disturbed coördination. The chromatolysis in these cells seems to be roughly proportional to the intensity of symptoms. In general, the cytoplasm and nuclei swell, often to several times the normal size, the tigroid substance becomes faint and collected around the nucleus, or disappears altogether. Often the entire cell shrinks and disappears completely. In one dog with disturbed motor function resulting from exposure to the vapor several months before the sectioning of the brain no Purkinje cells at all could be found in some parts of the cerebellum. All signs pointed to a permanent lesion. A hen showed a similar permanent effect. In these two cases the fatigued or weakened muscle activity in the legs resembled closely the type said to be associated with lesions of certain cerebellar tracts.

Since the Purkinje cell axones are the only efferent paths from the cerebellar cortex and since the nitrobenzene attacks these cells especially, if not selectively, the results are suggestive. While we cannot claim a specific and direct effect of nitrobenzene on these cells, as far as chromatolysis may indicate it the action is not much in evidence, if at all, in other parts of the nervous system.

Animals poisoned in this way illustrate nicely cerebellar disorders for teaching purposes. They also show in a striking way an instance of delayed development of toxic action of a substance stored in the body. This latent period in nitrobenzene poisoning forms one of its most interesting features and is being studied by the writers. Other interesting problems have been opened up by the work.

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A method for the simultaneous fractional analyses of gastric and duodenal contents.

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It is possible to study simultaneously the duodenal and gastric secretions by the following method: An Einhorn tube is passed into the duodenum of the patient, using the technic of Einhorn. Next

morning a Rehfuss tube is inserted into the stomach of the patient. The patient is then given an Ewald test meal, and the gastric and duodenal contents removed simultaneously at varying intervals of time. The extractions are usually made every fifteen minutes for a period of two and a half or three hours. The gastric contents are analyzed for the acid secretions and the enzymes. The duodenal contents are analyzed for the various enzymes. The results are charted in the form of a curve.

A gastro-duodenal tube has been devised which obviates the necessity of passing two tubes. This tube is composed of two compartments—one ending ten inches above the duodenal opening. The tube bifurcates at its free end, and the openings are distinctly labelled G and D to indicate the opening leading to the stomach and to the duodenum.

The clinical and physiological results of the study of the gastric and duodenal secretions by this method will soon be reported.

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Studies on the metabolism of cells in vitro. The toxicity of dipeptids for embryonic chicken cells.

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In a previous paper[1] we have shown that peptone prepared from the yolk of egg is non-toxic for growing chicken cells even when added in considerable concentration to the medium. Egg yolk digested to the point of crystallizing out an *a*-amino acid is toxic. We tested a large number of *a*-amino acids and have found that all are toxic for the cells. In low dilution they stimulate the contraction of heart muscle fragments but did not affect the growth. In higher dilution they inhibit the growth of cells completely and killed.

Having established this fact it became of interest to study the

[1] *Jour. Exp. Med.*, 1917, Vol. XXV., pp. 93–108.