The detection ability of liver cancer is classified into four grades: that is, not diagnosed (—), diagnosed (+), easily diagnosed (±), measurably diagnosed (＃). The detectability of each diagnostic methods is as follows: if that of hepatic arteriography is assumed to be 100%, liver scanning and liver scintiphotography are 61.3% and 90.4% respectively.

**Application of Digital Computer into Clinical Evaluation of Liver Scan**

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The digital computer processing was carried out for differential diagnosis of liver diseases. Two methods, matrix and discriminant function were used for this purpose. In this series, 9 data from liver scanning (right width, left width, length of spleen, number of defect, bone marrow visualization, mottled appearance, faint appearance, elevation of the right lobe, and elevation of both lobes) and 11 laboratory data (serum protein, A/G ratio, icterus index, serum bilirubin, ZTT, TTT, GOT, GPT, alkaline phosphatase, BSP and total cholesterol) were selected, and 150 proved cases were chosen for the study.

Matrix method is very close to the thinking way of physician's diagnosis. Making the matrix of diseases and informations with many logical IF circuits, probability of a disease was output in order after these matrix elements logically. This method is most useful in picking up a few diseases from a large number of diseases. In our study, this method gave a good result in the diseases such as acute hepatitis, hepatic tumor, Banti's Syndrome, but poor result in chronic hepatitis and cirrhosis.

The discriminant function, one of the multi-variate analysis, was used to determine the discriminant coefficients between two respective liver diseases. Using the linear function of the data multiplied by the coefficients, proper answer of the disease could be obtained in 80% of the case on the average. Liver scan includes the continuous and discrete type of data and these data are not suitable for discriminant function in a strict sense, but in practice discriminant function could fairly support to make a differential diagnosis. In the above mentioned procedure, scan data or/and laboratory data were utilized and the results by these ways were compared each other. Hepatom could be differentiated by liver scan data alone, but the other liver diseases could not be done always because of shortage of informations.

**Classification of ¹⁹⁸Au Scintigram of the Normal Liver**

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Methods and Materials
An Aloka JSS-103 Scientiscanner, Cristal 3 × 2 inch (NaI), Collimator 19 holes Focus 10 cm honey cone were employed in this study. A