

nucleus of each and every cell in animal or vegetable life consists of a highly organic product, better known as nuclein. Attempt upon attempt has been made to isolate this product, but failures have invariably followed, resulting in placing before the practitioner bi-products of nuclein known as Lethitin, Phosphoric Acid, Protargon, etc.

I now recall to you the statement made in the introductory, when I cited to you the findings of Hammerschlag's laboratory experiments, and the subsequent clinical investigations in hospitals and clinics, or at the bedside of the patient, which demonstrated that even the bi-products of nuclein exert a specific physiological action upon the blood. No matter what medication we resorted to, its physiological action is first noted by the histological changes which occur in the different varieties of blood cells, and knowing full well that life depends upon the proper function of the blood, we must at once recognize that medication administered in disease (and I desire to make it a special point), when administered in tuberculosis, must primarily exhibit its physiological action by demonstrating progressive histological changes in the blood.

Whenever and wherever disease exists, we find our patient exhibiting an anemia of more or less degree; and the term "anemia" comprises impoverishment in the color substances of the blood—better known as hemoglobin and the reduction of the number of red cells.

Should such anemia be accompanied by an infection of any kind, then we have the exhibition of a leucocytosis. It is not of such great value to know the amount of hemoglobin, or the number of red and white cells, in the blood of your patient, but the greatest and most important point—in fact, the only important one to be considered—is the study of the histological structure of the leucocytes, and a thorough and accurate count of the varieties of leucocytes, and when making such, to consider the functions of the hematopoietic organs.

A thorough study of pathological anatomy, especially when undertaken in *post-mortem* cases, will show us either the dormancy or activity of certain hematopoietic organs in tuberculosis.

It has been my observation, as well as that of some of the greatest scientists, that a specific blood cell occurs in the blood of tubercular patients—namely, the basophilic cell, which, if found, tends toward a favorable prognosis.

An abnormal count of polynuclear leucocytes, especially if accompanied by neutrophilic granules, denotes a very unfavorable prognosis; and if such leucocytes are exhibited in the blood in abnormal quantities, then we will also find that all eliminations contain an excess of phosphates or phospho-albuminates.

The question now arises, Whence such excessive elimination of phosphatic elements?