The adsorption on charcoal of organic compounds is, as is well known, much higher than that of inorganic ions, and consequently it was considered that an examination of the adsorption of rare earth organic complexes might yield interesting results, particularly if such complexes were coloured.

Several colour tests for the rare earths, individually and collectively, have been variously proposed; but for the initial work indicated here the violet *p*-phenetidine cerium complex of Wenger, Rusconi and Duckert[4] was employed. To a solution containing a few milligrams of cerium in the tetravalent state, saturated aqueous *p*-phenetidine was added and a small amount of decolorizing charcoal shaken with the violet-coloured solution produced; adsorption of the colour was immediate and complete, and after filtration the complex could be recovered from the charcoal by extraction with chloroform. To obtain the data indicated in the table below, the chloroformic extract was evaporated to dryness, ignited, and the residual oxide weighed.

Cerium oxide taken (mgm.)	Carbon used	Cerium oxide recovered (mgm.)
3·15	0·1 gm.	3·0
6·30	0·1 ,,	6·1
9·45	0·1 ,,	9·2
12·60	0·1 ,,	12·4
10 gm. La_2O_3 + 0·1% CeO_2	0·1 ,,	9·5
Control 10·0	0·1 ,,	nil

The applicability of this separation only being to the removal of small amounts of cerium from solution, a lanthanum nitrate solution containing 0·1 per cent Ce was treated by this method for removal of the cerium. Although actual recovery by this method is not exceptionally near theoretical, the efficiency as a method of removing traces of cerium occurring as impurities is excellent, as spectrographic examination showed complete absence of that element in the aqueous filtrates obtained in the first instances and in the lanthanum oxide produced in the final cases. As Botti has shown that adsorption of the rare earths on charcoal, although small, does occur, a control experiment was conducted in which the adsorption of tetravalent cerium ion was determined in the absence of the organic complex.

A more comprehensive study of this separation has been prepared, and will be published elsewhere, in which the efficiency of this procedure is confirmed and the application of the technique to other rare earths indicated.

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Adenosine Triphosphate in Mammalian Spermatozoa

THE presence of adenosine triphosphoric acid (that is, of readily hydrolysable phosphorus) in mammalian spermatozoa has been established by Ivanov and Kanygina[1] and by Lardy, Hansen and Phillips[2].

According to the findings of Ivanov and Kanygina[1] the content of adenosine triphosphate in sheep spermatozoa, obtained from the epididymis, varies within the limits of 12–30 mgm. of adenosine triphosphate phosphorus per 100 gm. of the contents of the cauda epididymis. The adenosine triphosphate content decreases under anaerobic conditions parallel with the decrease of motility of the spermatozoa. If aerobic conditions are provided for, or if glucose is added, the adenosine triphosphate content of the sperm cells returns to its initial value; simultaneously the spermatozoa resume their movements. Mann[3] has isolated adenosine triphosphate from sheep sperm and determined a number of constants characterizing this preparation.

We have studied the biological effect produced by adenosine triphosphate isolated from spermatozoa on actomyosin threads prepared according to Szent-Györgyi[4]. It was found that adenosine triphosphate isolated from pig spermatozoa provokes a marked contraction (by 40–60 per cent) of the actomyosin thread in a saline medium. It follows that adenosine triphosphate from sperm cells seems not to differ, in respect of its ability to react with actomyosin in the presence of potassium and magnesium salts, from adenosine triphosphate isolated from muscle.

It should be noted, however, that if a solution of muscle adenosine triphosphate is added to spermatozoa obtained from the epididymis which have lost their motility under anaerobic conditions, no resumption of the movements of the spermatozoa is observed. The last-mentioned experiments were usually made in the presence of monobromacetate, which does not interfere with the dephosphorylation of adenosine triphosphate but blocks the anaerobic decomposition of carbohydrates with the formation of lactic acid.

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Action of Prostatic Secretion on the Motility and Metabolism of Spermatozoa

WE know[1,2] that the secretion of the prostate possesses a pronounced ability to activate the motility of spermatozoa isolated from the epididymis. The effect of the prostatic secretion of the dog on the motion and respiration of canine spermatozoa has been studied by Ivanov[3]. We have now investigated the effect of the prostatic secretion of the dog on the motion of spermatozoa both under aerobic and anaerobic conditions.

It was shown that prostatic secretion activates markedly the motility of spermatozoa both in the case of a free access of oxygen and under anaerobic conditions (in the presence of cyanide). In the latter case, however, to obtain a prolonged effect, it is necessary to add to the sperm some carbohydrate which can be utilized as a substrate for glycolysis. Consequently, prostatic secretion activates to a high degree the utilization by spermatozoa of the energy of both aerobic and anaerobic energy-producing pro-

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