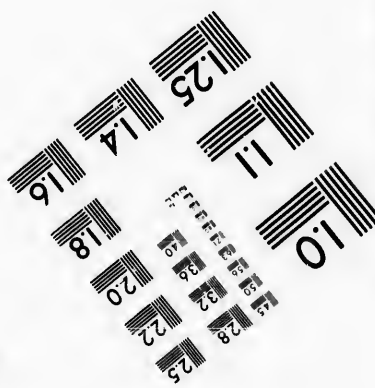
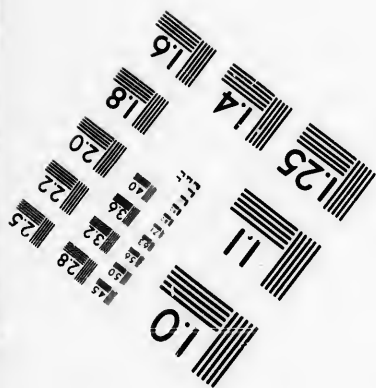
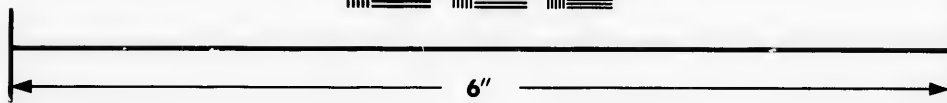
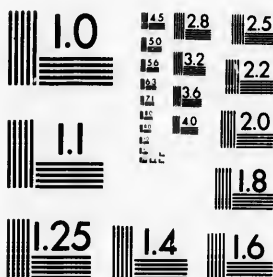


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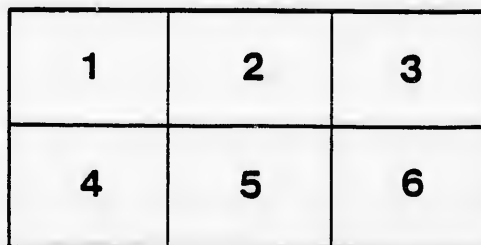
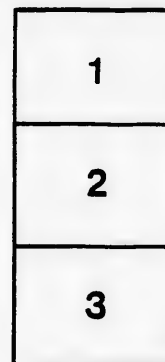
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REPORT ON SOME  
**Anatomical Variations**

FOR 1882.

BY

FRANCIS J. SHEPHERD, M. D.,  
OF MONTREAL, CANADA.

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*R E P R I N T.*

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BROOKLYN, N. Y.  
ANNALS OF ANATOMY AND SURGERY,  
No. 4 Monroe Street.  
1882.



## ON SOME ANATOMICAL VARIATIONS.

By FRANCIS J. SHEPHERD, M.D., C.M., M.R.C.S., ENG.,  
OF MONTREAL, CANADA,

DEMONSTRATOR OF ANATOMY IN MCGILL UNIVERSITY ; SURGEON TO THE  
OUT-DOOR DEPARTMENT OF THE MONTREAL GENERAL HOSPITAL.

THE following variations were among the most important observed in the dissecting room of McGill University during the last Winter session (1881-'82):

### SYMMETRICAL DEPRESSIONS IN THE PARIETAL BONES.

The skull-cap of an old woman, aged about seventy (70), presented a most remarkable appearance. In each parietal bone, 1 cm. from the sagittal suture, was an oblong, ovoid, smooth depression, measuring on the right side 7 cm. in length by 5 cm. in width, and on the left 8 cm. in length by 5.5 cm. in width. These depressions were 1 cm. in depth, and, as they approached the coronal suture, they increased their distance from the sagittal. They terminated anteriorly 3 cm. from the line of the coronal suture. The deficiency of bone was evidently at the expense of the outer and middle tables, for the inner surface of the skull-cap was perfectly smooth. The bone at the bottom of the depressions was quite transparent, and only of the thickness of parchment. In addition to the above described depressions, others were seen in the course of the lambdoidal sutures on each side of the occipital protuberance; these were similar in character to the parietal ones, and the bone was of the same thinness. The one on the

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Reprinted from the *Annals of Anatomy and Surgery*, Vol. vi., No. 4, October, 1882.



right side was more marked, and measured 5 cm. in length by 1.5 cm. in breadth. The subject was a very old woman, whose bones exhibited very well marked senile osteoporosis. The left femur was very characteristic, and there was an intra-capsular fracture of the right. The astragalus could easily be broken down between the finger and thumb. The bones of the skull were yellow, fatty, and porous.

