

a change in the colour of hæmatoxylin, and it must therefore be considered as an organic compound.

Carniferrin is also, as shown by this test, an inorganic compound¹.

The peptonates and albuminates of iron belong to the inorganic class.

Special Application of the Test.

As already indicated, organic iron compounds leave hæmatoxylin unaffected. It is, however, often important to know whether there is much or little organic iron in tissues, and for this purpose hæmatoxylin is very useful. It is necessary to convert the organic iron into an inorganic form, which may be done, as I have pointed out (*op. cit.*), by allowing acid alcohols, and especially sulphuric acid alcohol¹ to act on a piece of tissue for from one to twenty-four hours at 35° C., the length of time varying with the size of the preparation and the amount of the acid alcohol used. If after such treatment the preparation be freed from acid by washing it in alcohol, it may be covered for a few minutes with a solution of hæmatoxylin of not less than 0.5 per cent. strength. Wherever iron exists in such a preparation the hæmatoxylin becomes blue-black or blue. Very often sections of tissue thus treated appear as if stained with Ehrlich's hæmatoxylin. As the acid alcohol leaves the iron where it is set free, as an inorganic compound, the preparation demonstrates very sharply the original distribution of the organic iron, especially when it is contrasted with a preparation which has not been treated with acid alcohol, but yet has been stained with hæmatoxylin.

Extraordinarily minute traces of organic iron, with the exception of that in hæmoglobin and hæmatin, are thus demonstrated which could not be revealed by the Prussian blue method or by ammonium sulphide. There is a further advantage in the method. Prussian blue preparations made to show the presence of iron in tissues are apt to fade out unless kept away from the light. In the case of hæmatoxylin preparations, no deterioration is to be anticipated under any condition when they are properly made.

¹ It must be noted that the iron of hæmoglobin and hæmatin is not readily converted thus into an inorganic form.