

who had died of cardiac disease. The specimen consisted also of the 4th and 5th ribs, but in this case of the right side.

In this patient there had been a particularly wide space noted between the 5th and 6th ribs on the left side, and on the right side the bifurcation of the rib was very noticeable upon removing the pectoral muscles. Here the upper process was 20 mm. long and continued roughly the general course of the rib, while the lower process, 25 mm. long, was given off from the main body at an angle of about 30°. Careful counting of the ribs in this case showed that only eleven pairs were present, the last of the series having all the characters of the ordinary floating twelfth rib. Unfortunately the exigencies of time prevented in this case the removal of more than the outer portion of the ribs, and the vertebrae were not carefully examined. The post-mortem notes contained an entry to the effect that eleven pairs of ribs were present in the second case also. With regard to this he could not speak so positively, but he believed the statement to be correct. If so, these cases presented examples of a condition not hitherto recorded. Additions to the series of ribs both above in the cervical region and below in the lumbar region were not infrequent. There was one case at least on record of almost complete absence of the 1st rib and several instances of complete absence of the 12th; but diminution in number by fusion of mid-dorsal segments and their ribs was a condition of which he could find no mention. At the same time, when the variation in the number of lumbar, sacral and even cervical vertebrae was taken into account, there was undoubtedly an inherent probability that such fusion or dropping out of a somite of the body could occur in the mid-dorsal region. The fullest description that he had come across of cases of bifurcation of the ribs and their cartilages was given by Professor Struthers in the 9th volume of the *Journal of Anatomy and Physiology*. This observer, in describing a collection of specimens exhibiting variations of the vertebrae and ribs in man which he had accumulated during many years, gives notes upon five cases, two of bifurcation, two resembling the first case mentioned of ribs broad at the sternal end with bifurcated cartilage, and one in which the cartilage alone was bifurcated. It was interesting to notice that in three of these cases the variety was ascertained to be of the 4th rib—in one it was probably of the 4th, in the other two probable of the 4th or 5th. Evidently, therefore, taking the cases here described also into consideration, there was a special tendency for this variation to affect either the 4th or the 5th dorsal segment. In one of his cases Struthers stated, and in a second implied, that the number of ribs was normal.