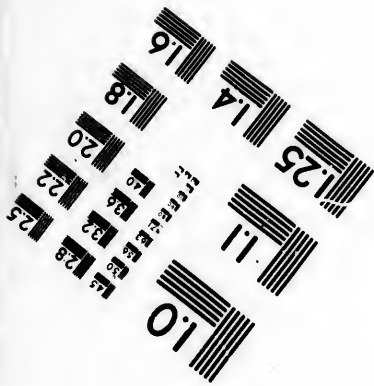
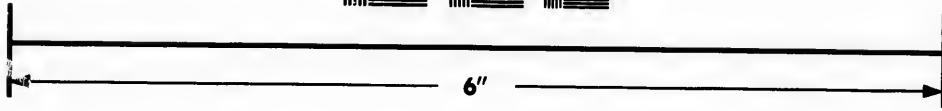
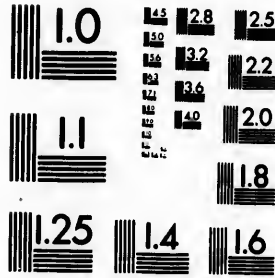


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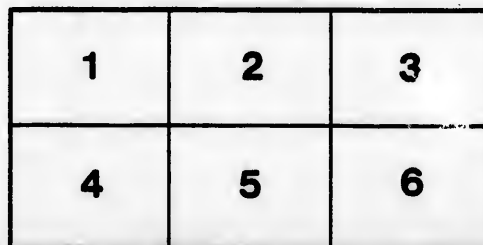
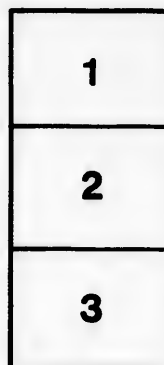
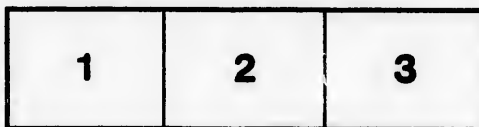
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SYMMETRICAL DEPRESSIONS ON THE EXTERIOR
SURFACE OF THE PARIETAL BONES (WITH
NOTES OF THREE CASES). By FRANCIS J. SHEPHERD,
M.D., *Professor of Anatomy, McGill University, Montreal.*

THE occurrence of symmetrical depressions of the parietal bones has occasionally been noticed, but to Sir George Humphry we are indebted for bringing the subject prominently before Anatomists—first in his able work on the human skeleton (p. 242), and secondly (vol. viii.) of the *Journal of Anatomy and Physiology* (p. 136), in an article entitled "Depressions in the Parietal Bones of an Orang and of Man."

The occurrence of these depressions Professor Humphry could not explain: they are certainly not the result of accident or disease, nor are they always the result of senile changes, for the case of an infant born with a parietal depression is cited in the treatise on the human skeleton, and in my third case the patient had always had the depressions.

In addition to the parietal depressions, which are usually of large size, measuring nearly 7 c.mm. in length by 5 or 6 in breadth, and situated parallel to and half an inch from the sagittal suture, there is often a thinning of the sagittal suture itself, and, as in a case of my own reported below, the lambdoidal suture as well.

These changes in connection with the sutures are probably senile, for all the cases reported were in old women.

Paget regards the condition as due to atrophy, and Mair (*Virchow's Archiv*, vii. 338) looks upon it as one of senile osteoporosis.

In Professor Humphry's treatise on the human skeleton, six cases are referred to, four of which were in the Dupuytren Museum in Paris, one at Cambridge, and one in Berlin, but at present specimens of this condition are not uncommon, and are found in most museums. The depressions are at the expense of the two outer tables, ovoid in form, smooth, and situated

between the sagittal suture and the parietal eminences. The depressions extend forwards to a short distance from the coronal suture. When seen as a dry preparation, the skull has an appearance as if the two outer tables of bone had been sliced out, leaving only the inner table, which is of the thickness of parchment and quite translucent. On looking at the inner surface of the skull opposite to the depressions we find the bone perfectly normal in appearance and quite smooth, showing no evidence of external indentation.

It has been my fortune to meet with no less than three cases: two in the dissecting-room, and one in a living individual.