Prof. Humphry, in an interesting paper on these depressions,<sup>1</sup> says he is unable to tell how they are produced; he does not believe they are caused by disease or accident, and suggests that they may be due to absorption of the outer tables of the skull, but remarks "that it is as difficult to know why absorption should attack this region as why deficiency of formation should be manifested here." Prof. Humphry has seen similar depressions in the skull of an ourang-outang, and also in an infant. In the case I have described above I have no doubt the cause was senile osteoporosis; this supposition is strengthened by the fact that similar depressions existed in the course of the lambdoidal sutures, and that all the bones were more or less in an advanced state of osteoporosis. The lines of all the sutures had become ossified, and there was no trace of the serrations of the sagittal or lambdoidal. The coronal could be fairly made out. It is strange that most, if not all, the cases of the depressions which have been described have occurred in old women. I have elsewhere<sup>2</sup> reported a somewhat similar case, also in a woman, but there was no decided osteoporosis present.

#### CERVICAL RIB.

This occurred on the left side of a female subject. The rib was freely movable, and possessed a head, neck and

<sup>1</sup> *Journal of Anatomy and Physiology*, vol. viii.

<sup>2</sup> *Montreal General Hospital Reports*, vol. i., 1880.

body. Anteriorly it terminated by articulating with a bony process on the upper surface of the first thoracic rib. The upper surface of the cervical rib was grooved for the vertebral artery and seventh cervical nerve. As I intend, at some future time, describing this case, with others I have notes of, I shall not enter into further details at present.

#### OSSIFICATION OF THE SACRO-ILIAC ARTICULATION.

This rare condition was observed on the right side of a female pelvis; the bony union was only at the upper third of the joint; the lower two-thirds were perfectly normal and coated with healthy cartilage. It appeared as if the transverse processes of the two upper pieces of the sacrum were fused to the upper edge of the articular surface of the ilium. The first right sacral foramen was considerably larger than the left, but the right half of the first two pieces of the sacrum appeared somewhat smaller than the left. It looked ill-developed. The right articular facet, which articulated with the fifth lumbar vertebra, was much enlarged and roughened, and looked as if old disease might have existed there. The coccyx was completely ossified to the sacrum, and consisted of five pieces. Ossification of the sacro-iliac articulation occurs normally in some of the sloths.<sup>1</sup>

#### FUSION OF TIBIA AND FIBULA.

This occurred in the left leg of a muscular male subject. The lower two inches of the tibia and fibula were fused together as in many of the lower animals, as, for instance, the rabbit. This occurs also in one of the Primates—the *Tarsius*, as a normal condition.

#### THIRD TROCHANTER OF THE FEMUR.

One example of this anomaly presented. It is homologous with the *trochanter tertius* of some of the lower animals

<sup>1</sup> Prof. Flower, Lectures on the Edentata, *British Medical Journal*, 1882.

(as, for example, the horse, rhinoceros, etc.), and gives attachment to the gluteus maximus. When it occurs in man, it is seen just below the great trochanter. According to Waldeyer,<sup>1</sup> it occurs in man quite as often as the supracondyloid process of the humerus. Fürst<sup>2</sup> found that it occurred very frequently. In forty skeletons of Swedes examined by him in the Caroline Institute of Stockholm, fifteen had a trochanter tertius; and in six skeletons of Lap-

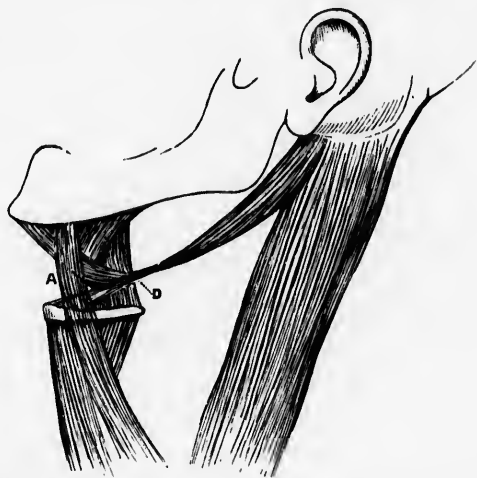


FIG. I. ABNORMALITIES OF THE DIGASTRIC AND OMO HYOID MUSCLES.

A, Anterior belly of the omo hyoid prolonged to the lower jaw; D, Double anterior belly of the digastric.

landers four possessed a trochanter tertius. I have only seen it twice in some two hundred subjects.

#### HYOGLOSSUS MUSCLE, ABSENCE OF MIDDLE PORTION.

The portion of this muscle arising from the lesser cornu was once seen wanting. Between the portion arising from

<sup>1</sup> Fürst, *Hygeia* xlii. Quoted in *Virchow-Hirsch Jahresbericht*, 1882.

<sup>2</sup> Loc. cit.

the great cornu and that arising from the body was an interval where the lingual artery was uncovered by muscle. In some of the lower animals each portion is a separate muscle, which might explain the deficiency.

