

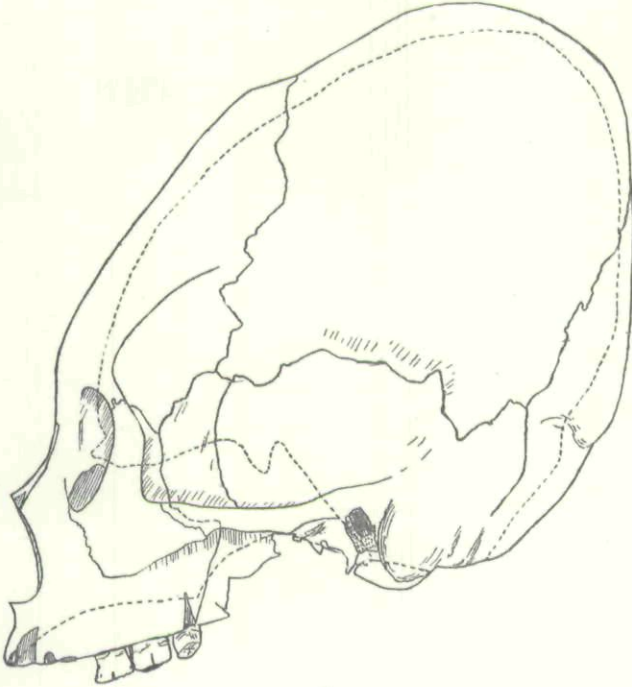
## CRANIUM FROM PROGRESO, YUCATAN.

BY FRANZ BOAS.

CRANIA from Yucatan are extremely rare, only two having been described heretofore. One has been described by John L. Stephens (*Incidents of Travel in Yucatan*, New York, 1843, Vol. I., p. 276 ff.), the other by R. Virchow (*Verhandlungen der Gesellschaft für Anthropologie, Ethnologie und Urgeschichte*, Berlin, 1887, p. 451). A third specimen came into the possession of Mr. Stephen Salisbury a few years ago and is preserved in the Library of the American Antiquarian Society at Worcester. It forms the subject of the following notice. The cranium was presented to Mr. Salisbury by Mr. F. Ybarra, and accompanied by the following letter, dated Mérida, December 9th, 1883:—

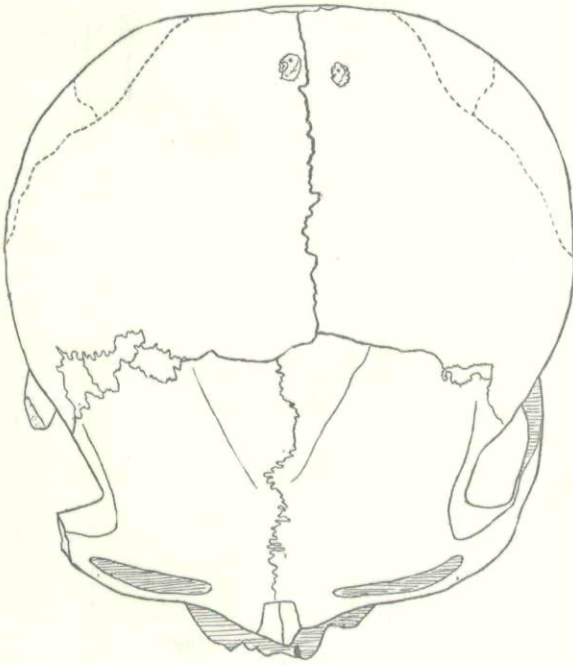
“I send you by this mail a box containing a human skull. The same was given me to-day as a present by Dr. Don Francisco Rubio, who received it from a friend of his in Progreso, in which place it was found while making excavations for the building of a house. Progreso is our port-of-entry. With this relic were found other human remains and some pieces of ancient pottery of little account, according to the information received, because they differed in no way from pieces of the same material found frequently in various parts of the Peninsula. The skull attracted attention on account of its shape, and for this reason the gentleman who had the excavation made, presented it to Dr. Rubio, from whom I readily obtained it in your name as one who has given so many proofs of competency in all that concerns antiquities, and especially our dear Yucatan. We may say that the antiquity of the skull is incontestable, as it comes

CRANIUM FROM PROGRESO, YUCATAN,  
IN THE LIBRARY OF THE AMERICAN ANTIQUARIAN SOCIETY.



1

NORMA LATERALIS.  $\frac{1}{2}$ .



