when on isolating the fresh fibres by teasing, the medulla happens to be torn away, leaving the axon uncovered. Also in transections of the fresh spinal cord of the frog in which there is ready penetration of the reagent to every part, the axis cylinder gives no reaction.

The medullary sheath, on the other hand, contains potassium, sometimes in abundance, but not usually uniformly distributed. It is found in the neurokeratin trabeculæ, but often more in those parts of the latter which are immediately adjacent to the axon, and in consequence the latter may appear in such preparations as a merely negative image, or, to state it differently, as a white shaft or strand enclosed in a coloured tube (Fig. 38 *c*). The two thus appear in contrast, the distinction between the innermost portion of the neurokeratin framework and the axon being of the sharpest degree. When the axon does appear coloured it is found due to the colour in the sheath through which it is seen.

In addition to the potassium occurring more or less diffusely in the neurokeratin framework, quantities of it are found in minute masses or in bizarre structures to be observed here and there through the sheath. These are sometimes immediately adjacent to the axon, sometimes immediately beneath the neurilemma (Fig. 38*b*). In the nerve fibres of the rat and in some of those of the frog one observes structures like those represented in Fig. 34 *b*, oval or circular rings, formed of granules constituted of potassium-holding substance and sometimes a central mass of the same material. These rings are, in the rat, regularly distributed along the fibre, which has a remarkable appearance in consequence (Fig. 39 *a*).

Frequently under the sheath and in contact with the axis-cylinder are minute potassium-holding masses, sometimes in groups but more often isolated and distributed at irregular intervals in the extent of the fibre between the nodes of Ranvier. The size of these varies very much, but they may be but minute granules. Sometimes also the largest of them may be seen to be composed of aggregations of minute granules. The variability in size and density is found also in the potassium-holding material observed at the nodes of Ranvier or in their neighbourhood. Here often there may be what appears to be a dense mass surrounding the fibre, the shape of the mass varying, but partaking sometimes of the appearance given the silver method employed to demonstrate the nodes. In nerve fibres from the frog the potassium reaction is sometimes a diffuse one in the neighbourhood of the node, where also the potassium-holding material may be a collection of fine granules situated between