average fall of pressure in a large series of experiments was 258 mm. normal saline. The changes were roughly proportionate to the concentration of the salt and the size of the dose. Two per cent. sodium chloride solution in large doses or a saturated solution in doses as small as 5 c.c. gave corresponding though less marked effects. Non-absorbable salts gave similar reductions though slower in occurrence and less in extent. Dextrose solution caused still less striking results though identical in nature.

The converse results seen after the ingestion of hypotonic solutions (water) were not great in extent nor well sustained. A previous dose of a hypertonic solution rendered more extensive the rise of pressure in these cases.

The changes observed were independent of blood pressure and were not attended by significant alterations of pulse or respiration.

These effects on cerebrospinal fluid pressure and brain volume were investigated in patients. An excellent opportunity for this was afforded by patients with brain tumor and cerebral herniæ subsequent to decompression operations. In these patients there was a lowering of tension when hypertonic salines were given by mouth. Occasionally very striking results could be obtained in which case the tense convex protrusion became a soft concave area over the decompression site.

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Some results with a new technique in vitamine measurement.

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By means of a technique described in detail in the March, 1920 number of the PROCEEDINGS certain results have been attained that seem to indicate the specifity of the test for the "B" vitamine. These results are briefly as follows:

(*a*) Application of the test to three specimens of Funk's antineuritic vitamine prepared in 1912 and '13 showed that the

two 1913 preparations were active, though one was markedly more so than the other, and that the 1912 preparation was inactive. These specimens were supplied by Dr. Funk and represent the products of greatest purity as obtained by his fractional precipitation method. The only known impurity present was nicotinic acid and pure synthetic nicotinic acid failed to respond to the test.

(*b*) Lloyd's reagent was shown by Seidell and Williams to remove the B vitamine and by Harden and Silva to have little if any action upon the C vitamine. This point was tested with the new method and orange juice obtained by sterile puncture was shown to be deprived of its powers of responding to the test by shaking with the Lloyd reagent. This showed that the reagent removes the cause of the test reaction. Through the kindness of Mr. La Mer working in Professor Sherman's laboratory orange juice shaken with the Lloyd reagent and then filtered, was used in the treatment of a guinea pig suffering from scurvy. The filtrate was curative in fifteen days. It was also used as a protective agent in the diet of a pig started on a scurvy-producing diet. The symptoms had not appeared in twenty days. From these two experiments we can conclude that the test is not affected by the C vitamine and that the cause of the response is removed by Lloyd's reagent. The power of the Lloyd reagent to remove the cause of the test was confirmed by experiments with other vitamine extracts. Such experiments are not conclusive evidence but since the effects are so striking and the Lloyd has been demonstrated to remove the B type they seem to justify the belief that the causative agent in the test is the anti-neuritic or water voluble B vitamine.

(*c*) Results were also presented showing that the test is applicable to blood. Specimens of blood plasma furnished by Dr. N. R. Blatherwick representing bloods from the jugular and the mammary veins of a cow were poured into alcohol, the alcohol filtered off, evaporated to dryness and the residue taken up with enough water to restore it to the original plasma volume (10 c.c.). Repeated tests showed the mammary vein plasma residue to be markedly richer in the B vitamine than that from the jugular veins, indicating drainage from a mobilizing (?) point of the vitamine.

Aside from the particular interest in the bloods examined, the sensitiveness of the test to amounts present in blood suggests the use of the test in localizing the distribution of the substance in the blood streams and possibly in pellagra investigations etc.

(*d*) The value of the test in comparisons of vitamine concentrations was demonstrated and the point made that there is an optimum amount which must first be established by diluting the extracts studied. Below this optimum amount the test varies approximately with the concentration. Amounts above the optimum cannot be detected except by this method of applying the test. By such a method it was shown that autoclaving for three hours at 15 lbs. and approximately 120° temperature produces some destruction of the vitamine. Alkali was shown to be definitely destructive in concentrations of N/20 to N/40 NaOH. Concentration lower than N/40 seemed to have little effect.

(*e*) The results of applying the test to water extracts of some ten sources of the B vitamine confirmed the feeding experiments with these substances.

The detailed counts upon which these conclusions are based were presented but need not be recorded here.

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Dietaries of infants in relation to the development of rickets

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For the past two years we have been observing the effect of various diets on the development of rickets in infants. The babies received orange juice to exclude the possibility of latent scurvy. All have been on the diet for at least six months, and were followed clinically as well as controlled by means of the X-ray. It was found that many diets supposed to be eminently conducive to rickets resulted in normal nutrition. Condensed milk, for example, only exceptionally induced rickets. The one food which almost regularly led to marked rickets was a "protein milk" prepared by precipitating buttermilk with heat (not with rennin).