PREFACE

Morphologic Hematology

HEMATOLOGY began as morphology. Ehrlich, who is often cited as the "father" of hematology, transformed the study of the blood cells from the dull, eye-wearying technics necessary in studying unstained blood to the fascinating microscopic spectacles seen when the brilliant aniline blood stains are used. For many years, early workers in the field such as Pappenheim, Ferrata, Cesaris-Demel, and many others made fundamental observations based on Ehrlich's new methods and modifications. After a time, however, there seemed to be altogether too much preoccupation with morphologic minutiae and the forest could not be seen for the trees. Hematology became a dull and dormant subject.

The great new physiopathologic "breeze" which was set in motion by the introduction of liver therapy in pernicious anemia and which quickly swept across the world from the United States contributed greatly to the present-day importance of American hematology.

As the value of the dynamic approach became more and more apparent, that of morphologic hematology seemed to become progressively diminished. Indeed, in some quarters the careful inspection of a blood smear was regarded as in the domain of the technician and perhaps beneath the dignity and even the knowledge of the physician. Nothing can be further afield from the true scientific approach. Morphology, when appropriately interpreted, can be both physiology and chemistry. After all, when a cell stains blue, it does so because its cytoplasm has an affinity for the basic stain and is itself acid. The cellular acids present, such as ribose nucleic acid, may be differentiated by further staining reactions, i.e., by further chemical means. A brilliant exposition of the value of various histochemical technics in studying a single problem, that of stilbamidine therapy of multiple myeloma, is presented by Snapper and his collaborators in the July issue of Blood.

When numbers of small, dense round red cells known as spherocytes are found in association with large, greyish blue staining red cells, one can immediately come to the physiologic interpretation that some sort of hemolytic mechanism is active, causing red cell spherocytosis and a simultaneous response on the part of the bone marrow with the production of large, "new" red cells or reticulocytes. This type of biphasic red cell population is characteristic of hemolytic anemia, whether congenital or acquired.

Far from being a dead subject, morphologic hematology is now bound to come into its own and undoubtedly will serve to introduce exceedingly useful tools for the study of complex problems relating to blood formation and destruction. The science of histochemistry is still in its infancy and is bound to progress. Newer morphologic methods involving phase microscopy, electron microscopy, ultraviolet absorption technics, fluorescence microscopy, and micro-incineration are already available as methods to open up new vistas in the field of hematology. Marrow culture methods, as in the studies of Plum reported in this special issue

devoted to morphologic hematology, have been carried out by relatively few investigators, but these, too, offer great promise. No! Far from being dead, morphologic hematology is undoubtedly in for a renaissance period, a period in which it is hoped that appropriate staining technics will point directly to chemical and physiopathologic alterations.

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