cylinders may be observed. Alterations of the myelin sheaths and a glial reaction are usually present. The spinal canal may be compressed or dilated. Radicular changes either of the hemorrhagic or of the primary degenerative type have been described.

Opinions regarding the pathogenesis of these lesions vary from that of a purely mechanical hypothesis of disturbed circulation, increased pressure in the cerebrospinal fluid and primary physicochemical changes in the cells and fibers of the nervous tissues to that of a hypothesis of cytotoxins developing as the result of trauma and causing more or less extensive softening of the cord.

Concussion of the spinal cord may be considered a definite clinical or at least an anatomoclinical form of traumatic lesion of the spinal cord.

CHLOROPHYLL AND BLOOD REGENERATION

Years ago the suggestion was made [1] that chlorophyll, the green pigment of the leaves of plants, is similar chemically to the nonprotein portion of hemoglobin. Subsequent investigations have borne out this view and have demonstrated that both are composed of a nucleus of substituted pyrrol rings. As is well known, the fundamental difference between the two pigments is that iron is present in hemoglobin whereas magnesium occurs in chlorophyll. The similarity of the two substances has prompted speculation regarding the possible value of chlorophyll as an agent for promoting blood formation. Animal experiments to test the possible existence of such a relation have yielded conflicting results. It has been stated [2] that rabbits rendered anemic by bleeding recover more rapidly if chlorophyll is added to the diet. Somewhat similar results have been obtained by several other investigators in rats [3] and in dogs.[4] Certain of these studies, however, were undoubtedly complicated by the presence of iron and perhaps other contaminants in the chlorophyll preparations used. In contrast to the foregoing favorable results, another group of investigators [5] has found that green leafy plants are not epecially effective in promoting hemoglobin formation in the chronic hemorrhagic anemia of dogs and have concluded that "chlorophyll may be very like hemoglobin in its chemical structure but the normal dog cannot utilize much if any of the chlorophyll nucleus for hemoglobin construction even under maximal stress."

1. Verdeil, M. F.: Compt. rend. Acad. d. sc. **33**: 689, 1851. Hoppe-Seyler, Felix: Ueber das Chlorophyll der Pflanzen, Ztschr. f. physiol. Chem. **3**: 339, 1879.
2. Bürgi, Emil: Cor.-Bl. f. schweiz. Aertze **46**: 449, 1916, cited by Patek.[7]
3. Scott, J. M. D.: Studies in Anemia: I. The Influence of Diet on the Occurrence of Secondary Anemia Following Repeated Hemorrhages in Rats, Biochem. J. **17**: 157, 1923.
4. Binet, Léon, and Strumza, M. V.: Le pouvoir antianémique de la chlorophylle, des sels de fer et de cuivre, le Sang **8**: 1041, 1934.
5. Whipple, G. H., and Robscheit-Robbins, F. S.: Blood Regeneration in Severe Anemia: IV. Green Vegetable Feeding, Am. J. Physiol. **72**: 431 (May) 1925; XIX. Influence of Spinach, Cabbage, Onions and Orange Juice, ibid. **92**: 400 (March) 1930.

Chlorophyll has likewise received some attention as a possible hematopoietic agent in man, and a claim has been made for its beneficial action.[6] These results have been regarded with skepticism, however, since the preparation employed in the study contained only trivial amounts of chlorophyll.[7] The most recent investigation of the effect of chlorophyll in human hematopoiesis [7] was conducted on a group of fifteen adult patients with chronic hypochromic anemia. Chlorophyll and certain of its degradation products were administered to the patients with or without iron and the effect on the proportion of reticulocytes and concentration of hemoglobin and erythrocytes in the blood was closely followed. In all cases the oral administration of the chlorophyll preparations either alone or with small amounts of iron was entirely without effect. However, the administration of the test substances subsequent to the giving of larger amounts of iron produced a noticeable effect. There occurred a second reticulocyte response followed by a rise in the concentration of hemoglobin greater than that observed in the same patient with iron alone. Similar results were obtained when the materials were given parenterally, thus indicating that the effect of the chlorophyll derivatives was not one of increasing the absorption of iron from the gastro-intestinal tract.

While further work is necessary before conclusions are drawn, this investigation does suggest that, in the presence of adequate amounts of iron, the body may be able to use preformed pyrrol substances for the building of hemoglobin. However, as was stated,[7] it should be emphasized that such substances are not recommended for therapeutic purposes, since iron therapy alone is an adequate treatment in most cases of uncomplicated chronic hypochromic anemia.

SEDIMENTATION RATE IN JUVENILE RHEUMATISM

Few recently introduced laboratory tests have been studied in relation to as wide a variety of clinical disorders as the so-called blood sedimentation test. In the rheumatic diseases, for example, most are agreed that the rate of erythrocyte sedimentation usually parallels closely the activity of the disease. Why this should be so, and why there are some notable exceptions, is still largely a matter of conjecture. Payne and Schlesinger [1] have recently reported further studies on the sedimentation rate in juvenile rheumatism.

They first divided their patients on a clinical basis (without reference to the test) into active and nonactive cases. The criteria used were pulse rate, temperature, weight and cardiac signs; in doubtful

6. Bürgi, Emil: Das Chlorophyll als Pharmakon, Leipzig, Georg Thieme, 1932, cited by Patek.[7]
7. Patek, A. J.: Chlorophyll and Regeneration of the Blood: Effect of Administration of Chlorophyll Derivatives to Patients with Chronic Hypochromic Anemia, Arch. Int. Med. **57**: 73 (Jan.) 1936.
1. Payne, W. W., and Schlesinger, Bernard: A Study of the Sedimentation Rate in Juvenile Rheumatism, Arch. Dis. Childhood. **10**: 403 (Dec.) 1935.