

Demonstration of skulls showing the effects of cretinism on the shape of the nasal chambers / by Harrison Allen.

Contributors

Allen, Harrison, 1841-1897.
Royal College of Surgeons of England

Publication/Creation

New York, NY : New York Medical Journal, 1895.

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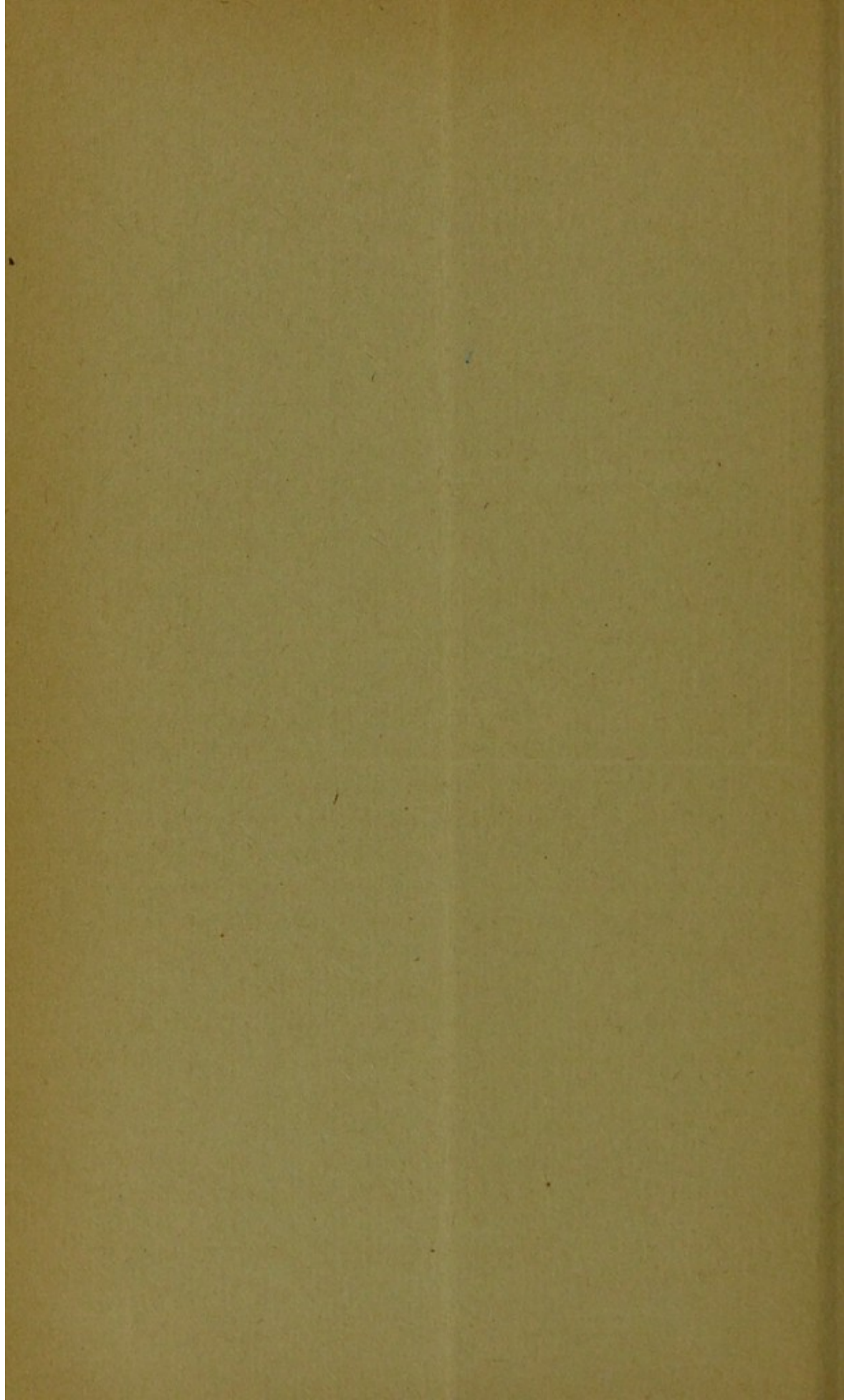
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DR. HARRISON
1324 CHESTNUT ST.

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BY
HARRISON ALLEN, M. D.,
PHILADELPHIA.

REPRINTED FROM THE
New York Medical Journal
for February 2, 1895.



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DEMONSTRATION OF SKULLS
SHOWING THE EFFECTS OF CRETINISM ON
THE SHAPE OF THE NASAL CHAMBERS.*

BY HARRISON ALLEN, M. D.,

PHILADELPHIA.

MEDICAL observers in America have had little opportunity of studying cretinism. But I believe that we are apt to make a mistake in not bearing in mind the possibility of this morbid condition being met with in our clinical services. In metropolitan hospitals examples of cretinous dwarfs are not rarities. As for the conditions described by European writers as those of semi cretins and cretinoids, I believe that they are numerous, but are not so often sought for as they should be.

