

safely say, either possesses or has possessed it. In every tissue, to the end of the life of that tissue, there is a constant, even if slow death of certain cells and replacement by cells of the same order, derived by proliferation of cells of that order. There is latent, that is to say, in all the living cells of the body a capacity for multiplication requiring only the necessary stimulus to call it into play. The habit of growth to which I have referred above is an exaggeration, or more exactly, a calling into full activity of this latent capacity.

This latent capacity for growth is much more intense in the vegetable kingdom, and numerous examples might be given in illustration. I need only remind you that if you nip off a piece of a begonia leaf, and place it under favourable conditions, that piece will develop into a complete plant. The cells of this leaf, highly differentiated as it is, have the latent power of orderly proliferation to such an extent that they can reproduce the whole plant.

Among the lower animals the same property is equally well marked. Cut a hydra into, I believe it may be said, almost as many parts as there are cells, and, provided that healthy and intact cells are left in the sections, each portion will develop into a complete hydra. The latent capacity for growth is such that each cell appears to have the potentiality not simply to produce cells of like order, but to reproduce the whole animal.

Ascend higher in the scale, and the latent capacity becomes more limited. In the crustacea for example, the potentiality is restrained to the reproduction of lost parts. Here the cells of various tissues proliferate harmoniously, and every tissue of the lost part is reproduced in proper proportion. Ascend yet higher, and the latent capacity is yet further restricted; so that in man we observe the following, namely, that only the cells of certain relatively simple tissues possess to any marked degree the power of complete reproduction.

It may be said that all this is trite and commonplace, and it may be asked what it has to do with the pathology of carcinoma. Well, the recapitulation is valuable to this extent that it helps to impress upon us the proliferative capacity of the cells of the body, and the limitations to that capacity in the higher animals. As a matter of fact, it is only in the higher animals in which these limitations have been impressed upon the cells that malignant growth is possible and is found. In lower animals any stimulus to cell proliferation leads to reproduction either of the whole individual or of a complex of tissues.

Recognising, then, the existence of this latent power of proliferation on the part of cells with the limitations that I have mentioned,