interessieren, wie ein kurzer Abschnitt über das lebende Protoplasma von Wert gewesen. Die Fibel gibt dem Mediziner Anregungen, sich über die interessierenden Kapitel in größeren Werken zu informieren, wo dann auch weitere Anleitungen für kolloidchemisches Arbeiten und Denken zu holen sind. Leider fehlen außer den angefügten Buchankündigungen hierzu die Literaturhinweise fast vollständig. A. Pischinger (Graz).

Fricke, Hugo and **H. J. Curtis, Electrical impedance of suspensions of leucocytes.** Nature **135**, 146—147, 1935.

The resistivity and parallel capacity of suspensions of leucocytes from rabbit peritoneal exudates are measured by the authors' methods at frequencies from 0.25 to 16,000 kilocycles/second. These measurements lead to the conclusions: (a) that the impedance at the white cell surface is due to the presence of a poorly conducting membrane which acts as a static condenser, (b) that the capacity per cm^2 of surface of the white cell is about the same as that of the red cell surface, and indicates that the thickness of the poorly conducting surface membrane is of the order of 10^{-7} cm., and (c) that the specific resistance of the white cell interior is only a few times that of plasma. The electrical properties of mammalian white cells, in fact, are very similar to those of mammalian red cells. Ponder (Cold Spring Harbor).

Fricke, Hugo and **H. J. Curtis, The electrical impedance of hemolysed suspensions of mammalian erythrocytes.** Journ. gen. Physiol. **18**, 821—836, 1935.

This important paper deals with changes in the capacity and resistance of the mammalian red cell membrane as the result of various kinds of hemolysis. In the case of hemolysis by hypotonic solutions, the cells swell without any observable change in the electrical properties of the membrane. They then hemolyse, but the membrane capacity and resistance persist after the lysis has occurred, showing that although the membranes must have been quite permeable at the moment of lysis, the semi-permeability is restored, more or less, shortly thereafter. Some "injury" to the membrane, however, occurs during the lytic process, for the frequency dependence of the capacity is altered. In the case of the chemical lysins such as saponin, digitonin, the bile salts, etc., the membrane capacity and resistance disappear completely if enough lysin is added and if sufficient time is allowed. When smaller amounts of lysin are added, the resistance and capacity fall steadily to a new level characteristic of the quantity of added lysin, and the authors regard this as evidence that under such circumstances a certain number of the cells are wholly disintegrated, while the rest are injured to a slight extent only, as is again shown by a change in the frequency dependence of their capacity. This complete disintegration is certainly a stage far beyond that of "complete hemolysis", for with an amount of saponin sufficient to hemolyse the suspension in 5—10 minutes the capacity and resistance are not greatly different after the lysis from what they were before, i.e., the cells, though hemolysed, are still substantially non-conducting. This, together with the similar evidence for restoration of semi-permeability after lysis with hypotonic solutions, is the most important point in the paper. Ponder (Cold Spring Harbour).

Jacobs, M. H., H. N. Glassman and **Arthur K. Parpart, The temperature coefficients of certain hemolytic processes.** Journ. Cell. and Comp. Physiol. **7**, 197—225, 1935.

The red cells of different mammals fall into two sharply defined groups as regards their behaviour in isosmotic glycerol solutions. The cells of man, the rat, the mouse, the rabbit, and the guinea-pig show rapid hemolysis with a low temperature coefficient, and the lytic process is greatly retarded, in the case of the cells of man and of the rat, by CO_2 and other acids, and also by traces of copper. In