that any donor (for example, canavanine, arginine or guanidinoacetate) could transfer its amidine group to any acceptor (for example, ornithine, canaline, glycine or hydroxylamine). It was shown by Kobayashi⁸ that γ -guanidinobutyric acid was degraded to γ -aminobutyric acid by a 'heteroarginase' from an extract of rabbit intestine mucous membrane. The latter compound could also arise from glutamic acid by the action of a decarboxylase⁹.

Recent findings of Bazemore *et al.*¹⁰ indicated that γ -aminobutyric acid has a neurophysiological activity. The existence of the γ -guanidino analogue in vertebrates as reported here, and the interconvertibility of these two butyric acids into each other in enzymatic reactions, suggest that both compounds may well be playing a part in some nervous processes.

The substance of this communication was presented at the 131st National Meeting of the American Chemical Society, Miami, Florida, 1957, and a detailed account is being prepared.

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Conical Paper Chromatography

A CIRCULAR filter paper suitable for partition paper chromatography is cut so that it can be made into a cone. A number of origins are marked at adequate intervals near the lower edge, the standard and unknown solutions are dropped on these origins (see Fig. 1) and chromatographic development allowed to take place in an upward direction. The cone is immersed in the solvent in a Petri dish placed in a glass vessel with a tight lid (see Fig. 2).

Fig. 1

Fig. 2

Fig. 3

If a continuous line of test solution is applied and then the development is performed, the resulting chromatogram will appear as a series of arcs (see Fig. 3). This latter procedure is especially useful in preparatory chromatography, since the arc required can be readily chosen and cut off.

Particular advantages of this method are that special apparatus is not required; a comparatively smaller size of filter paper and less solvent are required than some of the methods generally used. The development of many materials simultaneously is possible on one chromatogram; the zones are concentrated, so that dilute solutions which would not be sufficiently strong for conventional methods of paper chromatography can be chromatographed by this method. The method can be particularly useful in preparative chromatography.

Using this method of conical paper chromatography, I have been able to identify the green pigment of the Indian lotus embryo with chlorophylls *a* and *b*. The same solvent as that of Chiba and Noguchi¹ was used for the development of this pigment.

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A Diurnal Cycle in the Mitotic Activity of Ascites Tumour Cells in Mice

OBSERVATIONS of a diurnal variation of frequency of mitosis in the normal tissues of the mouse show a diphasic rhythm in the skin epidermis and epithelia of oesophagus, epididymis and duodenal mucosa¹. On the other hand, absence of a diurnal variation was noted in lymph nodes of the gut and in the semen-producing canals of the testis¹.

A double diurnal cycle in the mitotic activity of different kinds of neoplastic tissue has also been reported for human carcinoma² as well as for *ITB*-tumours in rats². The ascites tumour represents a certain type of tumour—a cell suspension implanted in a host animal; thus there is a looser connexion both between the tumour cells themselves and between the tumour and the host animal. For natural reasons the vascularization in ascites tumours also differs from that in solid tumours. It seemed, therefore, of interest to determine whether a mitotic daily rhythm exists also in ascites tumour cells.

As experimental animals we used male white mice, two to three months old and in good health. They were kept under standard conditions in normal daylight, at a constant temperature of $+18^{\circ}\text{C}$., and were fed every day at 9–10 a.m. After an adaptation period of at least two weeks under these conditions, the mice were inoculated intraperitoneally with ascites tumour cells of the Ehrlich type. Since we thought that puncturing the belly too frequently for obtaining samples disturbed the daily rhythm of the mice, we started a series of experiments during May 1955 in which samples of ascites cells were taken only twice a day. One sample was taken at an hour which was shifted continuously 3 hr. forward from one day to the next. Another sample was always taken at the same hour every day. The differences in value between these two samples were