

paper.

4th. Cover with hæmatoxylin and allow it to remain twelve minutes.

5th. Wash in water.

6th. Dry as before.

7th. Remove all dust with camel's hair brush.

8th. Mount with Canada balsam.

The importance of always using the same stain for the same time may be illustrated as follows.

In specimens of normal blood prepared as above it will be found that the coloring of the red blood corpuscles gradually diminishes towards the centre. The reason of this is that it is the hæmoglobin which stains, there being of course more of it where the corpuscle is thickest.

In chlorosis, where each corpuscle is relatively poor in hæmoglobin, the clear space in the centre is much increased in size, so that in extreme cases you have the effect of a ring of stained protoplasms surrounding a clear central space.

Effects of disease on red blood corpuscles.

I. Alteration in size, to which the following terms are applied—

1st. Microcyte—the corpuscle smaller than normal.

2nd. Normocyte—representing normal corpuscle.

3rd. Macrocyte—a cell somewhat larger than normal.

4th. Megalocyte—one considerably larger than normal.

All these corpuscles preserve their biconcave form, the discoplasm still retaining the inherent power of assuming this shape, the obvious reason being for the purpose of obtaining the greatest possible respiratory surface.

In normal blood, the red blood corpuscles are found in the general circulation without nuclei, but in the red marrow of bones, and in the blood of the embryo, they are

found possessing nuclei, these are really immature red corpuscles. In certain pathological conditions these unfinished cells are hurried into the circulation, and the following terms are used to designate them

1st. Microblast—a nucleated microcyte.

2nd. Normoblast—a nucleated normocyte.

3rd. Mesoblast—a nucleated macrocyte.

4th. Gigantoblast—a nucleated megacyte.

II. Alterations in shape.

1st. In certain conditions you find the number of the red cells deformed, assuming great varieties of shape, the discoplasm having lost its power of assuming the biconcave form. These deformed corpuscles are called poikilocytes.

2nd. Crenated corpuscles—this is a necrobiotic change, which means the death of the corpuscles, such corpuscles are common in the blood during the agony, and in certain septic conditions.

III. Vacuolation of corpuscles—this is also a necrobiotic change and is characterized by the appearance in the corpuscles of clear vacuoles.

The leucocytes of normal blood are divided by Ehrlich into five groups.

1st. Polynuclear Leucocytes.

2nd. Lymphocytes.

3rd. Spleenocytes.

4th. Transitional forms.

5th. Eosinophile cells.

These varieties are well marked and easily distinguished, the polynuclear forming about 64 per cent of the total number of leucocytes, the lymphocytes 28 per cent, the spleenocytes 6 per cent, the transitional 1 per cent and the eosinophile 1 per cent. So that in normal blood you expect to find, roughly, two polynuclear to one mononuclear form, though these proportions vary much in different diseases.

To be continued.