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POST-CAPILLARY VENULES AND HASSALL'S
CORPUSCLES OR RETICULAR EPITHELIAL CELLS
IN THE PALATINE TONSILS OF THE
RABBIT, HORSE, DOG, AND COW

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SUMMARY

The palatine tonsils of the rabbit, horse, dog, and cow were observed. The tonsillar surface epithelia of the horse and cow were the thickest, and showed some partial keratinization. This epithelium was thinnest in the dog. Tubular and pocket-shaped crypts occurred in the rabbit, horse, and cow. In contrast, the dog had deep, longitudinal clefts. Variable zones of infiltration of lymphoid cells occurred in the crypt epithelia of all animals.

Numerous post-capillary venules were identified in the palatine tonsil of the rabbit. In this regard the rabbit's tonsil most closely resembled that of the human. Post-capillary venules were observed in progressively lesser numbers in the palatine tonsil of the horse, dog, and cow.

These species differences were interpreted in the light of other evidence that indicates post-capillary venules are sites for selective emigration of lymphocytes from the general blood circulation into various lymphatic tissues. Two interpretations of these observations were considered. The first was that the differences in post-capillary venules reflect fundamental differences in the functions of the tonsils. The second interpretation was that the differences simply reflect different degrees of efficiency in emigration, since lymphocytes are believed to also emigrate, less selectively, between the endothelial cells of capillaries.

The palatine tonsil of the horse contained spherical groups of reticular-like epithelial cells, identical in appearance to Hassall's corpuscles in the human thymus. This confirms undocumented reports in the literature of this unusual location of Hassall's corpuscles. Occasionally single cells or small groups of cells resembling reticular-like epithelial cells were observed in the palatine tonsils of the rabbit, dog, and cow, but Hassall's corpuscles were not observed in these other species. The absence of Hassall's corpuscles in the palatine tonsil of the dog and cow refutes previous reports that such structures are present.

The presence of Hassall's corpuscles in the palatine tonsil of the horse is not too surprising if considered in terms of proximity of embryological origins. The palatine tonsil develops from the dorsal region of the second pharyngeal pouch, and the thymus originates from the adjacent dorsal region of the third pharyngeal pouch. The large size of the palatine tonsil of the horse makes this organ a recommendable source for obtaining large quantities of those structures resembling Hassall's corpuscles.