shortened clearance, increased uptake of liver (slightly) and spleen (extremely), and decreased uptake of bone marrow.

Chlorabuling group showed increased uptake of liver and spleen, and decreased uptake of bone marrow.

It was concluded from these data that (1) spleen and liver were in the same manner on the sequestration function of ^{51}Cr-labelled heat damaged erythrocytes, (2) RES function of bone marrow and that of spleen and liver were observed adverse reactions except splenectomized mice, (3) CP and H.G.G. & F.C.Adj. decreased RES function of bone marrow, and (4) spenectomy increased RES function of bone marrow.

Fate of Intravenously Administered Damaged Erythrocytes — Whole Body Macro-Autoradiographic Study —

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Whole body macro-autoradiographic studies were carried out in mice to observe organ distribution of heat-denatured ^{59}Fe-red cells.

30μCi of ^{59}Fe Cl_3 was injected i.p. to mice for 2 days and after 1 week the blood was obtained from the heart. Such ^{59}Fe-tagged red cells were trated by heating at 49±1°C for 45 minutes. 0.15 ml of heated ^{59}Fe-red cells was injected into the tail vein of normal and splenectomized mice. At 3, 24, 72 and 168 hours, mice were sacrificed and macro-autoradiography was performed by a modification of Ullberg's technique.

As to the distribution of ^{59}Fe in normal mice after 3 hours, the splenic activity was predominant followed by the hepatic activity. Activity in the blood was already decreased at this time. Autoradiographic patterns of the liver and kidney were spotty showing the parenchymal structure.

There were no obvious changes in distribution patterns after 24 hours in comparison with those after 3 hours, except that the activiy in he blood was decreased still further and the pattern of the liver was less distinct.

This suggests that ^{59}Fe released from red cells was taken up by the liver parenchyma.

After 3 days, the activity in the blood was fairely increased over that at 24 hours, and in contrast, the hepatic activity was decreased. Distribution patterns after 7 days were nearly the same as those after 3 days. The activity in the bone marrow showed no obvious change during 7 days.

The organ distribution in splenectomized mice did not suggest any compensatory increase of uptake by the liver and other organs; the blood activity was much higher than the control for at least 24 hours.

These observations clearly demonstrate that the high activity in the blood after 3 days represents reutilization of ^{59}Fe by the newly formed erythrocytes, and that the spleen has an important role in the uptake of heat-denatured red cells as evidenced by the lack of increase in activity in the liver and bone marrow following splenectomy.