summary indicates briefly the precise nature and results of the demonstrations (including two control tests—4 and 5), which were made with thin rubber bags in ordinary glass bottles.

The bags were securely supported in the bottles and the mixtures were shaken occasionally during the demonstration. The bags were found, after the adjournment of the meeting, to be without defects.

Numerous related experiments are now in progress.

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Comparative dialysis experiments, with demonstrations.[1]

By **F. G. GOODRIDGE** and **WILLIAM J. GIES.**

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When dry bags of rubber, gold beaters' skin, parchment and collodion, each containing olive oil and Sudan III, are separately immersed in olive oil, and the remaining conditions of the environment are uniform, diffusion of the pigment promptly occurs through rubber, but does not take place at all through any of the other three membranes. When the bags are lifted from the oil, washed externally with ether, and then immersed in ether,[2] the pigment quickly passes through the rubber, but diffuses very slowly if at all through the remaining membranes.

Successive immersions of *moist* impermeable membranes (gold beaters' skin and parchment) in alcohol and ether, for different periods of time, fail to render the treated membranes more per-

[1] This and the two preceding communications relate to studies in a projected series on *physico-chemical conditions in the cell*, which in turn constitutes a section of a comprehensive plan of research on the composition of protoplasm as well as the structural and dynamic relationships of cell constituents and products. These investigations are now in progress in the Laboratory of Biological Chemistry of Columbia University, at the College of Physicians and Surgeons, and under the auspices of the George Crocker Special Research Fund.

[2] In experiments which the senior author has been conducting with Dr. Welker's cooperation, it has been found that collodion bags are disintegrated by *ether containing more than about 1.5 per cent. of alcohol. Pure ether* does not dissolve or in any way disorganize collodion membranes. A collodion bag containing *pure* ether may be immersed for a week or more in *pure* ether without undergoing any appreciable deterioration.

meable to Sudan III under the conditions of the experiments already described.

The authors demonstrated the general facts in this connection pertaining to rubber and gold beaters' skin.

Experiments along these lines, with additional membranes, pigments and liquid media, are in progress, in an effort to obtain further knowledge of the functions of membranes in diffusion.

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Occurrence of spontaneous lesions in kidneys and livers of rabbits and guinea pigs.

By **W. OPHÜLS.**

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In view of the importance of the occurrence of spontaneous lesions in the kidneys and in the livers of rabbits and of guinea pigs in reference to the experimental work on these organs, Dr. E. C. Dickson and myself have made a careful study of these organs and incidentally of the heart and of the aorta in fifty rabbits and in one hundred guinea pigs. The animals used were partly fresh animals from the market, partly animals raised at the laboratory.

Many of the rabbits had been used in the physiological laboratory and had been killed immediately after the experiments; some died of coccidiosis; a few had been injected with material supposedly containing pneumococci without result; others had never been used. Several old rabbits that had been in the laboratory for a year or longer were especially selected on account of the greater likelihood of the existence of renal or hepatic lesions in them. Twenty-eight rabbits, among them some of the old ones, had entirely normal kidneys, nine showed slight parenchymatous lesions, three a few small areas of cellular infiltration. In ten we found scattered small areas in which were marked interstitial lesions with the formation of small depressions on the surface. Four of these proved to be radially arranged chronic septic foci which extended from the vicinity of the papilla to the outer surface.