

out the rationality of combating disease and aiding normal functions by the administration of preparations of these glands. Since the cells of the various organs may be influenced in their functioning by substances procured from other animals, the possibilities at once opened up are immense. Progress to the ultimate control of many complicated conditions, is limited only by the capabilities of the scientific workers to produce satisfactory preparations of established and uniform activity.

This is an all too brief outline of hormone therapy to-day. New pathways in this field of therapy are opening up yearly. The principles of hormone therapy explains in many respects the action of the older drugs and affords solid ground-work for future methods of treatment. For these reasons I commend the glands of internal secretion to your further interest and study.

VOLATILE AND ODOROUS CONSTITUENTS OF HUMAN URINE.

At ordinary temperatures the amount of volatile acids in urine is very small, and the characteristic odor is not due to them, as has been stated. The lower fatty acids occur in such minute traces in normal urine, and are present in salts or in combination, so that they can only slightly, if at all, modify the odor. Sulphuretted hydrogen is given off by all urines, in the cold, when they are treated with dilute phosphoric or sulphuric acid. The volatile substances were obtained by acidifying a large volume of urine with sulphuric acid before distillation. Benzoic acid, derived from the hydrolysis of hippuric acid, was the principal volatile acid found, although in many cases the hydrogen sulphide present was sufficient to account for the total acidity. Fatty acids up to heptylic acid, and possibly hexahydrobenzoic acid, were also present in minute quantity. Phenol and paracresol were present, also notable quantities of higher phenols. Methylamine and indole occur in traces in fresh urine; the amount of these bases increases on fermentation. None of these are responsible for the characteristic odor of urine. This is due to a neutral substance, urinod. It was obtained by acidifying 1,000 litres of urine with sulphuric acid, allowing it to stand for several days, distilling, shaking out the distillate with ether, and removing the acids, phenols, and bases from the ether extract by the usual methods. The residue was then distilled, the distillate again shaken out with ether, the ether extract being shaken with mercury to remove sulphur. The purified ether residue was then fractionated *in vacuo*. Urinod was thus obtained as a yellow oil, slightly heavier than water, in which it is insoluble, with a very persistent, penetrating odor of urine. A drop on a filter paper retained its odor for fifteen months. Its empirical formula is C_6H_8O : boiling point, 108° C. under 28 mm., or 208° C. under normal pressure; but it does not distil under ordinary pressure without decomposition. It is very volatile in aqueous vapor. Urinod is extremely poisonous; its relation to metabolism is not known. It may have some influence as a cause of uræmia. Oxidising agents at once destroy it; hence these are best for use for deodorizing urinals.—W. M. Dehn and F. A. Hartmann (*J. Amer. Chem. Soc.*, 1914, 36, 2,118, 2,136).