the homotransplantation reaction, we tried to find another explanation. It was assumed that the transferred cells differentiate in the recipient's body and that antibody production is determined by the lifespan of those differentiated cells incapable of further proliferation; another possible explanation was that the antigen was used up during the formation of antibodies and that the transferred cells, though capable of antibody response, do not produce antibodies because of the absence of antigen.

After the transfer of cells, antigen was injected into individual groups of ducklings at different time-intervals; one of the results is given in Fig. 2. The formation of antibodies evoked by antigen administration (at the period in which active antibody response to antigen is not yet developed in ducklings) indicates the presence of transferred cells capable of reacting to antigen even at that time when the spleen cells from immunized donor or cells mixed with antigen *in vitro* and transferred to ducklings cease to produce antibodies (Fig. 1). The decrease in antibody formation by transferred cells may be explained by the absence of antigen.

These findings show that transfers to non-reactive recipients may be used for determining the importance of the presence of antigen for antibody formation.

Further details will be published elsewhere⁵.

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Antiviral Activity of Lysozyme

THE biological significance of lysozyme is not yet fully established. Its properties suggest that it has a role in immunism against bacterial infections. Lysozyme also seems to show antiviral activity. Previous observations support this possibility.

Macfarlane Burnet¹ observed that nasal mucus inactivates poliomyelitis virus of any type *in vitro*; on the other hand, however, pure lysozyme did not. Caselli and Schumacher² demonstrated antagonism between lysozyme and electronegative viruses. Orzalesi³ obtained very satisfactory results in the treatment of herpetic keratitis with lysozyme and observed the inactivation of herpetic virus by lysozyme *in vitro*.

Pursuing this line of research on the relationship between lysozyme and viruses, some interesting results have been obtained in our laboratories. *In vitro*, we observed that lysozyme precipitated bacteriophage viruses and *in vivo*, in guinea pigs experimentally infected with aphthosis virus, we obtained good results with the administration of lysozyme in 80 per cent of the animals.

Callerio observed a constant reduction of serum lysozyme in poliomyelitis patients, but some therapeutic trials with this enzyme were confusing. A communication from A. D. Ronchese of Nice, stating that he has obtained recovery in four cases of herpes

zoster by oral treatment with lysozyme, induced us to extend our clinical observations⁴.

Many Italian dermatologists have tried the administration of lysozyme by parenteral route in several virus diseases.

Lysozyme, in adequate dosage, has been shown to be effective in the treatment of viral infections such as herpes simplex, herpes zoster, warts, condylomata acuminata, aphthosis and vaccinia. These results need further confirmation, however, so that the antiviral spectrum of lysozyme as well as its real value in the therapy of viral diseases may be definitely established.

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BACTERIOLOGY

Decomposition of Anionic Surface-Active Agents by Soil Bacteria

IN a review of water pollution problems created by the persistence of anionic surface-active compounds in sewage and sewage effluents, Southgate¹ has pointed out that sodium alkyl sulphates are more susceptible to biological degradation than the alkyl benzene sulphonates which are active constituents of some domestic detergents. This resistance of the alkyl benzene sulphonates of commerce to biological oxidation has been attributed to the branched carbon atom chains of their alkyl groups. On the other hand, the alkyl sulphates in common use have, fortuitously, alkyl groups with straighter carbon chains more readily oxidized by micro-organisms². Although some bacteria attacking anionic compounds have been reported³, there is very little published information on bacteria responsible for breaking down even the more easily decomposable compounds.

This communication records the isolation of a bacterium able to use both primary and secondary alkyl sulphates as carbon sources. This organism developed from a sample of allotment soil which had been incubated at 25°C. for two weeks with water containing a trace of 'Teepol 530', a secondary alkyl sulphate. After further cultivation in a buffered mineral salt solution ($(\text{NH}_4)_2\text{SO}_4$, 0.5 gm.; K_2HPO_4 , 6.5 gm.; KH_2PO_4 , 3.5 gm.; CaCl_2 , 0.05 gm.; $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$, 0.05 gm.; NaCl , 1.0 gm.; distilled water, 1 litre; pH 7.0) with 0.1 ml. 'Teepol' per litre, the organism was isolated from plates of the same medium solidified with 1.5 per cent agar.

Cells of this isolate are aerobic, Gram-negative rods, 0.6–0.7 μ $\times$ 0.6–2.2 μ , with polar flagellation. Only in very young cultures are all the cells vigorously motile. On nutrient agar prepared from fresh ox heart extract and peptone, a trace of greenish fluorescent pigment appeared in the medium; but little or no such pigment formed in media made from commercial meat or yeast extracts. Acid but