

Of special note were the defensive methods presented by the host, preventing the continued aberrant growth of these misplaced epithelial cells. Primarily, the inflammatory cells, through their activity, produced degenerative changes in the flap cells, but of greater importance was the connective tissue response which seemed to form the main defensive barrier, not only surrounding and barricading the cell growth, and curtailing its blood supply, but actually invading and organizing the mass. The fibroblastic cells arose from all sides and appeared to actually crush out of existence the threatened continued epithelial growth. Occasionally, giant cells of the foreign body type appeared as destroying factors. The microphotographs illustrate a variety of the histological changes observed.

Although the nodules thus far studied appeared at times to thrive, and attained in part the appearance of malignant growth, the eventual outcome, as a whole, was degeneration and fibrosis. However, three animals with persistent nodules are still under observation.

The failure of formation of true epithelial neoplasms in these experiments appear attributable, not to the lack of impetus or inherent cell proclivity of the invading epithelium but rather to the inhibitory or restraining influences put into action by the defensive factors of the host. It is known that some species of animals demonstrate a natural resistance to epithelial neoplasm, especially for certain anatomical areas. It is not unlikely that such factors of resistance prevail to a great extent in the mammary gland of the rabbit.

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#### **Evidence limiting the time of inception of intrauterine digital amputations.**

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Evidence is derived from epidermal ridge configurations, in four subjects admitting diagnosis of congenital amputations (as opposed to agenesia), which points to the existence of the affec-

tion probably prior to the eleventh week of gestation. Three of the cases are considered in another publication,<sup>1</sup> where they are recorded as numbers 20, 508, and 509; a fourth, a still-born infant presenting multiple digital amputations in varied degrees, is comparable to 509.

It has been shown<sup>1</sup> that the alignment of epidermal ridges, hence their fashioning of patterns and of patternless series of ridges, is accomplished through the medium of growth forces obtaining in early fetal development. Such forces in growth vary locally, in accordance with the irregular molding of palmar and plantar reliefs. The influence on alignment hardly can be effective after ridges are initially elaborated (eleventh week), although it is possible that the regulation through growth may manifest its effect before the ridge anlagen actually appear. There is no evidence to show that a ridge arrangement, once effected, can be altered, barring, of course, its participation in the generalized increase of size. With this premise of permanence, coupled with the demonstrated genetic relation existing between the form of a part and the character of its ridge configuration, it is warranted to assume that a congenitally defective hand or foot will display configurations conforming to its particularized molding if the abnormality existed during the critical period of ridge determination. Such conformity is invariable in abnormalities which are initially present in the member (such as syndactylism, ectrodactylism, etc.). The conformity occurs also in the examples of amputation here reported, to the extent that the configurations are individually unique, being so far modified from the normal. This fact leads to the conclusion that the amputations had progressed far enough, by the time of ridge determination, to have affected the form of the involved parts.

Detailed description and figures are presented in the cited reference, where, it may be explained, the cases are utilized as illustrations of the faithfulness with which configurations are accommodated to contours.

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<sup>1</sup> Cummins, H., *Am. J. Anat.* (in press).