suggested that the contracted lung over fluid is in a physical state resembling hollow viscera, and produces a note more by the vibration of its contained air than the mixed tone of its air and its stretched pulmonary connective tissue, etc. Possibly this is so. As far as I have observed, however, it has seemed to me that the note is identical with that of the trachea and large bronchi, or abdominal viscera. In children, the relatively large size of the bronchi and trachea compared to the vesicular part of the lung, together with the very elastic chest-walls, makes the occurence of this note, under the conditions we are considering, very common.

The cracked pot sound is heard frequently beneath the clavicles of healthy children, as well as over cavities, consolidated and compressed or contracted lung, and in pneumothorax. The fact that it is heard so often over normal lungs in the infraclavicular region in children throws, I think, much light upon the mode of its production. The walls of children's chests are elastic, the bronchi and trachea relatively of large size. The sound is best heard when, the mouth being opened, a rather heavy blow is struck, the plexor being allowed to remain upon the pleximeter. This annuls, as far as may be, all thoracic vibration. The blow is really a pushing one, which is calculated to compress the lung and drive a good deal of air into and through the large tubes, larynx, and mouth : this causes the sound. It may be fairly imitated if, when a patient whispers, the chest be suddenly squeezed just as a word is being uttered, both hands of the observer having been placed over the In the case of consolidated lung, or lower ribs. lung over fluid, is it not probable that precisely the proper degree of elasticity may, in some cases, obtain to admit of drawing air out in a similar way? In pneumothorax also, with free opening into a large bronchus, and in some cases of cavity, this explanation seems reasonable.

Precautions to be observed in Percussion.-Probably many good auscultators exist for one good The note obtained in percussion is percussor. often very complex and difficult of analysis, the more difficult being of short duration. Pitch and quality are hard to separate. Moreover, percussion is usually hadly taught by instructors. Not to weary you with the well-known advice regarding the mode of striking, etc., and the necessity of striking a quick blow, I wish to call attention once more to the great need of comparing the results of lighter and heavier blows, and also of examining the patient standing, and with the body naked when possible. I wish also to emphasize the value of the much-neglected study of the sensation conveyed to the finger used as the pleximeter. By this finger the sensation of resistance will often give a better idea of the level of fluid than the ear. In children's chests the sensation is of

especial value, since their elastic chests often give notes from both sides. It is, moreover, remarkable what slight differences of pitch and quality may thus be appreciated.

Auscultatory Signs.— Bronchial Breathing. — There is no doubt that this sound is produced by the air-currents in the larger bronchi and trachea, and possibly the larynx, nose, and mouth. It is heard normally over the trachea, the sternal notch, and upper part of sternum, and sometimes in the vertebral region near the scapular spines. It is also usually heard over consolidated and compressed or contracted lungs (especially, in the latter case, at or near the level of fluid, and sometimes below this level), over cavities, and over tumors (including aneurism) pressing upon the larger bronchi.

Its characters need no description, but, for reasons which will appear later, I wish to remind you that in it there is a pause between inspiration and expiration, and that expiration is prolonged and higher-pitched than inspiration. In cases of consolidation (as pneumonia), it seems probable that the solidified lung conveys sound better than the normal lung, and therefore is much like a stethoscope applied directly to a bronchus. The usual propagation of this sound at or near the level of fluid is explained, partly by the fact that here we have practically solid lung, and partly, probably, by the reflexion of the sound from the fluid. The absence of all sounds in most cases below the fluidlevel is probably due to the fact that, though sound travels well through liquids like water or serum, or through solid tissues like compressed or solidified lung, it does not readily pass from solid to fluid media, or vice versa. Thick masses of fluid, therefore, usually prevent its transmission from the lung, while the contracted lung, at and near the fluid-level, forms a good sound-carrier.

It remains to speak of two conditions : where there is absent breathing over solidified lung, and where there is bronchial breathing below the level of fluid.

Absence of breathing over solidified lung may be found where the whole or a part of a lung is involved. In the former case it is possible that practically no air enters or leaves the larger tubes. In the latter, possibly a plugged bronchus may account for the phenomenon; possibly at times the consolidation is of such character as to transmit sound badly, resembling more or less in physical character œdematous exudate. Possibly in some cases the diminished movement of the affected chest may explain it.

Bronchial breathing is often heard below the fluid-level in adults with a very full chest, and in children. In the latter the relatively large size of the bronchi seems to explain the fact. In the former, with over-full chests, the fluid and compressed lung together are practically like consoli-