INTRODUCTION

Problems of human fertility and sterility have always attracted considerable interest. The attention has been chiefly directed to the ovaries and the uterus, and much important information has been gained through these studies. However, the Fallopian tubes with their intermediate position have been more or less completely disregarded and have frequently been ascribed a transporting function only. The relative lack of information about this organ applies to all branches of study including morphology. This seems the more remarkable as the fertilized ovum during its passage through the Fallopian tube depends on the surrounding medium for its normal development (22, 23, 53, 54).

In the oviductal epithelium, secretory non-ciliated cells are found together with ordinary ciliated cells. The height of the epithelium is known to vary during the menstrual cycle (49). Histochemical studies on the human epithelium are scarce and in part contradictory. The fact that the epithelium consists of two different kinds of cells has sometimes been disregarded. As to the difference between these cells only glycogen has been studied more extensively (25, 26). The tubes of some other species have been studied more thoroughly by histochemical methods (11, 24, 52). The functional importance of the epithelium was experimentally first illustrated by Westman et al. (53, 54), and since then a number of papers have appeared dealing with different physiologic aspects (5–8, 14, 21–23, 28–31, 33, 47 > 5º).

A histochemical study of the distribution of some epithelial substances and enzymes in the oviduct and their appearance during different functional phases seemed to be of interest. In this way a better understanding of the different features of the oviduct might be obtained and a basis for further studies would be established.

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The present study was initiated with this background. However, the histochemical investigation needed a rather extensive revision of available techniques to secure reliable results, and some new methodologic principles were elaborated. These studies are included in this discussion as they are of importance for the interpretation of the histochemical findings. It was also evident that the morphological basis for studies of this kind had not yet been well established, as the question, whether transformation of ciliated into secretory cells occurs or not, had not been definitely answered. This problem was therefore also attacked.