CASE I.—This has already been published (*Montreal General Hospital Report*, vol. i. p. 72). The case occurred in a female subject aged forty; the depressions existed on each parietal bone, were ovoid in shape and symmetrical, measuring 7 c.mm. in length by 5 in breadth.

The depressions were quite smooth, and "had the appearance of having been scooped out by some sharp instrument." The bone at the bottom of these depressions was of the thickness of paper.

CASE II.—This also has been reported (*Annals of Anatomy and Surgery*, vol. vi. 1882). I transcribe the description of the case:—

"The skullcap of an old woman over seventy presented a remarkable appearance. In each parietal bone, 1 c.m. from the sagittal suture, is an oblong, ovoid, smooth depression, measuring on the right side 7 c.mm. in length by 5 c.mm. in breadth, and on the left 8 c.mm. in length by 5.5 in breadth.¹

"These depressions are about one centimetre in depth, and as they approach the coronal suture they increase their distance from the sagittal. They terminate anteriorly 3 c.mm. from the coronal suture. The deficiency of bone is evidently at the expense of the outer and middle tables, for the inner surface of the skullcap is perfectly smooth, the bone at the bottom of the depressions is quite transparent and of the thickness of parchment. In addition to the above described depressions, others are seen in the course of the lambdoidal suture." These depressions were similar to the parietal ones, and measured 5 c.mm., by 1.5 c.mm.

All the bones of the body in this old woman were atrophied, and of almost papery thinness. There was an intracapsular fracture of the right femur.

CASE III.—This is the most interesting of all the cases, because it occurred in a living person, and the congenital history is well established.

¹ This specimen is in the Medical Museum, M'Gill University.

The patient, Mrs B., aged sixty-two, came to me in 1890, suffering great agony from long-continued paroxysmal neuralgia of the superior maxillary division of the fifth nerve, for which I stretched the infraorbital branch with good effect. As soon as she was under ether I noticed a remarkable depression on each side of the sagittal suture, extending outwards as far as the parietal eminence; these depressions, owing to the great emaciation of the woman from long years of suffering, were well seen, and could be easily measured. Each one was 6 c.m. wide by 8 c.m. long, and apparently of the depth of the thickness of one's finger, say 1.5 c.m. The patient, on my subsequently questioning her regarding these parietal depressions, was much amused, and said I was the first medical man who had ever noticed them. She then went on to say that ever since she could remember they had existed, but were more apparent now on account of the emaciated condition in which she was. She also said that her father had had similar depressions on his head.

Now, this case supports the congenital theory of some of the cases, and also would suggest its hereditary nature. This patient I saw a short time since, and again measured the depressions; they were exactly the same size as three years before. These parietal depressions do not occur at the centre of ossification, and must not be confounded with the cases described by Sir James Paget, where at each parietal eminence there is a depression "such as the thumb would make if pressed in soft clay." In the cases above described, which I have no doubt are congenital, the depressions are of large size, and do not involve the centres of ossification.

Now, what is the significance of these depressions, and how are they produced? No doubt many of the cases which occur in very aged females are due to senile atrophy, and Professor Sir George Humphry has thrown out the suggestion that the formation of these parietal depressions may be due to the effect of pressure of the occipito-frontalis tendon, but the comparative rarity of the condition would, it seems to me, be strongly against this explanation.

It is more probable that the more advanced senile changes in the arteries (temporal) going to this part, uncovered by muscular tissue, would interfere with the nutrition of the external surface of the bone, whilst the inner surface supplied by the middle meningeal would remain normal, chiefly from the fact that the senile changes in this vessel would not be so extreme.

In some of the cases, however, senile changes will not explain the condition, for cases have been recorded as occurring in infants and children, and Professor Humphry has observed somewhat similar depressions on the skull of the orang.

In the third case reported above, the condition was evidently congenital and hereditary. Whether these cases are reversions to an earlier condition or not I cannot say, but I think the congenital and perhaps hereditary nature of these depressions in some cases, at least, is fairly proven.

From a medico-legal standpoint, these cases are especially interesting, for it can be easily imagined that with the slightest amount of injury the most serious results might ensue.

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