

Table 1. RESULTS OBTAINED BY SUBJECTING THE EGGS TO 0° C. FOR 3 HR.

Time of treatment after insemination	Total eggs treated	Survival up to lens formation	Analy-sable	Haploid	Di-ploid	Tri-ploid	Mosaic
3 min.	514	42	27	0	1	18	8
5 "	465	131	86	0	49	22	15
10 "	226	7	7	0	0	0	7
15 "	85	45	38	17	14	1	6

Table 2. RESULTS OBTAINED BY SUBJECTING THE EGGS TO 0° C. FOR VARYING PERIODS, ALL BEGINNING 3 MIN. AFTER INSEMINATION

Duration of treatment	Total eggs treated	Survival up to lens formation	Analy-sable	Haploid	Di-ploid	Tri-ploid	Mosaic
½ hr.	101	42	40	7	24	0	9
1 "	111	36	30	2	18	1	9
1½ "	132	40	31	2	3	18	8
2 "	55	25	19	1	3	7	8
2½ "	96	11	11	0	2	6	3
3 "	514	42	27	0	1	18	8

rearing of embryos up to yolk absorption. The young diploid and triploid fish kept in the aquaria have by now reached two-third adult size.

All chromosome counts on embryos were made on squash preparations of whole embryos shortly after lens formation; those of later stages were carried out on squash preparations of the conjunctiva of one eye without killing the fish since the wound heals within a short time.

This work was done under the supervision of Dr. M. Fischberg, to whom I am grateful for his constant help and encouragement.

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Sept. 5.

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Further Observations on the Blood Factor Di^a

IN a previous communication¹ we remarked that the blood factor Di^a promised to be of great anthropological interest: it might prove to be a Mongoloid characteristic. Since then we have, on one hand, found it in a second northern Indian tribe—the Crees of northern Manitoba—three Di(a+) out of thirty-five, and on the other hand in none of thirty-five American Negroes, while Dr. Layrissé tells us that he has tested a number of Nigerians without finding any positive. It looked, indeed, as if Di^a were a Mongoloid 'marker', so it came as a surprise when we found no Di(a+) among 156 Eskimos.

Both the Cree Indians and the Eskimos were patients in tuberculosis sanatoria. Since the frequency of the factor in these Crees was essentially the same as in the neighbouring healthy Chippewa it would not seem that there could be any relationship between the facts that the Eskimos had tuberculosis and that they were all Di(a-). The use of sanatorium populations has the advantage that the patients come from many small populations scattered over a wide area and in this sense represent a random sample of the general population of that area. Laughlin² has pointed out the variations that occur in the blood-group gene frequencies in smaller and larger isolates among the Eskimo. We think the sanatorium method of sampling should give a true overall picture. The Eskimos tested were all from the eastern Canadian arctic, which includes Hudson Bay, Baffinland and Labrador. We hope to extend these studies to the western arctic.

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Sept. 13.

¹ Lewis, M., Ayukawa, H., Chown, B., and Levine, P., *Nature*, **177**, 1084 (1956).

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Bacteriological Studies of 'Infected' and 'Uninfected' Chicks in Relation to Antibiotic Growth Stimulation

COATES *et al.*¹ described an infective growth-depressing condition in premises where chicks had been reared for some time. The condition was counteracted by penicillin in the diet, and was not present in clean premises where chicks had not previously been kept. Work on the relationship between *Clostridia* and antibiotic growth stimulation has been critically reviewed by Jukes².

In our investigation of the so-called infection, the gut flora of chicks from clean and infected premises was examined during the first few days of life; a gut flora similar to that of adult birds was found in chicks two days after they began to feed³. Spores of *Clostridium welchii* type A were found in the caeca of chicks from the infected premises one day after feeding, but not in those from the clean environment. Total counts made in series with spore counts showed that *Clostridia* are one of the most numerous components of the developing gut flora of the chick.

In further experiments the infected premises were thoroughly cleaned and redecorated, and the first batch of chicks placed therein was examined. *Cl. welchii* was not found in these birds, but was present in the caeca of chicks from the original clean premises. The chicks from the original clean quarters were infected, that is, their weights were depressed, in comparison with the weights of chicks from the redecorated premises. Subsequent batches of chicks placed in the redecorated premises showed growth depression compared with penicillin-fed controls, and also *Cl. welchii* in their caeca. Thus the presence of *Cl. welchii* in the caeca of chicks one day after feeding indicated 'infection'.