy following coitus. When a female was found with a vaginal plug it was assumed that she had been inseminated within the preceding 24-hr period.

Table 1 shows that pregnancy does not necessarily follow insemination of the adult female mouse and suggests that female mice of some stocks (A, N) are less likely to become pregnant following coitus than female mice of other stocks (C57, Black and tan, H).

TABLE 1

INCIDENCE OF PREGNANCY FOLLOWING OBSERVATION OF VAGINAL PLUG IN 5 STOCKS OF MICE

Stock	No. females with vaginal plug	No. pregnant	Percentage pregnant
A	35	5	14.3
N	14	4	28.6
C57	18	14	77.8
Black and tan	15	9	60.0
H	2	2	100.0

[1] This work is part of a project made possible by a grant from the National Research Council of Canada. Thanks are due F. Clarke Fraser for closely supervising the entire project.

TABLE 2

INCIDENCE OF PREGNANCY FOLLOWING OBSERVATION OF VAGINAL PLUG IN 2 GROUPS OF MICE*

Stock	No. females with vaginal plug	No. pregnant	Percentage pregnant
A, N	49	9	18.4
C57, Black and tan, H	35	25	71.4

* The difference between the two groups is highly significant at the 1% level ($\chi^2 = 9.8263$, $P \ll 0.01$).

In Table 2 the data presented in Table 1 are grouped according to susceptibility to cortisone treatment as measured by the incidence of cleft palate in the offspring of cortisone-treated pregnant females.

The animals of stocks A and N (both stocks highly susceptible to cortisone treatment) were significantly less likely to become pregnant following coitus than animals of C57, Black and tan, and H (the three stocks constituting the cortisone-resistant groups).

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A Simple Technique for Repeated Collection of Blood Samples from Guinea Pigs

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In studies on the action of antibiotics, chemotherapeutics, or antigenic substances, it is frequently necessary to bleed a guinea pig at certain intervals for micro- or semimicrochemical work related to their absorption, blood concentration, therapeutic activity, etc. Frequent bleedings may also be necessary in studies on blood circulation of bacteria, viruses, or antibodies. Heart puncture is not advised when re-

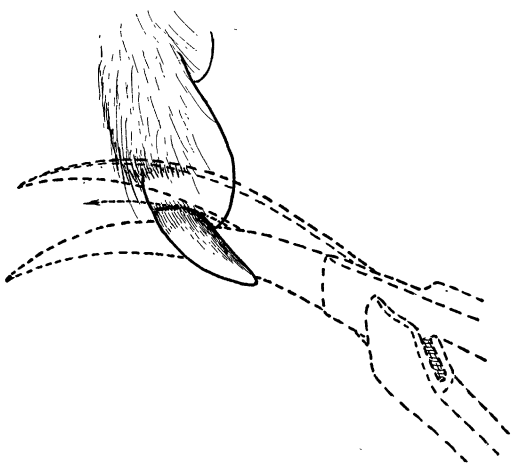

FIG. 1.