glucose of the normal cows even when as much as 3 g was administered in one dose. However, the injection of 1.5 g of cortisone into each of the 2 fasted cows resulted in a marked increase in blood glucose. This increase in the glucose was greater and was maintained at a higher level for a longer period of time than that observed in most cows with "spontaneous" ketosis that received the same amount of cortisone. A fasting ketosis was evident in these 2 cases, but the cows appeared to be quite normal otherwise. This was to be expected, since much more severe fasting has resulted in a marked hypoglycemia and ketonemia but has failed to produce the signs and symptoms typical of "spontaneous" ketosis (*8*).

It might be postulated that cortisone cures ketosis in cows purely because of the marked hyperglycemic effect of cortisone on fasted cows. The gross and histopathologic changes observed in cows with ketosis indicate a pituitary and adrenal involvement, however. Also, when smaller doses of cortisone have been used, the physical appearance of the cow has shown definite improvement before blood glucose increased. For example, Cow 2 in Table 1 exhibited a complete recovery of appetite and disapperance of incoordination within 20 hr after treatment with 900 mg of cortisone, even though blood glucose did not increase appreciably until the following day.

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Parthenogenetic Reproduction in *Phytomyza plantaginis* R.-D., the Second Reported Case in the Family Agromyzidae (Diptera)

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Hering (*1*) reported reproduction without males in *Phytomyza crassiseta* Zett., having caged unfertilized females with their host plant, *Veronica* sp. From these he obtained more females. He pointed out that it is exceptional to find a male in north Germany, whereas in south Europe the natural population consists of about 50% males.

Hering found it difficult to explain why parthenogenesis had not been found in the closely related *P. plantaginis* in Europe. Frost (*2*) mentions both sexes in describing the species from eastern North America. However, when the writer found that 125 adults reared from larvae mining the leaves of *Plantago lanceolata* L. in central California proved to be females, he set up a laboratory experiment to test the possibility of parthenogenetic reproduction in this species.

A specimen of plantain, free of larvae of the leaf miner, was transplanted into a gallon jar. Forty-six females, all reared from pupae obtained from Santa Cruz, Calif., and examined for sex, immediately upon emergence were introduced into the jar. After about 10 days a large number of mines appeared on the leaves. From these, 13 females were obtained, in addition to numerous larvae and pupae that were killed and preserved. The 13 females were then introduced into another jar containing plantain, from which 8 larvae were obtained. The experiment had to be terminated at this point.

A preliminary study of the reproductive system of those females producing viable eggs has shown the spermotheca to be present, indicating the possibility of fertilization in the presence of males. A study of the morphological basis for this phenomenon will be reported in another paper.

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Observations on the Apparent Failure of Beer's Law Near the Transmission Limit of a Solvent

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A recent paper by Ungnade, Kerr, and Youse (*1*) reports variations in the extinction coefficient of phenol with change in solute concentration, which the authors ascribe to a failure of Beer's law. They obtained log ε values of 3.00 to 3.68 (ε = 1,000 to 4,790) for the 218–219 mμ primary (*2*) band, and a shift in the maximum to 225 mμ at the highest concentration. Since deviations of this magnitude are not usual in spectrophotometric practice, observations were made on the compound to investigate the response of our own Beckman spectrophotometer under the given conditions.

Solutions of phenol in 95% ethanol were prepared over the concentration range employed by Ungnade, Kerr, and Youse, and the absorption curves were determined, using a constant slit width of 1.0 mm through the maximum of the primary band. Variations in the absorption of this band were generally like those observed by Ungnade, Kerr and Youse—namely, a substantial decrease in intensity and an apparent shift of the maximum to 222 mμ. However, the extinction coefficient of the secondary band maxi-