ANTERIOR BELLY OF THE OMO HYOID INSERTED INTO  
THE LOWER JAW.

In this case the anterior belly of the omo hyoid blended with the sterno-hyoid, and, passing up over the hyoid bone (to which it gave a few fibres) and the digastric muscle, was inserted into the lower jaw a little to the left of the symphysis. (See Fig. 1, A). Mc Whinnie (*London Medical Gazette*, 1846) mentions a similar case. I have once before seen this unusual insertion of omo hyoid. It occurred on both sides of the same subject.

TWO ANTERIOR BELLIES TO THE DIGASTRIC.

This occurred in the same subject and on the same side as the above-mentioned omo hyoid variation. The anterior belly divided into two, one of which was inserted into the body of the hyoid bone, and the other was inserted, as usual, into the lower jaw. The posterior belly ended in a tendinous raphé, from each side of which muscular fibres arose, those from the upper part being inserted into the lower jaw, and those from the lower passing down to the hyoid bone. There was no distinct binding down to the hyoid bone by fascia of the tendon. (See Fig. 1, D).

MUSCULAR SLIP FROM THE MASTOID PROCESS TO THE  
SERRATUS POSTICUS SUPERIOR.

This slip was noted as occurring on the left side of a muscular male subject. It arose from the mastoid process beneath the sterno-mastoid, passed over the splenius capitis and colli, and ended by a tendinous expansion in the upper edge of the serratus posticus superior an inch from the

spinous processes. The slip was of good size, measuring half an inch in breadth.

MUSCULAR SLIP FROM LEVATOR ANGULI SCAPULÆ TO THE  
SERRATUS MAGNUS.

This occurred in two subjects. In one the slip was double, one portion going to be inserted into the first rib behind the tubercle, and the other blending with the first serration of the serratus magnus.

On one occasion a slip was seen passing from the levator anguli scapulæ to the rhomboideus minor. This occurred on both sides of the same subject. All these different slips have been described by Prof. Wood,<sup>1</sup> and are considered by him to be varieties and modifications of the occipito-scapular muscle, which occurs normally in many of the lower animals.

STERNO-SCAPULAR MUSCLE.

This muscle was noticed on the right side of a female subject. It arose from the upper border of the scapula and the transverse ligament in common with the omo hyoid, passed under the clavicle and over the axillary vessels and nerves, to be inserted by a round tendon into the cartilage of the first rib. The right subclavius muscle was of small size. This muscle, according to Prof. Wood,<sup>2</sup> occurs normally in the insectivora, but reaches its highest development in pachyderms or ruminants as the elephant, hippopotamus, pig, horse, etc., and it sometimes embodies the subclavius, and at other times is made up, by the union at the imperfect clavicle or its tendinous representative, of a sterno-clavicular and scapulo-clavicular element. I have notes of four cases occurring in two hundred and twenty subjects.

PECTINEUS.

On the left side of a male subject this muscle was divided into two by a distinct intermuscular septum. The inner

<sup>1</sup> Transaction of the Philosophical Society, London, 1870.

<sup>2</sup> Loc. cit.

portion was supplied by a branch from the obturator nerve, and the outer by a branch from the anterior crural. This is the normal arrangement in some of the lower animals.

SUPERNUMERARY HEAD TO THE QUADRICEPS EXTENSOR MUSCLE.

This extra head arose on the left side of a male subject by two tendinous slips, one of which had its origin from the anterior portion of the capsule of the hip joint, the other from the anterior border of the great trochanter. These two slips soon united and formed one strong tendon, which passed down the thigh between the iliacus and the tensor vaginæ femoris lying on the vastus externus, about the middle of the thigh it became muscular and passed under the rectus femoris, and was inserted into the common quadriceps tendon. The muscular belly was three inches in length.

PLANTARIS, TWO HEADS.

The second head arose by fleshy fibres from the posterior ligament of the knee joint and the outer head of the gastrocnemius.

BRACHIO-RADIALIS.

This muscle was seen in the right arm of a male subject. It arose from the external condyloid ridge above the supinator longus, and between it and the insertion of the deltoid; it passed down internal to the supinator longus and external to the biceps, and over the supinator brevis to be inserted by a round tendon into the oblique line of the radius immediately above the insertion of the pronator radii teres. This muscle was of considerable size. Prof. Wood<sup>1</sup> looks upon this muscle as a variety of fourth head to the biceps. In the same arm various other anomalies existed. (2.) A tendinous slip passed from the tendon of *biceps* to the *pronator radii teres*. It was given off from the

<sup>1</sup> Proceedings of Royal Society, London, 1868.

