

THE ORTHODONTIC VALUE OF RESEARCH AND OBSERVATIONS IN DEVELOPMENTAL GROWTH OF THE FACE

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THERE is a hymn in the old Methodist Hymn book of which the first four lines are the following:

Ah, lovely appearance of death.

What sight upon earth is so fair.

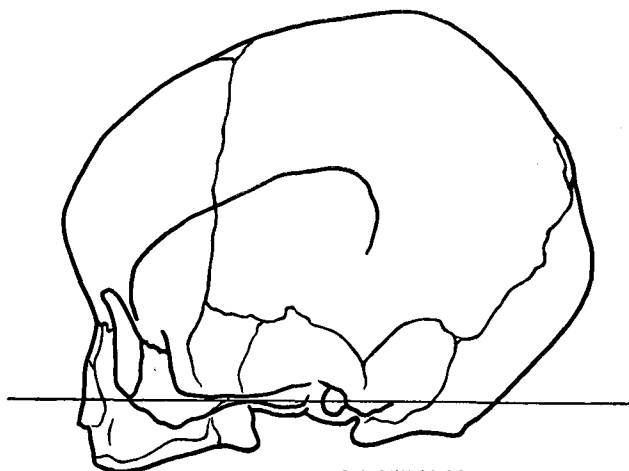
Not all the gay pageants that breathe

Can with a dead body compare.

One might almost call this the Anatomists' Carol. It certainly typifies the undoing of Anatomy. The spirit which could magnify the significance of the dead, blinded itself to the ideals for which Anatomical study could alone be worth while, namely the comprehension of development, growth and repair in the living. Recent years have seen the break-down of traditional dead-house Anatomy with its fixed and narrow ideas, and substitution therefor of the ideal comprehensive Anatomy of the clinic.

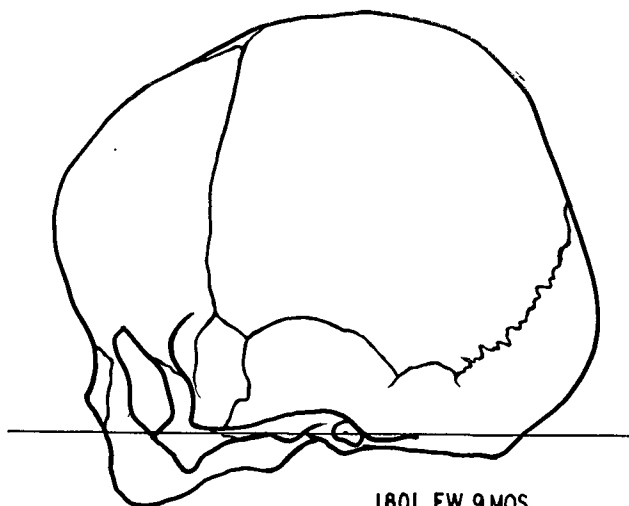
A very forceful instance of this new vision in anatomical study is given by the work prosecuted in the main by the Orthodontists, namely developmental growth of the face. We are so accustomed to think of exact details of facial form and even of the occlusal pattern of the dentition as being determined by heredity that we know practically nothing of the environmental effects upon facial form and all too little of their influence upon occlusal pattern. Nevertheless our faith is justly strong in our power to modify both these characters by suitable treatment. What we can do, Nature undoubtedly is doing and there is just the possibility that we may, in our eagerness, confuse Nature's handiwork with our own.

I propose to present two skulls in contrast in order to illustrate this thesis. One is the skull of a healthy male white baby of four months (WRU 818) who died from an intussusception, the other that of a female white infant of nine months (WRU 1801), the victim of decomposition. She had a birth weight of 3 pounds and was supposed to be a six-months baby. The father deserted and the child was put into a boarding home for six weeks. During this time she was ill with cough and fever. When brought to the hospital she was acutely ill with bronchitis then bronchopneumonia, subcutaneous abscesses, otitis media and decomposition. The skeleton after death showed that development had been arrested at three



818 MW. 4 MOS.

Fig. 1. Norma lateralis skull No 818 W. R. U. Male White 4 months. Death from intussusception. Note the excellent facial development evidenced in the maxillary expansion in harmony with cranial growth.



1801 F.W. 9 MOS.

Fig. 2. Norma lateralis skull No 1801 W. R. U. Female White 9 months 13 days. Death from decomposition. Note the defective maxillary expansion in this skull resulting in disharmony between facial and cranial growth.

In both illustrations the Frankfort horizontal appears to pass through the center of the ear-hole. This is an illusion due to the trumpet-like opening. Actually it is tangential to the roof of the external auditory meatus which lies at a lower level than the apparent upper margin in young children.

months. The difference in sex is of no particular consequence in this study which deals with facial development, not with size.

The two crania are about the same size. Indeed the younger child has somewhat a larger braincase. No 818, the younger skull, has a cranial capacity of 797 cc and No 180, the older, 700 cc. Comparison of the illustrations shows differences in the form of cranial growth which may be hereditary but may also be environmental in origin.

The striking distinction is in the face. Set up in the Frankfort plane, the underdevelopment of the face in No 1801 compared with No 818 is obvious in the oblique slope of the "vertical" axis of the orbit. In No 1801, owing to failure of forward growth in lower face, it does not keep pace with forward growth of braincase. It is also plain that the defective growth is focused particularly upon the naso-pharynx which is far less roomy than in No 818.

In front view the distinction between these skulls is equally marked. The pinched appearance in No 1801 of the lower face beneath the orbits is pathetic.

Anyone is at liberty to question the relative significance of heredity and of disease in bringing about these distinct facial contours but no one would deny that disease does not have some detrimental effect upon growth and development.

A dead child is a defective child in whom there has occurred an interruption or a prohibition of developmental growth for some time before death, unless, of course death is due to an acute disease like intussusception or pneumonia or to accident such as injury or burns. The interpretive study of actual skulls must be tempered by recognition of this fact. If we are to investigate healthy skulls we must do it on the living.

This is the idealism toward which the Angle Orthodontist has set its face. And this is the idealism which imbues Simon, Dewey, Stanton, Hellman, Broadbent, Robison, Barnes and many others who today, each in his own way, seeks light upon the significant features of facial developmental growth. In honoring the memory of Edward H. Angle it is his idealism which we cherish. Ideas are working hypotheses: they have temporary and fleeting significance. Angle himself would have us recognize ideas as of historic interest at best. Idealism is broad and links together all truly constructive workers by its very comprehensiveness. It is an apt illustration of the things which, being shared, increase. The Angle Orthodontist looks forward, not to a narrow sectarianism, but to the continuous upbuilding of the profession which is our common bond.