A bar of mist is step-like because the dye extends further back along some capillaries than along others. Not infrequently these enter one side only of the venous trunk, and the staining is then confined to this side (Fig. 10). None occurs about the venous trunk beyond the region where capillaries enter it (Fig. 10), and none about the larger vein into which it gives, nor about any of the arterioles.

Instead of spreading and merging with one another the colored bars retain their size while an even staining gradually takes place between them. Evidently the capillaries are somewhat permeable throughout their length even to the most poorly diffusible of the dyes we have used. As the general staining intensifies the boundaries of the bands disappear in it, and at last they are totally obscured. In young etherized rabbits injected with Chicago blue this may take more than 4 hours.

These facts prove that the dyes pass out all along the capillaries, but most readily in the region where they unite into venules. From their proximal portion Chicago blue and the trypan dyes escape very slowly. Brom phenol blue and patent blue V pass out of the capillaries everywhere, though with special ease at their end; and the small venules are permeable to them as well. Patent blue V penetrates even the wall of small arterioles, staining the tissue next them.

The progressive increase in intensity of the staining as the venule is approached suggests the existence of a gradient of distribution along the capillaries. But an alternative explanation is possible, namely that a secondary dispersion occurs of dye escaping only at the veno-capillary junction or from the least venules. In such event one should see the dye emerge like smoke from a leaky stovepipe, and spread backwards in the direction of the arterioles. The phenomenon could not be overlooked with patent blue V or brom phenol blue which give rise quickly to intense, broad bars. It never occurs. Furthermore the mist of Chicago blue remains of the same dimensions for hours, proving that secondary spread of the dye through the tissues is extremely slow. True, extravascular color is first noted where the capillaries enter the venules; but it does not spread thence. The bar of stain materializes throughout its eventual situation as a mist of graded intensity from center to margin; and when first perceptible it has nearly its eventual breadth, enlarging later only to the extent that might be expected from increased visibility. One is forced to conclude that some gradient affecting the distribution of vital dyes exists along the further portion of the capillaries.
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