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Difference in Reticulocyte Behavior in Anemia from Malaria and in Pernicious Anemia.

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Until the well known results in the treatment of pernicious anemia were obtained by the feeding of liver or liver extract, the hemolytic features of this disease as presented by both skin and plasma were generally considered of sufficient significance to classify pernicious anemia essentially as a form of hemolytic anemia. This assumption logically necessitates further assumptions: that in the severe stage of the disease with an erythrocyte count of about 1,000,000 and marked yellowness of skin and plasma the blood destruction is marked. Since such a low level might be maintained for months, a rapid regeneration would be necessary to compensate the rapid destruction. If so, a high reticulocyte count would be expected under these very circumstances. Contrary to such an expectation the reticulocytes are usually found below half of 1%.

This paper aims to contribute to the argument against pernicious anemia as essentially a hemolytic anemia. We demonstrate in the observation here presented (Chart 1) that in one truly hemolytic

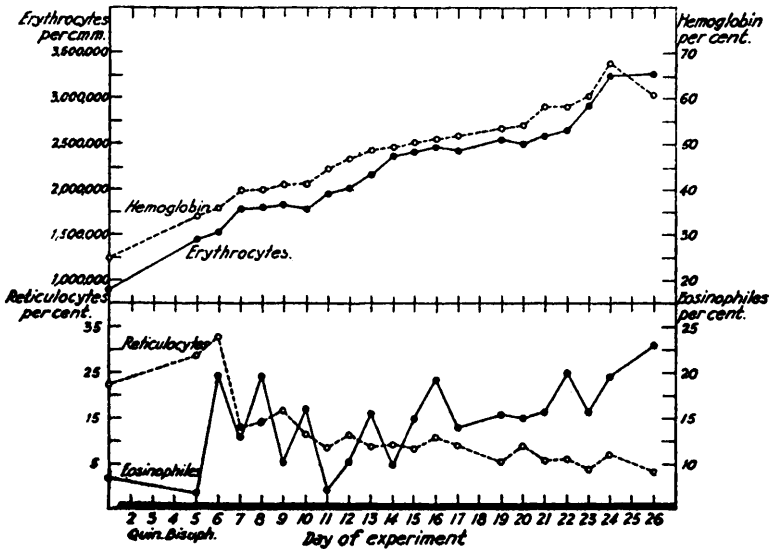


CHART 1.

Difference in reticulocyte behavior in anemia from malaria and in pernicious anemia.

anemia in man, due to untreated tertian malaria, at an erythrocyte level of less than 1,000,000 there is a lively blood regeneration going on, as expressed by the number of reticulocytes reaching 23% of the total number of erythrocytes. The degree of regeneration indicated by this reticulocyte count was needed approximately to keep pace with the destruction. This blood picture closely resembles the one produced in dogs by means of phenyl hydrazine poisoning¹ but is fundamentally different from the one in an untreated case of pernicious anemia. The mere stopping of the malaria by quinine without any treatment of the anemia in this case sufficed to produce recovery, incidentally making the picture fairly identical with the regeneration phase in the phenyl hydrazine experiment referred to and also to the reaction produced by liver extract in pernicious anemia.

Our observations reveal one other interesting feature: the marked eosinophilia which developed in this case as soon as recovery set in or as soon as the treatment of the malaria was begun. Similar eosinophilia was observed in pernicious anemia when treated with liver.

The reason for presenting this observation is the absence of cases like this in most clinics where the anemia problem is being studied at present.

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Deficiency Anemia in Chinese, Responding to Cod Liver Oil.

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In attempting to survey the anemia situation in North China several factors presented themselves to us as significant. (1) Even outside the so-called famine areas food deficiencies are common, particularly qualitative deficiencies. This point is elucidated by the work of Hsien Wu¹ and his collaborators, who showed that the North China diet is low in fat and on the verge of fat soluble vitamin deficiency. (2) Attacks of prolonged diarrhea, due to dysentery or to yet unknown causes, in a population living on such a diet are apt especially to bring out 2 groups of symptoms: of anemia and

¹ Johnson, R., and Berglund, H., *PROC. SOC. EXP. BIOL. AND MED.*, 1928, xxv, 517.

¹ Wu, Hsien, and Wu, D. Y., *Chin. J. Physiol. Report*, Ser. No. 1, 1928 (July), 135.