2

NORMA VERTICALIS.  $\frac{1}{2}$ .

from a place in which, according to all information, no permanent town existed. Moreover, on account of the other objects found with this relic, we are led to believe that it comes from the 'Flat-Heads' (*cabezas chatas*). The Reverend Father Carrillo, whom without doubt you know by reputation, makes reference to the Flat-Heads in his 'Ancient History of Yucatan,'<sup>1</sup> explaining the manner in which the ancient Indians proceeded in order to modify the shape of the skull, compressing the heads of the children between two boards. He does not indicate, however, what object they had for this operation, of which he speaks as one of the odd habits of the ancient inhabitants of this country. On the arrival of the skull to-day, the Reverend Father Carrillo, whose opinion is worthy of respect, told me, that, notwithstanding the perfect preservation in which the skull was found, he considered it beyond a doubt that it belonged to an individual of the Flat-Heads, this being the first time that he had had the satisfaction of seeing a complete skull of this tribe or race. Indeed, many endeavors have been made until now, and especially by Dr. Berendt on his various visits to this Peninsula, without his being able to secure more than rather small fragments of skulls of this class, and it has not been possible to obtain complete ones belonging to the Flat-Heads. We cannot help considering the preservation of our relic through so many centuries, very remarkable. It has been observed that on our coast human bodies are frequently mummified in the most perfect manner without any preparation. The reasons for this fact have never been investigated or, better, have never been published. Investigations relating to the human remains of the ancient Indians have always been carried on in the interior of the country, and there these remains have always been found converted into dust. I

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<sup>1</sup> *Historia antigua de Yucatan. Mérida de Yucatan, 1883, p. 277. See Herrera IV., 10, 3.*

wish to assure you most definitely that this is the first skull of any Flat-Head, that since a long time has been found entire in these parts. The deformity of the same shows that it is not accidental."

The writer then goes on to propound a theory that the Indians may have practised the custom of deforming the heads of children in consequence of their knowledge of phrenology, "in order to unfold that charitable, mild, pacific character which is distinctive of the type of the Flat-Heads."

I will give here at once the report of the finding of the skull described by Virchow. It was sent to Prof. Virchow by Dr. H. Curschmann of Hamburg, on June 25th, 1887. Dr. Curschmann says, regarding the find: "I received the skull from a gentleman in Mérida, who has unearthed it himself. It was found in one of the mounds that are so numerous in that country, and are ascribed to the aborigines. These mounds are built of earth and stones, their height [and size?] is said to vary according to the importance of the person buried in them. They contain in addition to the bodies, vessels of earthenware, clay figures and stone axes. A clay mask, arms and legs were found with the present skull. \* \* \* The bodies are said to have been buried without having been enclosed in a coffin. The heads, however, were covered with clay vessels, specimens of which are very difficult to obtain, as the natives break them, whenever they find them, probably on account of some unknown superstition. The skull was unearthed on the Peninsula of Yucatan, between Mérida and Cape Catoche [about 88° W. L. Greenw.]."

The cranium described by Stephens was found in the ruins of Ticul, about thirty miles south of Mérida. Following is an abstract of his report of the find and a description of the cranium: We opened a large structure, with sides four feet high, the top being covered over with earth and stones bedded in it. It stood in a small cornfield mid-

way between two high mounds which had evidently been important structures, and from its position, seemed to have some direct connection with them. Unlike most of the ruined structures around, it was entire, with every stone in its place, and probably had not been disturbed, since the earth and stones had been packed down on the top. \* \* \* In digging down, the Indians found the inner side of the outer wall, and the whole interior was loose earth and stones, with some layers of large flat stones, the whole very rough. \* \* \* \* We continued the work six hours, and the whole appearance of things was so rude that we began to despair of success, when, on prying up a large flat stone we saw underneath a skull. \* \* \* \* The skeleton had no covering or envelope of any kind, the earth was thrown upon it as in a common grave, and as this was removed it fell to pieces. It was in a sitting posture, with its face towards the setting sun. The knees were bent against the stomach, the arms doubled from the elbows, and the hands clasping the neck or supporting the head. The skull was unfortunately broken, but the facial bone was entire with the jaws and teeth, and the enamel on the latter was still bright, but when the skull was handed up, many of them fell out. \* \* \* \* The position of this skeleton was not in the centre of the sepulchre, but on one side, and on the other side of it was a large, rough stone or rock firmly imbedded in the earth, which it would have taken a long time to excavate with our instruments. In digging round it and on the other side, at some little distance from the skeleton, was found a large vase of rude pottery, resembling very much the cantero used by the Indians now as a water-jar. It had a rough, flat stone lying over the mouth so as to exclude the earth, on removing which we found that it was entirely empty, except some little hard black flakes. \* \* \* It had a small hole worn in one side of the bottom, through which liquid or pulverized substances could have escaped.

