amount, and then two additional stitches are taken to maintain this degree of constriction.[1]

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Studies on the nature of biological specificity.

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Our previous immunological studies[2] with the split products of casein and a compound of casein with protamin, which were undertaken for the purpose of gaining some insight as to the nature of biological specificity have apparently been fruitless in so far as the main point at issue was concerned, with one exception. In our comparative studies of the antigenic properties of split paranuclein with paranuclein synthesized by the reversible action of pepsin from the products of peptic digestion, we were apparently able to demonstrate the genesis of an antigenic property.

The present study deals with the investigation of the antigenic

[1] About 3 weeks ago I received from Dr. Francesco Nassetti a reprint of a paper by him entitled "Avvolgimento di vasi Sanguigni con lembi liberi di aponeurosi," and published April 26, 1912, in the *Atti della R. Academia dei Fisiocritici in Siena*. Dr. Nassetti's experiments were made in the Istituto di Patalogia Speciale Chirurgica della R. Università di Siena, which is under the direction of Prof. A. Salomoni. His first experiment (a band of fascia about the carotid artery) antedates mine by 56 days, and his article appeared about three months before the publication by me of a brief account of my first experiments with spiral strips of aorta (*Johns Hopkins Hospital Bulletin*, July, 1912, p. 217). My first experiment (Apr. 29, 1912) was made 3 days after the publication of Nassetti's report. Hence the credit for the idea of wrapping blood vessels with bands of fresh tissue belongs, I am happy to say, to Italy, the country of the famous surgeon, Luigi Porta, who was, I think, the first to attempt the partial occlusion of an artery (the aorta). I have the impression that Porta used for this purpose a strip of diachylon plaster.

[2] Gay, F. P., and Robertson, T. B., *Jour. Exper. Med.*, 1912, XVI, 470; *Jour. Biol. Chem.*, 1912, XII, 233; *Jour. Exper. Med.*, 1912, XVI, 479.

properties of our second compound of casein with a non-antigenic protein, globin caseinate. We find that globin is non-antigenic and highly toxic, producing in guinea-pigs the typical symptoms and lesions of anaphylaxis. When compounded with casein, it still remains slightly toxic. An anti-serum derived by repeated injections of rabbits with globin caseinate contains fixation bodies for casein, globin caseinate, and, curiously enough, for globin, although globin alone does not produce such antibodies. By absorption experiments it may be shown that the antibodies in anti-globin caseinate serum are two in number, one for casein and one for globin. Thus it appears that the change in globin brought about by this combination with casein renders it antigenic.

A further study of similar and of more complex compounded proteins should give further insight as to the nature of specificity.

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On the nature of oöcytin; the fertilizing and cytolyzing substance in mammalian blood-sera. (Preliminary communication.)

By T. BRAILSFORD ROBERTSON.

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I have elsewhere shown[1] that the agent in ox-serum which brings about the formation of fertilization-membranes in sea-urchin eggs[2] can be isolated in an impure condition by a process consisting, essentially, in precipitating the substance by barium chloride, re-solution of this precipitate in dilute acid, removal of the excess of barium by excess of sodium sulphate, and re-precipitation by acetone.

The preparations thus obtained were found to be contaminated by a considerable proportion of sodium sulphate, precipitated together with the fertilizing agent by the acetone. They also

[1] T. Brailsford Robertson, *Journal of Biol. Chem.*, XI, 1912, p. 339; XII, 1912, p. 163; *Arch. f. Entwicklungsmech.*, XXXV, 1912, p. 64.

[2] J. Loeb, *Arch. f. d. ges. Physiol.*, 118 (1907), p. 36; 122 (1908), p. 96; 124 (1908), p. 37; "Die chemische Entwicklungserregung des tierischen Eies," Berlin, 1909, p. 185.