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Multiple tumors in mice.By **J. W. JOBLING.***[From the Rockefeller Institute for Medical Research.]*

During about two years we have obtained twenty-six mice with spontaneously developed tumors. Of the twenty-six mice, five showed two or more tumors of different types.

In two, the superficial and larger tumor of the two was situated on the chest wall ; they were spindle cell sarcoma.

In one, in addition to the sarcoma, both ovaries were much enlarged by papillary cyst-adenomata. The other mouse with the sarcoma showed a 3 mm. wedge-shaped mass in the left lung which was not a metastasis, but a papillary cyst-adenoma.

In three other mice, the large superficial tumors were adenocarcinoma and the primary lung tumors, cyst-adenomata. It might be supposed that the lung tumors were metastases, but a study of sections showed great differences between the superficial and lung growths. Metastases show, as a rule, many mitotic figures, while the tumor of the lung, regarded as primary, show karyokinesis exceptionally. Next, the type of cell in the metastases corresponds with that of the primary tumor, besides which the cells are usually packed so closely that the cell outlines are lost, while other differences in protoplasm and nuclei occur. Again, there is little stroma in metastases, unless acini are present, in which case they are easily distinguished, while in the primary papillary growths there is a definite supporting framework. And finally, metastases tend to be invasive, while primary growths do not. The last statement is based on the point noticed that in every instance the primary growth projected from the surface and there was atelectasis of the surrounding tissue, while in metastatic nodules the growth can usually be seen extending into the alveoli without compressing the lung, or else it is confined to blood vessels. These primary lung tumors correspond very closely with those described by Tyzzer.