ing at 83±1°C of 3% albumin buffer solution for 20 min. was proven to produce the most suitable AA solution for RES study with good reactivity to $^{131}$I or $^{125}$I. (3) Using AA carrier prepared by the same way to the labelled AA, mean value of maximum phagocytic capacity was measured as 0.340 mg/kg min. from 10 control cases (cm. previously reported as 1.07 mg/kg min.). (4) Sample handling was simplified using tannic acid reagent precipitation method. (5) Using this modified method several cases with viral hepatitis did show marked increase in this capacity. No significant decrease was observed in RES capacity in cases with viral hepatitis. Four among 13 cases with viral hepatitis even showed more than twice increase in hepatic RES capacity. Four cases with liver cirrhosis did not show any significant change in RES capacity.

**Studies on the “Stream Line” Phenomena in the Portal Vein in Man and Dog Using $^{131}$I Labelled Macroaggregated Albumin (MAA)**

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The possible existence of segregated stream of blood in the portal vein (“Stream line” phenomena in the portal vein) and their subsequent distribution to definite parts of the liver is of interest and was studied by many investigators. Although the portal streamlining was proven in the dog, it could not be confirmed in man.

In this work “Stream line” phenomena in the portal vein was reconfirmed in the dog and was found for the first time in man.

One hundred $\mu$C (dog) or 300$\mu$C (man) of $^{131}$I labelled macro-aggregated albumin (MAA), ranging 20—50 $\mu$ in size, dissolved in 1.0-1.5ml saline solution, was employed as the indicator. Eleven cases of human subjects, having normal hepato-portal circulation, and 11 dogs were studied. After laparotomy $^{131}$I labelled MAA was injected into different radicles of the portal vein of the dog and man. For infusion 2 minutes were taken in order not to disturb the stream line. The ultimate localization of $^{131}$I labelled MAA in the regional capillaries of the liver was observed using scanning method for man externally and for the dog after removal of the liver.

Scanning of the liver after the injection of $^{131}$I labelled MAA into tributaries of portal vein showed the segmental distribution of $^{131}$I labelled MAA in all these cases.

From the above findings the existence of “Stream line” phenomena in the portal vein was proven not only in the dog but also in man.

**Detection of Hepatic Shunts by $^{131}$I MAA Scintigram (III)**

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The principle of this new method is as follows: Since adequately prepared MAA with the particle size ranging from 20 to 100 $\mu$ is completely trapped by the capillary net work where it is first delivered, MAA can not reach the post capillary blood stream unless there is a by-pass route whose diameter is large enough to permit passing of