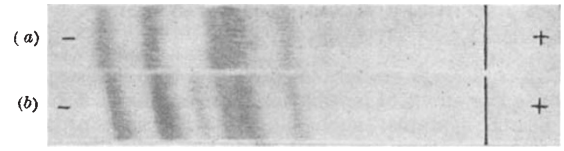

Fig. 2. Electrophoretic separation of neutral amino-acids from control (*a*) and 5×10^6 r. irradiated (*b*) lysozyme hydrolysate. Equal amounts of nitrogen content for both samples. 1,500–2,000 V.; potential gradient 40–55 V./cm. Running time 80–60 min. The fractions have been revealed with ninhydrin. *p*H 1·9 buffer; glacial acetic acid 15 per cent, formic acid 5 per cent in water

separation of the basic and the acid fractions, we eluted the neutral fraction from the paper. The amino-acids of this fraction have been separated again by high-voltage paper electrophoresis; Fig. 2 shows the results obtained in one of these pherograms.

It is of interest to note the occurrence of at least one single new compound between the neutral amino-acids of irradiated lysozyme.

From the results reported above it is evident that after irradiation of a protein like lysozyme the amino-acids are changed in some very complex way, for example, α-ketoacids and lactones of α-amino-acids have also been found in the hydrolysate of irradiated lysozyme.

Detailed results on the chemical composition of irradiated lysozyme, its physicochemical properties and its enzymatic activity will be published elsewhere.

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Prevention of Psychological Effects of *d*-Lysergic Acid Diethylamide (LSD 25) by its 2-Brom Derivative (BOL 148)

In view of the blocking effect often exerted by the close chemical analogue of a pharmacologically specific agent, we tried to determine whether the psychological symptoms induced by D-lysergic acid diethylamide (LSD 25) could be influenced by one of its psychologically inactive derivatives. The 2-brom derivative of LSD 25 (BOL 148) exerts no psychological effects[1].

Six volunteers who showed definite mental symptoms when given 50 or 75 μgm. LSD 25 in the preceding control experiment were pretreated with 2–3 mgm. BOL 148 by mouth daily for one or two days. On the day of the experiment they received one further mgm. BOL 148 1–3 hr. before LSD 25 (50–75 μgm.) was administered. Psychological symptoms were completely absent in those three cases who received two days pretreatment with BOL 148, and reduced to abortive and short-lasting changes in the other three cases who were treated only on the day preceding the experiment. The latter showed some subjective difficulty in concentration only, which could not be established objectively. In all cases, euphoria, depersonalization and all marked sensory symptoms observed in the control experiment did not appear.

In contrast, 0·5 mgm. or 1·0 mgm. BOL 148 injected intravenously in another four volunteers at the height of LSD 25 symptoms did not produce any noticeable or persistent changes in the symptoms of the LSD intoxication.

The fact that a substance closely related to LSD 25 can block the mental disturbances induced by it may throw some light on the mode of action of the drug.

We are indebted to Dr. H. Holgate, of Messrs. Sandoz Products, Ltd., for a generous supply of drugs LSD 25 and BOL 148.

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A Method for following Lipolysis induced by Heparin

The heparin clearing effect on postprandial lipæmic turbidity of blood serum has been demonstrated by Hahn[1]. Recently, it has been shown that heparin clearing is accompanied by the formation of a new electrophoretic component[2] and by an increase in free fatty acid[3]. That this process is of an enzymatic nature is now beyond doubt[4]. Since higher fatty acids are known to cause a depression of the second part of the polarographic protein double wave of albumin[5,6], the effect of heparin clearing on the polarographic behaviour of human blood serum was investigated because it has been shown that the polarographic effect of higher fatty acids on human blood serum can be accounted for only by the interaction of serum albumin with the fatty acids[6]. It was found that the intravenous administration of 0·5 ml. of 5 per cent heparin to six postprandial lipæmic humans as well as to six fasting subjects causes a marked depression of the second part of the polarographic protein double wave. Tables 1, 2 and 3 give the heights of the second wave in one individual which is representative of the entire group. In all cases the results were qualitatively identical.

Table 1

	Height of second wave in mm. (from cobalt wave)
Fasting	48
3 hr. after fatty meal	50
5 min. after 0·5 ml. of heparin *in vitro*	29
Fasting	58
5 min. after 0·5 ml. of heparin *in vitro*	44

Heparin added *in vitro* to blood serum does not show such an effect. The onset of the heparin effect is extremely rapid and its polarographic result can still be demonstrated in blood samples drawn 15 min. after heparin injection (Table 2).

Table 2

	Height of second wave in mm. (from cobalt wave)
Fasting	54
3 hr. after fatty meal	55
5 min. after 0·5 ml. of heparin *in vitro*	44
10 min. after 0·5 ml. of heparin *in vitro*	41
15 min. after 0·5 ml. of heparin *in vitro*	41

The technique of this procedure is extremely simple, consisting in taking a polarographic recording of a blood serum dilution 1 : 400 in Brdička's cobaltic solution (0·001 *M* $[Co(NH_3)_6]Cl_3$, 0·1 *M* NH_4Cl, 0·1 *M* NH_3). The effect of intravenous protamine