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FINE STRUCTURE OF HEMAL NODES IN GOATS, WITH SPECIAL REFERENCE TO THE PASSAGE OF INTRANODAL MIGRATION OF ERYTHROCYTES

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The fine structure of the hemal nodes and the intranodal pathway of erythrocytes were electron microscopically investigated in untreated or phenylhydradine hydrochloride (PH)-treated goats. The results obtained in this study were as follows :

In the hemal nodes of the untreated goats, many erythrocytes were found in the endothelium and just under the basement membrane of the venules in the parenchyma. Erythrocytes appeared more frequently in the perivenous areas than in the other vessel areas. There were often erythrocytes in the sinus endothelium. In many cases swollen erythrocytes and agglutinated blood platelets were seen in the sinus. There was no direct connection between the blood vessels and the sinus or the parenchyma. Many cytoplasmic processes accompanied by elongated anchoring filaments were seen at the abluminal surfaces of the sinus endothelium. A loose connection between the adjacent sinus endothelial cells was found. The basement membrane of these endothelium was usually discontinuous or lacking. These fine structures of the sinus endothelium resembled those of the usual lymph nodes.

In the PH-treated goats reticulocytes occurred in over 10% of the blood, but erythropoiesis was not found in the hemal nodes. Accordingly, reticulocytes were used as a marker for investigating the pathway of erythrocytes circulation in the hemal nodes. The frequency of reticulocytes was less in the hemal nodes than in the spleen. A small number of reticulocytes were seen in the parenchyma and in the sinus of the hemal nodes, but the frequency was less in the sinus than in the parenchyma. From these findings it was suggested that the erythrocytes of the parenchyma of goat hemal nodes mainly migrated through the endothelium of the venules into the extravascular areas. In addition some of these erythrocytes migrated through the sinus endothelium from the parenchyma into the sinus. It seemed, however, this migration process was considerably slow.