anaphylactic response showed that the ability of spleen and bone marrow cells to induce anaphylactic response by transfer was about the same.

(2) Passive transfer of antibodies as a reason for reaction is not probable because (a) sensitized animals challenged on the sixth day did not show anaphylactic symptoms; (b) in this case unirradiated animals should have reacted also. This second reason seems to exclude direct antigenic stimuli of recipient animals if antigen were transferred together with cells from sensitized donor guinea pigs.

(3) The success of transfer seems to depend mainly on the possibility that the recipient animal rejects transferred cells. Failure to induce anaphylactic reaction is probably due to rejection of the sensitized cells before they can produce enough anti-horse serum antibodies. If the transferred cells have a better opportunity to colonize the recipient tissues and mature some days in them, the production of antibodies may be sufficient and an injection of horse serum can elicit an anaphylactic reaction. In this experiment the necessary conditions for successful cell transfer were obtained by irradiation.

(4) The number of cells necessary to achieve the anaphylactic state in irradiated recipient animals was evidently much smaller than in the case of normal recipient animals⁴.

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Agarophoresis and Immuno-electrophoresis of the Proteins of Gastric Juice

A NUMBER of authors have used paper and freely moving boundary electrophoresis for investigating proteins of gastric juice. We have tried to add to the results obtained by these methods by using electrophoresis in agar¹ and immuno-electrophoresis². With these methods, especially in the case of immuno-electrophoresis, we found that there exists a fundamental difference in the behaviour of acid and anacid gastric juices.

Agarophoresis. The electrophoretograms of fifteen anacid gastric juices (pH 4–7) of patients with histamine-resistant achlorhydria showed five protein fractions, the mobility of which corresponded to that of serum proteins (Table 1, Fig. 1a). In three anacid gastric juices where all subsequent portions contained free hydrochloric acid after stimulation by histamine, two additional zones faster than albumin were observed. The electrophoretic mobility of this pre-albumin is identical with that of crystalline pepsin.

Table 1. PROTEIN FRACTIONS OF GASTRIC JUICE AFTER ELECTROPHORESIS SEPARATION IN AGAR

Samples	Pep- sin 2 ×	Al- bumin	α_1	Globulins			γ
				α_2	β_1	β_2	
15 anacid gastric juice	—	15	—	7	15	15	12
3 anacid gastric juice	3	3	1	3	3	3	3
10 anacid gastric juice	10	10	2	8	6	10	—

Fig. 1. Electrophoresis in agar: a, anacid gastric juice; b, serum; c, acid gastric juice

Fig. 2. Immuno-electrophoresis: a, anacid gastric juice; b, serum; c, acid gastric juice

In ten acid gastric juices seven fractions including two pre-albumin zones of pepsin were noted (Table 1, Fig. 1c).

Immuno-electrophoresis. The proteins of 22 anacid gastric juices precipitated on immuno-electrophoretic plates by rabbit antihuman serum developed 3–10 precipitation lines (Fig. 2). Their location both in the direction of electrophoresis and of diffusion corresponded to the precipitation lines of blood serum. In the double diffusion test³ the albumin of the gastric juice gave the identity reaction with serum albumin. γ -Globulin reacted likewise with γ -globulin antiserum. The precipitation line of β_2 -globulin was only about 30 per cent determined, although a zone of strong density was observed in all gastric juices by simple agarophoresis. This indicates that in all anacid gastric juices besides β_2 -globulin, which is not precipitated by antihuman serum and thus differs immunologically from serum proteins, an inconstant serum β_2 -globulin in lower concentration is present.

The proteins of ten acid gastric juices were not precipitated with antihuman rabbit serum. It follows from our investigation on the influence of single components of gastric juice on serum proteins that the protein fractions lose their immunochemical properties by the action of the activity of pepsin and the acid medium in dependence on time.

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