any causal relation between the two pathological processes exemplified in this instance is a point upon which we have insufficient data for a positive statement.

A more detailed account of the case will be published later.

26 (1090)

Equilibrium in the precipitation reaction.

By RICHARD WEIL.

[*From the Department of Experimental Medicine of Cornell University Medical College.*]

On the basis of experiments performed with horse serum, and similar antigenic substances, it has long been held that precipitation produced by antigen and antibody never goes on to completion, but that both factors are always present in the supernatant fluid. This has been explained by some as an instance of the law of mass action, by others on the basis of certain analogies of colloidal chemistry.

If a pure substance, such as crystalline egg albumen, separated by Hopkins's method, be used as antigen, the results are quite different. When mixed in proper proportions with its antiserum a precipitate is formed; the supernatant fluid never contains both reactive substances. The results hitherto obtained are due, therefore, to a fallacy of technique, and are traceable to the presence of multiple individual antigens in the antigenic substance employed, with a corresponding multiplicity of antibodies in the antiserum.

27 (1091)

Equilibrium in the dissociation of precipitates.

By RICHARD WEIL.

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Chickering found that sodium carbonate extracts of a precipitate, produced by a mixture of pneumococcus substance and its antiserum, contained agglutinating and protective antibody, but

no antigen. If precipitates produced by the combination of horse serum, or egg albumen, and their respective antiserums, be treated with salt solution, or with 1 per cent. sodium carbonate, the resulting extract always contains antigen. It also contains passively sensitizing antibody, but no precipitin.

If such a precipitate be treated with trypsin, or with rabbit's leucocytes, both antigen and precipitin are present in the extract. Sensitizing antibody is also demonstrable.

28 (1092)

Studies on so-called protective ferments—IX. Antitryptic index in its relation to the clinical manifestations of anaphylaxis.

By J. BRONFENBRENNER.

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The convulsions in eclampsia and epilepsy, as well as the respiratory failure in asthma have been repeatedly considered as an expression of anaphylactic reaction, though no definite proofs were offered for such a view. The theory of specific parenteral digestion of Vaughan, as applied by Abderhalden and his pupils to diagnosis of different pathological conditions, brought forward new possibilities of investigation in this direction.

According to results obtained by means of Abderhalden reaction many authors concluded that the patients, suffering from the conditions mentioned above, show active specific parenteral digestion of different tissues, as evidenced by the presence of specific proteolytic ferments in their blood.

As I have shown it elsewhere,[1] this conception of the mechanism of parenteral digestion is not correct. The results obtained by means of the Abderhalden reaction are nevertheless of value as they show t at certain specific changes have taken place in the blood[2] of the patients, by means of which the specific parenteral

[1] Bronfenbrenner, these PROCEEDINGS, 1914, XII, p. 3, and 1915, XII, p. 137; also *Journ. Exp. Med.*, 1915, XXI, p. 221.

[2] According to investigations conducted in this laboratory and confirmed elsewhere, the changes consist in the appearance in the blood of specific antibodies (in this case autolytic in nature) and not specific ferments.