

SCIENTIFIC PROCEEDINGS.

ABSTRACTS OF COMMUNICATIONS.

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134 (1716)

Variations in the streptolysin curve in serum media.

By **FRANKLIN A. STEVENS** and **CLIFFORD L. LAMAR.**

*[From the Medical Clinic of the Presbyterian Hospital,
Columbia University, New York City.]*

In the growth of hemolytic streptococci in serum media, the hemolysin, titrated from hour to hour, shows a gradual ascending curve of concentration which reaches a maximum at about the sixth to the twelfth hour of growth, and then falls rapidly. This curve may be modified by the character of the culture used to seed the media, by the quantity of serum present, the source of the sera, and the amount of peptone in the broth. There are two variations which occur; variations in concentration of hemolysin, and in the time that hemolysin first appears in the culture and later the time at which the maximum amount can be demonstrated. With similar seeding, and only one variant introduced in experiments, these variations are brought out very sharply. Cultures in 20 per cent. rabbit serum and horse serum in broth without peptone show that rabbit serum media allows the production of the lysin sooner and does not give as great concentrations as horse serum. The lower percentages of these sera, when seeded with different plain broth cultures give greater variations in the maximum titre, but these variations are largely obviated in 20 per cent.

media. Twenty per cent. horse serum gives practically constant titres at some time during the growth. The time relationships hold in all concentrations. Peptone (2 per cent.) slightly increases the titre and gives identical titres in 20 per cent. horse serum, and brings the variations within closer limits in rabbit serum media. The time relationships are directly dependent on the growth of the streptococci, so that the delay in lysin production in horse serum indicates a lag in the rate of multiplication during the early hours after seeding. Variations in the nature of the seeding can be obviated by seeding from a 20 per cent. horse serum broth in 2 per cent. peptone, in which all streptococci of human origin, whether virulent or avirulent, reach the same condition in regard to growth and number at the end of 16 hours, unless agglutination occurs.

135 (1717)

**The failure of rats to develop rickets on a diet
deficient in Vitamine A.**

By **A. F. HESS, G. F. McCANN** and **A. M. PAPPENHEIMER.**

*[From the Department of Pathology, College of
Physicians and Surgeons, New York.]*

The fat-soluble vitamine, or a vitamine closely associated with it, is regarded by some as being equivalent to an antirachitic vitamine; the development or non-development of rickets is thought to be dependent mainly on the absence or presence of this factor. In a previous report one of the writers has stated it to be his opinion that this relationship does not hold true for human rickets. The following experiments were planned to ascertain whether a diet markedly deficient in this vitamine led to the development of rachitic lesions in young rats; for this purpose rats weighing about 30 g. were put on a diet of extracted casein 21 per cent., rice starch 57 per cent., salt mixture 5 per cent., Crisco 17 per cent., yeast extract (Osborne and Wakeman) 60 mg. a day. The casein was extracted by means of ether and