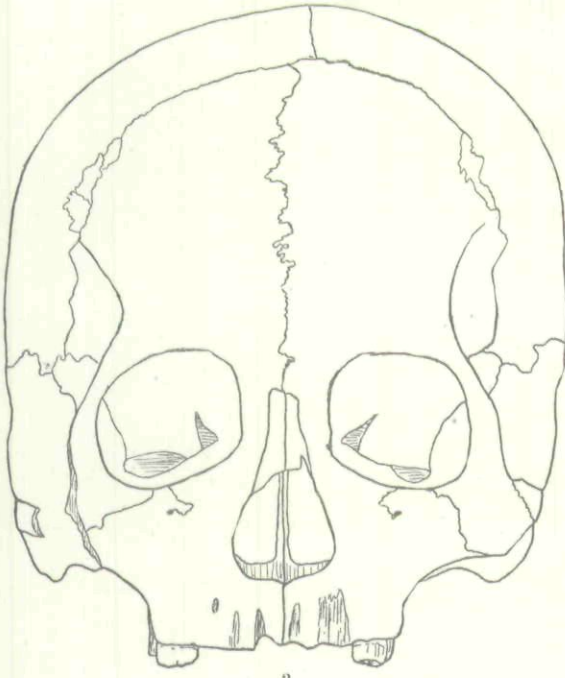
Morton, to whom the remains were submitted, describes

them as follows [Ibid. p. 281]: "The bones are those of a female. Her height did not exceed five feet three or four inches. The teeth are perfect and not appreciably worn, while the epiphyses have just become consolidated and mark the completion of the adult age. The bones of the hands and feet are remarkably small and delicately proportioned, which observation applies also to the entire skeleton. The skull was crushed into many pieces, but the posterior and lateral portions were reconstructed. The occiput is remarkably flat and vertical, while the lateral or parietal diameter measures no less than five inches and eight-tenths (147mm.). A chemical examination of some fragments of the bones proves them to be almost destitute of animal matter. \* \* \* \* On the upper part of the left tibia there is a swelling of the bone, called in surgical language a node, one and one-half inches in length, and more than half an inch above the natural surface. This morbid condition may have resulted from a variety of causes, but possesses greater interest on account of its extreme infrequency among the primitive Indian population of the country."

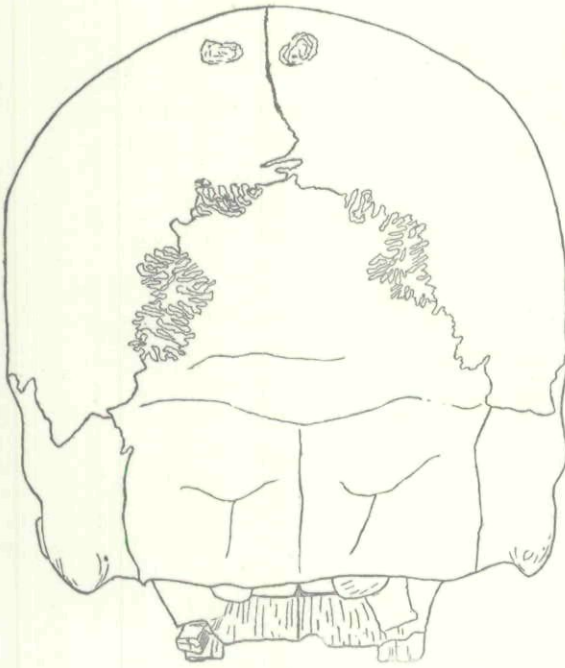
I shall give here the measurements of the skull described by Virchow and of the new skull, side by side. The lower jaws of both of them are missing. The former skull which I will designate as No. 1, is that of a male, while No. 2, the skull in the possession of Mr. Salisbury, is that of a female.

	No. 1.	No. 2.
Capacity - - - - -	1380ccm.	1250ccm.
Maximum Length - - - - -	173mm.	170mm.
Maximum Width - - - - -	156p "	148p "
Vertical Height - - - - -	131 "	130 "
Height [Basion-Bregma] - - - - -		135 "
Length of Basis - - - - -	105 "	91 "
Width of Basis - - - - -	108 "	118 "
Length of Pars Basilaris - - - - -		23 "
Length of Foramen Magnum - - - - -		31 "
Width " " " " - - - - -		27 "
Occipital Width - - - - -	111 "	98 "

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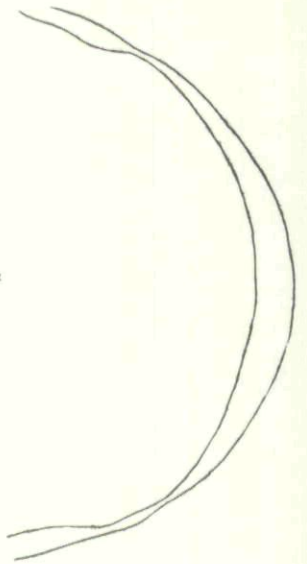
3  
NORMA FRONTALIS.  $\frac{1}{2}$ .



4  
NORMA OCCIPITALIS.  $\frac{1}{2}$ .

Cross section through cranium, through a point 2 cm. in front of bregma and through the centre of the Wormian bodies in the coronal suture.  $\frac{1}{2}$ .

