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MORPHOLOGICAL AND EXPERIMENTAL STUDIES ON THE PHAGOCYTES OF DUCK LUMBAR LYMPH NODES

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The morphology and the kinetics of phagocytes in duck lymph nodes after subcutaneous injection of several foreign materials such as colloidal carbon, alum-precipitated bovine serum albumin (AP-BSA) and horseradish peroxidase (HRP), were histologically studied.

Colloidal carbon and AP-BSA were phagocytized by numerous intrasinus wandering macrophages immediately after the injection, although the former were ingested more actively than were the latter. It was noted that these intrasinus wandering macrophages subsequently migrated through the lymphatic cords into the lymphatic nodules, and that the cells with colloidal carbon finally became situated in clusters around or just inside of the germinal centers.

HRP was at first also ingested by the endothelial cells of lymphatic sinuses in addition to the intrasinus macrophages; however, the HRP was later recognized in the long processed fixed macrophages (reticular cells) in the lymphatic cords or the lymphatic nodules in proximity to the germinal centers. This finding showed that the HRP was transported through the lymphatic cords into the lymphatic nodules by the fixed macrophages.

The results showed that the foreign materials, although being subject to the different cytological kinetics of the phagocytes, shared a similar intranodal pathway. Namely, some of these materials were transported from the lymphatic cords, which were considered to be a bursa-dependent area, into the lymphatic nodules, which were thought to be a thymus-dependent area, and they finally entered the area of the germinal centers, which were possibly considered to be a bursa-dependent area.