

various valve actions, and of these the direct-acting piston valve is now far the most widely used. Its various original defects have been overcome, and without the brass valve instruments, military bands as we now understand them could not exist.

The one cup-blown instrument capable of giving a scale, which has not changed in principle and very little in detail since it was used with the old zincken, or cornetti, is the trombone. As a great portion of the length of this instrument is cylindrical, the introduction of a shifting slide is possible, and the various lengths thus obtainable afford the means of altering its fundamental note, and introducing new series of harmonics by which the scale is completed.

D. J. BLAIKLEY.