5



Minimum Width of Forehead - - -	98mm.	87mm.
Horizontal Circumference - - -	505 "	463 "
Sagittal Circumference of Forehead -	120 "	119 "
"    "    "    Parietal Bones	115 "	121 "
"    "    "    Occipital Squama	114 "	110 "
"    "    "    Head -	349 "	350 "
Height of Face - - - - -	71 "	66 "
Jugal Width of Face - - - - -	142 "	(140) "
Orbita, Height - - - - -	34 "	35 "
"    Width - - - - -	40 "	38 "
Nose, Height - - - - -	53 "	51 "
"    Width - - - - -	26 "	27 "
Distance of Lachrymal Points - - -		25 "
External Edges of Orbits - - - -		97 "
Palate, Length - - - - -	55 "	49 "
"    Anterior Width - - - - -		36 "
"    Posterior Width - - - - -	41 "	45 "
Length of Face - - - - -	119 "	99 "

## INDICES.

Cephalic Index - - - - -	90.2	
Length: Height Index - - - - -	75.7	
Facial Index [Jugal Width:Height] -	50.0	47.1
Orbital Index - - - - -	85.0	90.9
Nasal Index - - - - -	49.0	52.9

I have not computed the cephalic index of the second skull, as the deformation is too great. The individual seems to have been a young adult female. The molars, the only teeth that remain, are well preserved, not being worn down by long use. The speno-basilar synchondrosis is perfectly closed. The last molar on the right side has not developed, so that there are only five teeth left. The zygomatic arch of the right side and portion of the maxillary bone are broken. There are slight defects on the occipital squama, particularly at the foramen magnum. The right orbit, the lachrymal grooves and the inner nose are damaged. Large parts of the cranium, particularly the left parietal and the adjoining parts of the frontal bone are covered with a thick incrustation, which, on being heated, gives a strong smell of animal matter. It seems to consist mainly of carbonate of lime. The bone also contains a considerable amount of animal matter. As the skull is un-



doubtedly old, it seems probable that the tissues were mummified, as has been suggested by Mr. Ybarra. The figure shows that the skull is very much deformed, far more so than the skull described by Virchow, who states "that the forehead (of No. 1) is much flattened, the upper part being pressed backward; the tubera have disappeared. The upper part of the occipital squama is so flat that the cranium can be made to stand on it." The flatness of the occiput in the skull No. 2 is very remarkable. The skull is small and in most parts thick. Near the bregma an extensive hyperostosis is found which seems to extend a little behind the coronal suture, which has somewhat the appearance of a deep groove. The hyperostosis forms a triangular, median elevation on the forehead. Its limits on the parietal bones are not well defined. The hyperostosis has somewhat an ivory appearance. Small exostoses are found surrounding both parietal foramina. Their surfaces are rough. The left one has a diameter of about 1.3cm., the right of 1.5cm. All the sutures that are normally open in the young adult are still open. The frontal suture is also open through its whole length. The forehead is narrow, particularly considering the fact that the frontal suture is open. On the right side, a large Wormian body is found in the central part of the coronal suture which appears depressed at this place. Probably a similar body exists on the left side, but it is not clearly visible on account of the incrustation. The skull is remarkably thin at the coronal suture. [Fig. 5.] The occipital squama is paraboloid; the frontal suture is 1cm. to the right of the saggital suture. Occipital protuberance large. Pars basilaris uneven. Plane of foramen magnum intersects about the centre of the apertura pyriformis. Palate flat and wide; processus alveolaris low, prognathous. No tuberositas malaris. Lower edge of nose sharp, cross section of nose very flat, upper end 8mm. wide; nasal bones 23mm. long. No depression at root of nose. Opening of nose wide, oval. Orbit rounded. Dis-

tance between temporal and frontal bones on left side 5mm. Ear round. Processus mastoidei small. Incisuræ mastoideæ shallow.

It is a remarkable fact that the skull described by Virchow has the same hyperostosis as we find in this skull. It has also been found in crania from Peru. The horizontal length of the skull measured from the glabella is 160.5mm; the corresponding cephalic index is 92.2. On the whole the two crania seem much alike, and appear to be similar to the better known forms of Mexico and Peru.

- Fig. 1. Cranium from Progreso; Norma lateralis,  $\frac{1}{3}$ .  
 Fig. 2. " " " Norma verticalis,  $\frac{1}{3}$ .  
 Fig. 3. " " " Norma facialis,  $\frac{1}{3}$ .  
 Fig. 4. " " " Norma occipitalis,  $\frac{1}{3}$ .  
 Fig. 5. " " " Cross section through a point  
 1.5 cm in front of the bregma and through the Wormian bodies of the coronal suture,  $\frac{1}{3}$ .

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