ance of the chest and the decreased movement usually do not differ from that seen in the pneumonia. In a few instances of empyema the intercostal spaces may show slight bulging. In no case of this series was the apex beat displaced.

Palpation.—By ordinary rules we should consider the results of this to be the most reliable means of distinguishing between pleural effusion and consolidation. The findings of this series, however, showed many anomalous observations. In empyema there were ten cases in which the vocal fremitus was present although diminished. It may be said that in only one of these was the empyema encapsulated, as proved by operation, and only one was in a patient below the age of fifteen years (in children, of course, the physical signs of empyema are very variable). In two cases with wooden dulness the vocal fremitus was well marked. In one case it was well marked on the fifteenth day and absent on the seventeenth day. In delayed resolution we find the same puzzling findings. Among 32 cases with careful notes on the vocal fremitus, in 8 it was about normal, in 13 it was increased, in 10 it was definitely diminished, in one being almost absent, and in one it was entirely absent. Thus in one-third of the cases there was a marked decrease in the vocal fremitus when we should expect practically always an increase.

When we seek for an explanation of these findings, there are several points which must be considered. In empyema with lobar pneumonia, there is sometimes a consolidated lung which cannot retract and which transmits the fremitus more strongly than normal. In several of these cases at operation it was found that the lung was adherent to the diaphragm. Conditions of tension may be present which permit of the conveyance of the vibrations as is sometimes seen in a massive pleural effusion. In delayed resolution there are several possible factors. The presence of casts in the bronchi may be the explanation of the decreased vocal fremitus in a few cases: in others the condition of the lung tissue may be a cause, some cells being free of exudate while others contain it. But probably by far the most frequent cause is the presence of exudate on the pleura which may be of sufficient thickness to prevent the transmissions of vibrations. In some cases of this series there was a friction rub present at the time of the reduced fremitus.

Local tenderness on palpation was made out only in one case. There may be a certain amount of resistance made out by palpation, but this is usually better perceived on percussion.

Percussion.—In both conditions this may show but little difference from the note during the pneumonia, or, especially in empyema, it may be followed by increasing dulness and a gradual change in the character