GLOMERULI OF THE KIDNEY.

hæmoglobintivity. Thus lution of the ven time the dly increased.¹ ruli under the oglobin in the d to vary from arine contained noglobin in the ch. Variations ch more hæmoood-serum, can tion at present

t is perhaps an ted that if an er unit-volume beyond those W. Schmidt⁵ m and salt, and ium chloride to irea from 0.006 in a series of salt, found that berg), and oneoriginal fluid. brought. The o vary without newy found now other-fluid. Nor nount of excess granting that a , some increase nstitutents over 3 Ibid. p. 407.

861).

1885).

the amount present in the original solution, it is clear that not even the most favourable of their results can explain the great increase I have found in the proportion of hæmoglobin in the urine over that in the blood-serum, an increase of nearly 250 per cent. and one most striking to the naked eye.

In his experiments upon the überlebende kidney-that is to say, on the kidney after extirpation—Immanuel Munk¹ arrived at similar results with regard to other substances which are generally considered to be excreted through the glomeruli, using easily-diffusible salts such as the chloride, phosphate, and sulphate of sodium, and also sugar. Thus he determined that the secretion was without exception richer in chloride of sodium than the blood-serum passed through the kidney, to the extent of from 20 to 67 per cent.; in the case of sulphate of sodium 45 to 74 per cent., and in the case of sugar 60 to nearly 90 per cent. The method employed cannot however be considered wholly satisfactory. An organ removed from the body may in the absence of central nervous influence be more easily experimented upon; but no external warmth, and no artificial circulation commenced a quarter of an hour or more after removal of the organ from the abdomen, can ever replace exactly, or even nearly, the bodily conditions. Nevertheless positive results such as these (coupled with the fact that Munk was able to obtain under these conditions the synthesis of hippuric acid) cannot be explained away; rather it is to be considered that had the organ been in the body the results would have been still more marked. When, however, Munk declares that he cannot reconcile his hæmcglobinuria observations with mine, then I submit the implied criticism is invalid. Because in his extirpated kidney, with its greatly-diminished vitality, he could produce no increase in the percentage of hæmoglobin in what he himself terms the 'artificial' urine over that in the bloood-serum, he is still far from proving that under more normal conditions the increase does not obtain.

There is, then, direct and indirect evidence of the secretory activity of the glomeruli, evidence which would seem clearly to indicate that the passage of fluid through these bodies is not a mere transudation. It will be evident from what has preceded

¹ Immanuel Munk, Virchow's Archiv vol. cvii. p. 307 (1887). THE PRACTITIONER. – Vol. XLII. No. 4. S