This means that a difference of the order of 0·05 could be enough to balance the loss of the gene M.

In practice, it is difficult to measure 'fitness'. A direct measure is given by the ratio of the proportion of a genotype among parents to that among offspring (Penrose[6]). In this way, we obtained a rough estimate of the actual values of fitnesses in our populations (Table 2).

Table 2

Genotype	Frequency among 5,904 parents (a) (per cent)	Frequency among 10,355 offspring (b) (per cent)	Direct estimate of fitness (a/b)	Theoretical value for equilibrium
mm	89·9	89·5	1·004	0·997
Mm	10·1	9·8	1·031	1·053
MM	0·0	0·7	0·000	0·000

From this table it may be seen that, although it is not possible to demonstrate the significance of the difference in the fitness values between the two genotypes *Mm* and *mm*, this difference is in the right direction and of the right order of magnitude.

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Formation of Nitrite from Oximes and Hydroxylamine by Micro-organisms

IT has recently been shown[1] that a number of micro-organisms can form nitrite from various oximes, although the mechanisms involved have not yet been elucidated. We have now established that some organisms capable of forming nitrite from oximes (for example, *Alcaligenes*, *Corynebacterium equi*, and strains of *Nocardia corallina*) can also form nitrite from hydroxylamine if the hydroxylamine is added in sufficiently low concentrations to washed suspensions of the cells. Typical results are shown in Table 1. Nitrite formation from both hydroxylamine and pyruvic oxime was inhibited by hydrazine over the range $M/100$–$M/1,000$ hydrazine, but not by $M/1,000$ thiourea or allylthiourea.

These results suggest that both hydroxylamine and pyruvic oxime may be converted to nitrite in these organisms by a similar path. They also suggest that this path may resemble that involved in the formation of nitrite from hydroxylamine in *Nitrosomonas*, where a mechanism of formation sensitive to hydrazine but insensitive to thiourea or allylthiourea is also known to occur[2]. Further details about this mechanism are not, however, available, simply because

Table 1. THE FORMATION OF NITRITE BY WASHED SUSPENSIONS OF *Nocardia corallina* (STRAIN K 6).
Cells washed with, and suspended in, $M/30$ phosphate buffer, pH 6·5. Final volume, including all additions, 3 ml. Incubated for 2 hours at 25° with constant shaking. Cell density, 10 mgm. per ml. (approx.)

Hydroxylamine or pyruvic oxime initially present (μmol.)	Nitrite (μmol.) formed during incubation from Hydroxylamine	Pyruvic oxime
6	0·45	2·1
3	0·60	1·7
1·5	0·36	0·41
0·75	0·15	0·18
0	0	0
3*	0	0

* Boiled cell suspension.

Nitrosomonas is so difficult to culture in adequate quantity.

Heterotrophic oxime-oxidizing organisms are, on the contrary, very easily cultured. We therefore intend to study the mechanisms whereby these organisms oxidize hydroxylamine to nitrite. We hope these studies will shed some light on the mechanism of the same process as carried out by the autotrophic *Nitrosomonas*.

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Electrophoretic Behaviour of Hyaluronidase

WHILE the role of hyaluronidase seems to be understood from the biological point of view, there is little information about the constitution and chemical properties of this enzyme; this is due, indeed, to the great difficulty in preparing and purifying the enzymic fraction from the 'mucopolysaccharase complex'. Even in the Hahn[1] procedure, which gives highly active preparations, the so-called purified material is not at all homogeneous as judged by its behaviour in the electrophoresis apparatus and in the ultracentrifuge.

The present communication describes preliminary results of the fractionation of hyaluronidase preparations by filter-paper electrophoresis, in view of the special advantages of filter-paper electrophoresis for studying the enzymic properties of some proteins.

The technique was essentially that of Durrum[2], using bromophenol blue as stain. The hyaluronidase used for this investigation was prepared from bull testicles by the method of Favilli and Bergamini[3]; in some experiments, Vister hyaluronidase ('Jalovis', for which I am indebted to Prof. Soldi, of the Vister Laboratories) was employed. In the electrophoretic pattern of the hyaluronidase preparations, four distinct components with different mobilities were observed; in order to determine which of the four components was enzymically active, the portion of the paper strip containing each component was cut out after a run, eluted by the same buffer, and tested for hyaluronidase activity by the turbidimetric technique[4]. Before eluting from the paper strip, a thin

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