might lead to gall bladder evacuation by the passage of the gastric juice into the duodenum. The gall-bladder of 5 normal men, 5 patients, and 10 dogs was visualized by the phenoltetraiodophthalein technique. One milligram of histamine was then injected subcutaneously and pictures of the gall-bladder were made at 30 minute intervals for one and a half hours. It was found that in the normal men the shadow was not changed in any way. In 2 of the dogs there was a slight decrease in the shadow, in the others it was not changed. In 3 of the 5 patients there was no change in the gall-bladder; in 2 there was a slight, but insignificant change; but in one of the patients, the gall-bladder emptied so completely within 30 minutes that only a narrow bandlike shadow remained.

Our observation shows that the subcutaneous injection of one milligram of histamine only occasionally leads to evacuation of the gall-bladder, and hence it offers no possibility of being a gall-bladder function test. The question logically rises that since on theoretical grounds histamine would serve to evacuate the gall-bladder, why does it not act uniformly? Several possibilities might be suggested: first, the gastric juice formed is not ejected into the duodenum in sufficient quantities to act, which is likely since it was found[1] that more than 10 cc. of 0.4% acid had to be introduced into the duodenum of the barbitalized dog to cause gall-bladder contraction. Second, the gastric juice may have been neutralized by regurgitated intestinal contents. Third, the histamine may cause an increase in tone of the sphincter of Oddi or the duodenal musculature which would prevent the evacuation of bile from the gall-bladder. Other suggestions might be presented, but we think these 3 possibilities are the most likely.

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Emptying of Gall Bladder in Children.

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While studying catarrhal jaundice in children, it was found necessary to ascertain the emptying time of the gall bladder in non-jaundiced individuals of comparable age. This paper deals with 3 normal cases. In each instance 75 mg. of "Iodeikon" per kilo were

* The patients were secured from the Department of Pediatrics through the cooperation of Dr. Julius Hess and his assistants.

administered orally, in accordance with the recommendation of Dr. Evarts Graham. Children over 5 years old were given the usual capsules, but in babies the dye had to be administered in the form of an emulsion (specially prepared by Swan Myers Co. of Indianapolis). Up to the present time we have been unable to secure intestinal absorption of the emulsion in babies, but visualization of the gall bladder in children of 5 to 9 years has been readily obtained. The first few cases (Fig. 1) seem to indicate that the rate of emptying

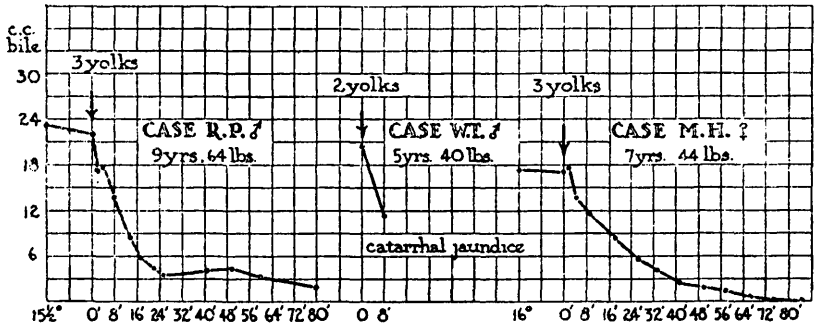

FIG. 1.

Graphs showing emptying of the gall bladder after a test meal of egg-yolk. In case *W. T.*, a patient recovering from icterus, the X-rays were made one day after the stools became stained with bile.

does not differ greatly from that of adults.[1] This seems reasonable in view of the fact that from infancy on, milk forms a principal constituent of the diet.

In connection with these findings it is interesting to note that Halpert[2] has recently called attention to the greater competency of the Heisterian valves in children. But if the cases shown in Fig. 1 are representative, the valves would not seem to offer appreciable obstruction to the flow of bile. Another feature of interest is the relatively large size of the gall bladders shown in Fig. 1, in which the average volume of body and fundus (20 cc.) exceeds that of the 8 smallest adult gall bladders (18 cc.) recorded in Tables I and II (l. c.).[1]

[1] Boyden, E. A., *Anat. Rec.*, 1928, xl, 147.

[2] Halpert, Bela, *Arch. Path.*, 1928, vi, 623.