up much space, but which help the student to understand the subject in a short time. Hence, even the first elements of any branch of medicine are often most easily learned from a large and exhaustive treatise. In our opinion, therefore, a small book starts with a serious handicap, and is most difficult to write satisfactorily. Dr. Gorham Bacon has overcome the difficulty to a remarkable degree.

A large portion of the book is very properly devoted to the consideration of suppurative inflammation of the middle ear, its complications and sequelæ. The affections of the internal auditory or sound-perceiving apparatus receive rather scant notice. The work is pretty freely illustrated, but the drawings are chiefly taken from Gray's Anatomy and from Politzer's text-book. The original ones are mainly photographic reproductions of preparations, and are rather indistinct. A few of the stereotyped common otoscopic pictures of the indrawn membrane, the various types of perforation and cicatrices, and so forth, would have been useful additions.

Among the well-described diseases of the external meatus, we are glad to find *seborrhœa*, which is often overlooked both by practitioners and writers of books. We are surprised not to find that important condition, desquamative external otitis, known also as *keratosis obturans*, or external cholesteatoma, which is so apt to be mistaken for simple cerumen, with the most unhappy results, if the treatment recommended for cerumen—soda drops, etc.—is carried out. In the account of the examination of the ear, no mention is made of the valuable and well-established fact that in infants and young children the auricle should not be drawn upwards, but downwards. The book is written in a good, readable style, and, as Dr. Clarence Blake states in the thoughtful and suggestive introduction which he has contributed, the work will be found to bring that stimulation to further study which is one of the purposes of all teaching.

Dundas Grant.

Campbell, Harry, M.D., B.S. Lond.—*Respiratory Exercises in the Treatment of Disease.* Published by Baillière, Tindall and Cox, London, 1898. Pp. 196.

THIS observant and thoughtful physician deserves our gratitude for the study of the interesting subject described in the title of his work. He commences with a consideration of the mechanism of respiration, as including the elasticity of the lungs, functions of the abdominal muscles, elasticity of the thoracic cage, factors determining the mean size of the chest, the mobility of the thoracic cage, the respiratory forces and the modes in which the thorax is enlarged. Among the secondary effects of the respiratory movements are studied their influence on the circulation of blood and of lymph. These are treated still more fully as regards the normal modifications of the respiratory movements, such as talking, shouting, singing, laughing, coughing, crying and sighing. Dr. Campbell's views with regard to the physiological advantage to the individual of making joyful noises are well known, or, in fact, noises of any kind whatever. The chapters which are, however, of the greatest interest to our readers are those upon the modes in which the thorax is enlarged (Chap. IX.), breathing in singers (Chap. X.), and the various kinds of breathing exercises as detailed in Chap. XX. Dr. Campbell holds that it is possible to dissociate completely costal from abdominal breathing, for though contraction of the diaphragm tends to raise the lower ribs, it is possible to check all costal movement during diaphragmatic descent. Though convinced

that the greatest amount of distension of the chest can be obtained by what he calls "pancostal" breathing, in which the clavicles are raised, and with them all the ribs, on the whole he seems to be a strong advocate for the pure abdominal method. It would have been of interest to have had a more definite decision on this point, but (p. 69) Dr. Campbell says: "I must at once confess that I do not at present see my way to recommend very specially any one method to the exclusion of the others." He enumerates the various methods as: (1) Clavicular; (2) pure lower costal; (3) lower costo-abdominal; (4) pure abdominal; (5) abdomino-costal. The difference between three and five depends on the greater prominence of the factors first mentioned. With regard to the divergences in opinion, the footnote, p. 64, to the following effect is very significant: "Nothing better shows the obscurity which prevails regarding the curious modes of breathing for singers than Joal's observations on clavicular breathing." Dr. Campbell considers that if pronounced clavicular breathing is ever justifiable, it should certainly only be employed on rare occasions, and as an extension of the more usual form of breathing; but he has no objection to a modified clavicular breathing, namely, that in which there is a moderate upward and forward movement of the inner ends of the clavicles, as recommended by Cathcart. This increases the upper opening of the thorax, and favours the expansion of the upper portions of the chest, so that a large resonating chamber is produced at a comparatively short distance from the vibrating mechanism. We take it that the injunction to the singer would be to employ the high-arched chest recommended by Curtis, but to avoid elevation of the shoulders. As regards other methods, although the "pancostal" gives the greatest volume of air, Dr. Campbell very shrewdly observes that the singer is not required to distend his chest to the utmost. In comparing the lower costo-abdominal with the abdominal, he observes that the latter is more easy and so far preferable. Over and above a large quantity of air and ease in manipulation of it comes the question of the regulation of the outgoing blast. He quotes Cathcart to the effect that this takes place through the mutual antagonism between the respiratory muscles and the false vocal cords. This, we presume, is his explanation of the "lutte vocale" of Mandl (which appears in the index of Mandl's work under the singular misprint of "luette vocale"), but the "lutte vocale" of Mandl is, we understand, and hold with Dr. Campbell, to be produced by a well-balanced antagonism between the expiratory and inspiratory muscles. From the physiological point of view there seems no doubt that it is undesirable to avoid religiously the distension of the upper part of the lungs in which disease is so very apt to find its seat. The artificial requirements of artistic voice production would seem to call for the attentive practice of the abdominal and lower costal methods, a combination of the high-arched chest recommended by Curtis and Cathcart along with the lower costo-abdominal of Brown and Behnke, and possibly a retraction of the lower half of the abdomen so as to meet all the requirements of the case. How these are to be modified in individual instances must depend a good deal on the judgment of the voice trainer, whose business it ought to be to find out in which direction the pupil's personal tendency leads him to err, and much good would be effected if catholic and unbiassed consideration of the points at issue were given by all who undertake to train the user of the voice. In this they would be greatly helped by a study of Dr. Campbell's work. *Dundas Grant.*