tendon of the biceps two inches from its insertion, passed downwards and inwards crossing the radial artery, joined the pronator about the junction of its upper and middle third. (3.) The *extensor carpi radialis longior and brevior* arose together, and after passing down the forearm for a short distance, divided into three slips, two of which united to form the longior tendon, and the largest formed the brevior. Their insertion was normal. (4.) The *flexor carpi radialis* had two heads: the second was tendinous, and arose from the inner side of the coronoid process below the pronator teres. The median nerve passed between the two heads. (5.) There was continuity of the *brachialis anticus* with the *supinator longus* by a muscular slip. This occurs normally in apes and monkeys, assisting them in twisting their bodies when hanging by their anterior extremities.<sup>1</sup>

#### THE INFERIOR THYROID ARTERY.

This artery was absent in the right side of a female subject, the superior thyroid being of large size. In the same subject the right *vertebral artery* entered the transverse process of the third cervical vertebra.

#### COMMON ILIAC ARTERIES.

In a negress, where the abdominal aorta divided between the fourth and fifth lumbar vertebræ, the iliacs were unusually short, measuring only 2 cm. ( $\frac{3}{4}$  inch) in length. Quain, in his work on the arteries, mentions one similar case.

#### HIGH DIVISION OF THE POPLITEAL.

It divided opposite the posterior ligament of the knee joint into two branches—viz., the posterior tibial and a common trunk for the anterior tibial and peroneal artery. The peroneal artery was of large size. This is the first case of high division I have met with.

<sup>1</sup> Prof. Wood, Proceedings of Royal Society, London, 1866.

## ABNORMAL HEPATIC VEINS.

After the vena cava had pierced the liver, and had there been joined by a few small hepatic veins, principally from the left lobe, it passed on as usual to the diaphragm; just as it pierced the diaphragm it was joined by a large vein, the size of a finger, and with walls as thick as an artery of like size. This vein, when traced back, proved to be a common trunk formed by two large hepatic veins, which came from the right lobe. The common trunk measured an inch in length. Hepatic veins have been seen emptying directly into

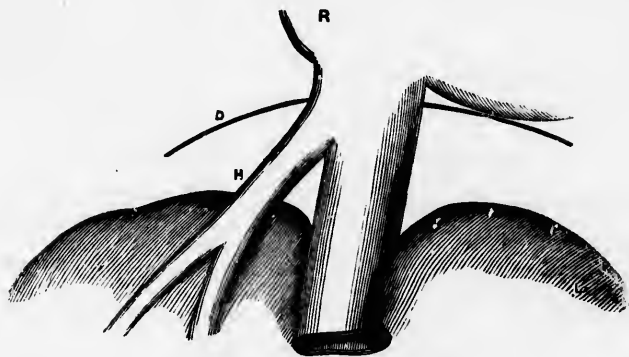


FIG. 2. ABNORMAL HEPATIC VEINS.

*R*, Right auricle; *D*, Line of the diaphragm; *L*, Liver; *V*, Vena cava inferior; *H*, Abnormal hepatic veins.

the right auricle, and this is the normal arrangement in some of the lower animals. The case I have described is apparently an intermediate stage of the above-mentioned variety. (See Fig. 2).

## THORACIC DUCT.

In a negro the thoracic duct had the following course: It commenced, as usual, from the receptaculum chyli, then crossed over the aorta and passed through the aortic opening of the diaphragm to the left side of the artery, continued up



the thorax on the left side as high as the fifth dorsal vertebra, where it crossed under the thoracic aorta to the right side, and from that point its course was normal.

REMARKABLY SMALL OPENING BETWEEN THE ILEUM AND COLON.

In one subject the opening of the ileo-cæcal valve was extremely small. In its longest measurement it was only 1.40 cm. ( $\frac{6}{10}$  of an inch), while the circumference of the ileum at its junction with the cæcum was 8.50 cm. Such a narrowing as this of the opening between the ileum and colon might easily give rise to symptoms of obstruction. I have not seen this point noticed by writers on anatomy. Since I discovered this specimen, I have had the curiosity to examine some dried specimens in my possession. On taking measurements, I find the average length of the opening in six preparations is 3.25 cm., and the average circumference of the ileum close to the colon is 7.50 cm. The largest opening is 3.80 cm., with a circumference of ileum of 8.60 cm. The shortest opening 2.20 cm., with circumference of ileum 6 cm. So it seems from these measurements that in normal cases there is a proportion between the circumference of the ileum and the size of the opening. In the case with the small opening this proportion did not exist, as the ileum was of large size.

TABLE.

Greatest circumference of ileum,	8.70 cm.	Length of the opening,	3.50 cm.
Smallest circumference of ileum,	6.00 cm.	Length of the opening,	2.20 cm.
Greatest length of opening,	3.80 cm.	Circumference,	8.60 cm.
Smallest length of opening,	2.20 cm.	Circumference,	6.00 cm.

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