D. G. Penington, N. Y. T. Lee, A. Moore and K. Streatfield (University Department of Medicine, St. Vincent's Hospital, Melbourne, 3065, Australia): **Heterogeneity of Platelets: Origin of Light Platelet Fraction from 32N Megakaryocytes. (540)**

Heterogeneity of circulating platelets has been ascribed to ageing but demonstration of differing cytoplasmic features in 8N, 16N and 32N megakaryocytes (Ser. Haemat. *8*, 21, 1975) suggests that heterogeneity arises during platelet production.

Rat platelets have been separated on continuous density gradients (whole blood on Ludox: PVP) and platelets sized using a Coulter Counter with 24 channel pulse: height analyser. Approx. 80% of rat platelets settle between S. G. 1,058 and I.067 with marked, consistent size variation (modal channel, 6). Approx. 12% settle between 1,042 and 1,058 and are small in size (modal channel, 3) with few large platelets. Platelets between 1,067 and I,074 are a mixed population, both large and small.

In vivo ^{75}Se selenomethionine injection gives synchronous labelling of the three density fractions.

In vitro incubation of platelets with colloidal gold ^{198}Au (200–400 Å) gives more avid labelling of light than of median and heavy platelets. Mature megakaryocytes *in vitro* also take up colloid and 32N cells, with abundant demarcation tubular system, are particularly heavily labelled. Origin of small light platelets from 32N megakaryocytes is suggested.

J. Kutti and S. Safai-Kutti (Sahlgren's Hospital, 41333 Göteborg, Sweden): **Platelet Kinetics in Healthy Asplenic Men. (541)**

Using autologous platelets labelled *in vitro* with radioactive sodium chromate duplicate platelet survival studies were carried out in six healthy asplenic men. At the first experiment plasma, and at the second a Ringer-citrate-dextrose (RCD) solution was employed as incubation medium.

The uptake of chromate by the platelets was about 2.5 times higher at the RCD- as compared to the plasma experiments. An identical pattern for the immediate behaviour of infused labelled platelets was observed at the duplicate studies, and the recovery of platelet-bound radioactivity remained stable at the 90%-level during two post-infusional hours. At these experiments the means for platelet mean life span (MLS) were identical, 7.2 ± 0.5 and 7.2 ± 0.4 days, respectively. These values slightly, but not significantly, exceeded the mean platelet MLS for a control group consisting of ten young healthy males (6.9 ± 0.4 days). The means for platelet production rate (P) at the duplicate studies made on the asplenic subjects were $19 \pm 2 \times 10^{10}$ and $21 \pm 2 \times 10^{10}$ platelets per day, respectively, and did not differ from the mean for P obtained in the control group ($22 \pm 2 \times 10^{10}$).

J. Björnson and I. Aursnes (Hem. Res. Lab., Dept. IX, Ullevål Hospital, University Clinic and Institute of Physiology, University of Oslo, Norway): **The Hemostatic Effect of ^{51}Cr-Labelled Platelets. (542)**

In the interpretation of data obtained with ^{51}Cr-labelled platelets it is vital to know whether they are functionally normal. Although survival of ^{51}Cr-labelled platelets in vivo appears to be normal, platelet aggregability has recently been shown to be reduced after the labelling procedure (Björnson, J., Scand. J. Haemat. *13*, 252–259).

The aim of the present study was to examine the hemostatic effect of labelled platelets. Rabbits were made thrombocytopenic ($< 35{,}000/\mu l$) by whole body irradiation. Bleeding times were recorded after standardized cuts on the inner side of the ear, a method showing an acceptable reproducibility (< 3 min in normals). The animals were then transfused with labelled platelet concentrates, increasing the platelet levels to about $200{,}000/\mu l$ blood. Bleeding times of more than 15 min before transfusion were almost normalized 1 and 4 hours after transfusion. In controls transfusion of PRP led to similar shortening of bleeding time.

It is concluded that platelets subjected to the ^{51}Cr-labelling procedure to a large extent retain their hemostatic ability.