

CLEFT PALATE AND HARE LIP

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Cleft palate and hare lip by W. Arbuthnot Lane

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W. ARBUTHNOT LANE

**CLEFT PALATE
AND HARE LIP**

PREFACE TO SECOND EDITION.

IN this edition I have endeavoured to render my account of the various operative procedures clearer by enlarging the size of the illustrations.

W. ARBUTHNOT LANE.

CAVENDISH SQUARE,
February, 1908.

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CLEFT PALATE AND HARE LIP.

IN order to attain to some precise knowledge of the principles which should guide us in the treatment of cleft palate and hare lip we should first study in detail the factors that influence the growth of the naso-pharynx and of the mouth and of the bones that surround these cavities. *This is most important, since the success which attends these operations, so far as concerns perfection of speech, varies directly with the degree of development of the naso-pharynx and with the freedom of the passage of air through it.* This will place our treatment on a thoroughly scientific basis.

We will consider in the first instance the factors that determine the form of the bones of the face.

The functions of the bones of the face are four in number :

(1) To surround the passages by which air is transmitted to the lungs ;

(2) To sustain the strain exerted by the muscles of mastication and to transmit and diffuse the resistance offered by the crushed food in the forcible approximation of the jaws during its attrition by the teeth. Besides transmitting pressure the teeth exert a considerable influence by occupying space ;

(3) To accommodate the tongue ; and

(4) To surround and protect the eyes.



FIG. 1.—Representing the lower jaw of an edentulous old man.

Experiments are made by Nature on all sides showing the influence which the exercise of these several functions exerts upon the skeleton, all capable of accurate measurement and definition.

If an eye be removed early in life, the degree of development of the orbital space and of the eyelids is, after the lapse of several years, less than on the opposite side.

If any of the permanent teeth are lost in young life, or do not erupt, or do so irregularly, the jaw fails to attain to its full size proportionately to the number of teeth absent. If the teeth are lost after the jaw is fully developed the alveoli waste and the bones along which force is distributed either as pres-



FIG. 2.—Showing the condition of a girl, *æt.* 12, operated upon in 1893. The joint was destroyed when she was 18 months old, and at the operation all trace of it had disappeared completely.

sure or strain become progressively thinner; the rough, prominent surfaces to which the tendinous insertions of muscles are normally attached disappear.

Precisely similar changes take place in the jaw of the edentulous old subject. In extreme instances the character of the temporo-maxillary articulation is

altered. It becomes purely arthrodial in type. Fig. 1 illustrates this condition.

The lower jaw is moulded upon the upper, and anything that interferes with the free movement of these bones on one another impairs their development. Figs. 2, 3, 4, 5, and 6 represent cases of



FIG. 3.—Representing the result of this operation on a boy, *et.* 9, in 1892. The jaw was fused to the temporal bone, no evidence of the original joint being visible.

ankylosis of the temporo-maxillary articulation which have been successfully operated upon, the ankylosed joint having been freely excised. They show that the degree of imperfection of the lower jaw varies directly with the duration of the ankylosis and inversely with the age of the child when the destruction of the joint takes place. In these cases this factor

alone—namely, the movements of the jaws and teeth on one another—was in abeyance, since the necessarily very efficient naso-pharyngeal respiration due to the complete apposition of the jaws had developed the naso-pharynx and the surrounding bones as completely as possible in a manner which will now be considered.



FIG. 4.—A boy, aet. 4, who was operated upon in 1894. The joint had been disorganised three years before.

The tongue is an important factor in determining the form of the lower jaw. This is illustrated very well by the disproportionate development of this jaw which is associated with any increase in size of the tongue, often resulting in an "underhung bite" or in "open bite," conditions familiar to the dental surgeon.