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An Epizootic among Laboratory Stocks of the Desert Locust, *Schistocerca gregaria* Forsk

D'Herelle[1] isolated a small Gram-negative bacillus from dead or dying *Schistocerca pallens* Thunb. in Yucatan, Mexico. He considered this organism, which he named *Coccobacillus acridiorum*, to be the etiological agent of a highly virulent disease which was responsible for widespread destruction of locusts in this region. Although he claimed success in locust control by means of the organism, other workers were less successful and the method was finally abandoned. Later, there was some confusion as to the true identity of *Coccobacillus acridiorum*; but Steinhaus[2] states that it is probably related to *Aerobacter aerogenes*.

The Anti-Locust Research Centre, London, recently reported an epizootic among laboratory stocks of *Schistocerca gregaria*, Forsk, in which mortalities were often as high as 80–90 per cent per cage, although not all cages were affected. Ante-mortem, the condition is difficult to distinguish in a crowded cage until shortly before death, when the insect becomes moribund with spasmodic twitching of the appendages. Post-mortem, the integument darkens and the eyes become a deep red; the abdomen and appendages are extremely flaccid and the viscera a viscous mass.

In our experiments the typical disease was found to be serially transmissible by intrahæmocœlic inoculation of healthy locusts with tissue suspensions prepared from dead insects. No evidence of a virus etiology could be found; Seitz and 'Gradocol' membrane (0·70 μ) filtrates of infective tissue suspensions were innocuous. On the other hand, a bacterial etiology was suggested by the facts that blood cultures taken shortly before death almost invariably yielded pure cultures of a Gram-negative organism, and that after death smears of blood or tissue showed Gram-negative bacilli in very large numbers.

There is strong evidence that a non-lactose-fermenting Gram-negative bacillus is the etiological agent of this epizootic disease. Such an organism has been isolated from every case of the typical disease, but in only one of 150 healthy locusts was it found. Intrahæmocœlic inoculation of less than ten of these organisms invariably produces death. Locusts fed on food sprayed with broth cultures of the bacillus showed mortalities of 70–90 per cent, and the cannibalization after death by healthy locusts of insects inoculated with the organism was sufficient to start an epizootic disease giving rise to a similar mortality-rate.

The identity of the organism has not yet been established, though it is probably a paracolon. It seems possible that the organism originally isolated by D'Herelle may resemble the causative agent of the disease briefly reported here, and that D'Herelle's organism was afterwards confused with other strains. A second Gram-negative lactose-fermenting bacillus was often isolated from dead locusts; but on only one occasion was it isolated from a sick locust prior to death. Massive doses of this organism are needed to kill, and feeding experiments result in mortalities similar to those resulting from the feeding of food sprayed with sterile nutrient broth (namely, 5–20 per cent). This organism, which is probably *Aerobacter aerogenes*, can regularly be isolated from the gut, and must be regarded as a normal member of the gut flora.

It is hoped to publish detailed results of this work in the near future.

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Conception in Prepuberal Mice following Artificially Induced Ovulation and Mating

Superovulation in prepuberal mice is a recommended procedure for obtaining unfertilized mammalian ova[1]. Experimental results[2] have indicated that, after fertilization, these ova approximate to the viability of ova from spontaneous ovulations.

In previous studies, fertilized eggs were not obtainable from prepuberal donors since sexual receptivity did not accompany ovulation. The present report demonstrates that administration of gonadotropic hormones can be followed by ovulation, mating and conception. Since, however, conception in prepuberal mice has seldom led to pregnancy, fertilized eggs from these animals have been transplanted into mature recipients. Such eggs have developed into viable young.

Mice approximately 35–40 days old were given a priming injection of pregnant mare's serum, 1 I.U. 60 hr. before the desired time of ovulation. An ovulatory injection of human chorionic hormone, 1 I.U., was given 13 hr. before the desired time of ovulation. Observations upon conceptions in prepuberal mice are given in the following experiments.

These injections were administered to 37 female mice (Table 1, *A*); strain 129; 34–41 days old; 12–17 gm. in weight. At the time of the ovulatory injection (4.30 p.m.), each female was caged with an adult male. The following morning, 34 of the 37 females (92 per cent), showed evidence of having mated (that is, presence of vaginal plugs). The 34 females were subjected to laparotomy at 32 hr. after

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