a sodium iodide cyrstal 2 inches in diameter. On the side of the image detector, we built a honeycomb type collimeter which was focused on the face of the coincidence detector. Its focal distance was 100 cm. We used an AEC module produced gy the ORTEC Company as the simultaneous calculator system. Two to three hours after intravenously injecting 10–8 mCi of $^{18}F$, we performed bone scanning.

Although we cannot assert that this method is superior in *all* respects, the image obtained was clearer than that obtained by $^{99}MTc$-phosphate due to the disappearance of background. This disappearance of background represents one of the advantages of the Positron Camera, the other advantage being the fact that both the image of coincidence and the regular image are obtainable. This Positron Camera may be employed effectively when other short half-life positron emitters are used. However, the disadvantage of this camera lies in the fact that its range is limited in scope.

## An Attempt at Quantitative Representation of Bone Scintigrams

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**Purpose:**

In performing bone scanning at regular intervals for the purpose of evaluating the course of bone disease, all the scintigrams must be made under the same scanning conditions. This is because, on scintiphoto, the activity of bone tissue is expressed in black of different shades, which are dependent on scanning conditions.

Even if all scintigrams are taken under the same scanning conditions, any change in disease activity cannot be visualized unless the change is expressed as a difference in the shade of darkening. Moreover, the difference is recorded qualitatively only. These problems all arise from the fact that photographic records are used in the follow-up of disease course.

The authors thought it might be possible to make proper quantitative comparisons of scintigrams if such records are kept on the basis of counts input into a collimator without any previous processing.

**Method:**

Input from a whole-body scanner is stored in a matrix memory of a minicomputer. As necessary, the image of the area around the lesion is displayed on a cathode ray tube together with the input count, and the scanning conditions are also corrected as needed.

**Results:**

By this method, scanning can be performed under optimal conditions because no restrictions are imposed on them, and changes in disease condition can be evaluated quantitatively since disease activity is expressed in terms of count.