for the first time, throughout the allelism tests. A further step is reached when allelism frequency drops down to control values, also. Nevertheless, there are indications that a small amount of newly induced lethals remains incorporated even when all these frequencies appear to be equal to non-irradiated populations.

Zusammenfassung. Eine isolierte natürliche Population von *Drosophila willistoni* erhielt während eines Jahres eine beträchtliche Beimischung von F_1-Co 60-bestrahlten Fliegen. Die genetische Analyse ergab, dass die Häufigkeit der letalen und semiletalen Allele nach 5 Generationen rasch wieder auf das Normale sank. Die Frequenz der Letalallele war allerdings noch hoch, gleich hoch wie in der in Massenkultur gehaltenen bestrahlten Zucht. Erst nach 15 Generationen sank sie zum Niveau der natürlichen Kontrollpopulation. Einzelne durch Bestrahlung erhaltene Letalallele blieben in der Population erhalten.

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Paradoxical Findings in Ouchterlony Tests

Ouchterlony's 'reaction of identity' in agar gel diffusion precipitation tests is sometimes misleading[1]; whenever such a reaction is obtained, it should be carefully evaluated. Diffusion of precipitins present in extracts of *Ricinus communis* or *Abrus precatorius* seeds, and in horse antiserum specific for type XIV pneumococcus, against a 1/1000 (w/v) aqueous solution of purified type XIV pneumococcus polysaccharide results[2] in the formation of a single continuous precipitation line (Figure 1); therefore it may be concluded that the precipitins in the horse serum and the seed extracts are identical. However, in view of the heterogenous origin of the precipitating reagents, the 'reaction of identity' should not be accepted entirely at its face value.

Extracts of *Ricinus communis* or *Abrus precatorius* seeds agglutinate the erythrocytes of many animal species and form precipitates with their sera[3]; it is believed that the structure which reacts with the seed principle is present both on the erythrocyte surface, and, in soluble form, in the sera of these animals; one such animal is the horse. Thus it would appear that horse anti-XIV serum contains both a precipitin identical with the seed precipitins, as well as the structure specifically precipitated by the seed reagents. This paradox requires explanation.

The 'reaction of identity' (Figure 1) is obtained by using horse anti-XIV serum in a dilution at which it does not form precipitates with the seed extracts, but can still strongly precipitate the type XIV polysaccharide. When the undiluted serum is used instead, a 'reaction of partial identity' is obtained (Figure 2); this probably occurs because the precipitate formed by the pneumococcus polysaccharide and the anti-XIV serum is slightly deflected in an effort to join up with the precipitate formed by the seed extract and the antiserum. In view of the fact that the two precipitating reagents react with one another, it would be better not to attempt to interprete the precipitation pattern obtained under these circumstances (Figure 2), but to accept the 'reaction of identity' which was obtained when the two precipitating reagents did not precipitate each other (Figure 1). Moreover, it can only be claimed that the 'reaction of identity' indicates merely that the seed and serum precipitins precipitate the same molecules, and not that the precipitins are chemically identical.

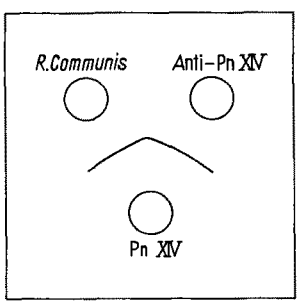

Fig. 1

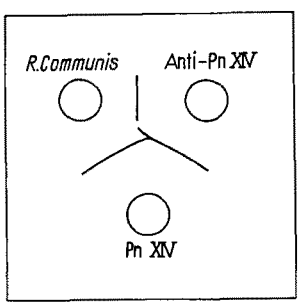

Fig. 2

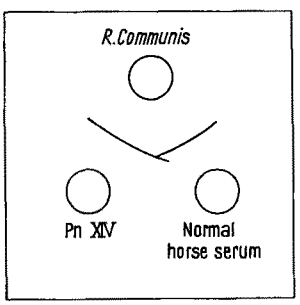

Fig. 3

The 'precipitinogen' in horse serum is in fact related to type XIV pneumococcus polysaccharide. When a sample of normal horse serum, which does not contain anti-XIV antibodies, is allowed to diffuse against the type XIV polysaccharide, and either *Ricinus communis* or *Abrus precatorius* seed extracts, a 'reaction of partial identity' is obtained (Figure 3). Nevertheless, anti-XIV antibodies appear in horse serum after immunisation with pneumococcus type XIV; they are thus highly specific and probably combine with some part of the type XIV pneumococcus polysaccharide molecule which is not common to the partially-related substance in horse serum. The seed precipitins probably combine with another part of the type XIV polysaccharide molecule. Whatever the explanation may be, the precipitins of *Ricinus communis* and *Abrus precatorius* seeds, when considered in relation to a system of pneumococcal polysaccharides, appear to be specific for type XIV pneumococcus polysaccharide[2]. Extracts of *Ricinus communis* and *Abrus precatorius* seeds could thus be used in selected serological studies as substitutes for horse antipneumococcus XIV sera.

Zusammenfassung. Mit Präzipitationsversuchen im Agargel wird gezeigt, dass Präzipitine aus *Ricinus communis*- oder *Abrus precatorius*-Samen und die spezifischen Anti-Pn XIV-Präzipitine des Pferdeserums mit verschiedenen Seitenästen der Strukturformel von Pn XIV-Kapselpolysaccharid reagieren können.

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Armed Forces Medical College, Poona (India), December 21, 1960.

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[3] R. KRAUS, cited by W. W. FORD, Zbl. Bakt. I Abt. Ref. *58*, 129 (1913).