According to F. R. Sensberg (*Der Cretinismus mit besonderer Rücksicht auf dessen Erscheinung im Unter-Main- und Rezat-Kreise des Königreiche Bayern*, Würzburg, 1825), the skull in cretinism is not of a single type. In the true cretin, that is to say, one associated with goitre, with deep nose root and a bulldog-like head, the skull is thick, the occiput is flat, the sides of the head are broad and usually

* Read before the American Laryngological Association at its sixteenth annual congress.

asymmetrical. The sutures are disposed to disappear early or at least irregularly. Virchow (*Untersuchungen über die Entwicklung des Schädelgrundes in gesunden und krankhaften Zustände und über den Einfluss derselben auf Schädelform, Gesichtsbildung und Gehirnbau*, Berlin, 1857) describes an entirely different type of cretin skull from the foregoing. It exhibits a tendency to synostosis, while a disposition exists to excess as well as in unusual positions of the Wormian bones.

Another cretinoid skull is known in which the bones are thin and in various places are without diploic structure. The mastoid processes are weak. The Valsalvian foramen at the angle of the occiput is large, and the opening between the basilar process and the petrous portion of the temporal bone nearly obliterated, affording but a small space for the passage of the nerves. The basilar process itself is nearly horizontal, thus resembling the condition known as the soft occiput of Elsasser.

Rosch (*Amt. Bericht über die Versamm. deutsch. Natur. u. Aerzte*, 1842, xx, 238-245) describes a cretin's skull in which the occiput, instead of being flat, exhibits a capsule-like projection of the under part; the forehead is low and slightly rotund; the two halves of the head are apparently shoved one on the other ("die beiden Hälfter des Kopfs verschoben und die eine steht hinter der andern zurück"). This language of Rosch is somewhat figurative, but doubtless refers to the fact that the two frontal eminences are asymmetrical, as also are the two sides of the occiput, that side of the occiput which projects farthest corresponding to the side of the skull at which the frontal eminence recedes. This peculiarity of the cranium is by no means confined to the cretin, but is mentioned by other writers, and is ordinarily attributed to Broca; the observation is thus found to be anticipated by Rosch by many years.

Rosch describes another form of the skull—namely, the one in which the bones are thin. The dimensions are too small. The form of the skull is rotund; it may be so high on the sides as to constitute the sugar-loaf head (in some cases the occiput markedly projects, constituting what is called “cat head”), while all prominences and muscular impressions are inconspicuous.

I herewith exhibit two specimens of skulls belonging to the Wistar and Horner Museum of the University of Pennsylvania, showing what I venture to call cretinoid deformation; they are without history, but they conform in a manner sufficiently exact to the descriptions of foreign writers to permit me to so identify them.

In one of these specimens the bones are thick and appear to be imperfectly calcified, while the nose is prominent, the facial portions are stunted, the hard palate being small. I call attention particularly to the projection of the occiput; the occipital bone appears to have effected union with the parietals in such wise as to present a conspicuous depression between them. This appearance is called by some of the older writers “cat head” (Rosch, *supra*); it is by no means an uncommon contour, and can readily be detected in living subjects.

In the second example I show you of cretinoid deformation the nasal bones, instead of being prominent, are inconspicuous; indeed, one may say that there is no bridge to the nose, for the nasal bones, instead of being inclined forward and downward, are vertically disposed, and do not project in the least beyond the plane of the ascending processes of the maxillæ. It might at first sight be inferred that this was nothing more than the “falling in of the nose” as a result of loss of the normal structures by the ravages of syphilis; but the most casual observer will be convinced that this skull was not taken from a syphilitic subject. As

in the first specimen, all the facial portions are dwarfed, the bones are thickened, and the hard palate is small.

In both specimens the inferior turbinated bones are lodged high up in the nasal chambers and give the impression of being of great size. It is probably owing to the extreme shortening of the face that a compensatory growth occurs in these bones in the vertical direction, the posterior nares in both specimens being disproportionately large. The floor of the nose is greatly depressed below the level of the anterior aperture. The frontal regions in both specimens are broad and thick, giving the appearance of the so called "apple head" in dwarfs. The suture between the halves of the frontal bones is apparent.

Bearing in mind the immense variety of appearances that one can secure in phases of malnutrition as affecting the head, and remembering that one must not expect to institute exact standards of comparison in studies of this kind, enough remains for me to be willing to state that the nutritive and developmental processes are evidently at fault in the cretinoid skull. In patients in whom I detect a bulb-like forehead with unnaturally projecting occiput, with depression between it and the parietal bone, where the external nose is dwarfed (or even, as opposed to this, the nasal bones are preternaturally high), the hard palate is small, and the posterior nares are of inordinate size, I should not hesitate to characterize such individuals as being cretinoid. If these conditions exist in persons of small stature (here not speaking of typical dwarfs) I should feel more than ever satisfied in using such a term in describing them.

These remarks are made with the hope that further observations may be elicited on the subject at the hands of those having large opportunities in public services. In these days of extensive immigration which brings large numbers of the impoverished class of Europe to our shores,

it is not irrational to assume that many examples of "semi-cretins" or "cretinoid" individuals may be recorded. It is evident that important phases of prognosis and treatment of diseases of the nose and throat enter into conditions of this kind, and that all states of the development of the head should be known in studying the diseases of the nasal chambers.

