These quotations show that the method under consideration is not, as has been asserted, a new one; they advance higher and wider claims than I ventured to suggest when writing nearly a year ago, and they prepare the way for the replies which I am about to submit to specific objections. Let me also add that the objections which have been expressed in your columns seem to me to be somewhat strange. As far as I can understand, they amount to this: the stethoscope is an instrument of precision of great value in conveying to the ear waves of sound produced by the movement of gases, fluids, and more or less solid bodies within the thorax, but from the moment that you apply it to the appreciation of vibrations extraneously produced on the chest wall as a sounding board the imagination is brought into play, and any statements based on observations made in that manner "must be rejected as absolutely untrustworthy." I confess that such reasoning seems to me to be no more in accordance with logic than with facts.

I will now turn to Sir William Broadbent's objections. It is said that in my diagrams the upper limit of cardiac dullness is made to extend nearly horizontally outwards almost as far as the right nipple line, an extension which, in the absence of aneurysm or mediastinal tumour, is inconceivable at that level. Whichever of the diagrams it may be to which allusion is made, the change of note which was observed at the base of the heart was identical with that which was taken to indicate the extreme limit of ventricular dilatation, the correctness of which was attested by the position of the apex beat. The initial line of diagram No. III was drawn by a London physician, who had called me in to see the patient, on the basis of a change of note which he had elicited by the ordinary method, and was confirmed by me by auscultatory percussion. Further, it is reasonable to suppose that if the extreme ventricular limit may extend so far as the sub-axillary region, as shown both by impairment of resonance and the apex beat, the auricles may in certain cases become proportionately dilated. I do not, however, wish to express myself dogmatically on this subject, as I have never enjoyed the advantage of seeing a dilated heart exposed in living action.

The next objection is that the bipartite outline is even more irreconcilable with anatomy and with clinical experience, and that there can be no possible correspondence of the notch with either of the auriculo-ventricular rings, because it is made to occupy the place where the pulmonary artery and aorta would be found.

In order that that argument might be valid it would be necessary to establish the contention that it is not possible to distinguish between the impairment of resonance caused by the subjacent heart and the vessels respectively; but the precise opposite is the case. Not only have I myself often done so, but I have frequently seen the position of those vessels marked out by percussion, and a line drawn at the point where the vascular dullness ends and the cardiac dullness commences. Moreover, when last year I was attending a medical man affected with aortic disease and aneurysm of the ascending arch of the aorta, the patient himself was invariably able, by his unaided sense of hearing, to confirm the accuracy of my observations on that very point. Indeed, it was after frequent conferences with him, when we had observed that the notch always preserved its anatomical relation to the great trunk vessels, that we came to the conclusion that it must correspond to the auriculo-ventricular rings. It may be pertinent to add, as a single instance of confirmation of the occasional existence of the notch, that quite recently I was present when a medical man of repute as a scientific clinician marked out the area of dullness in a patient of his own in my presence by bimanual percussion, and indicated the existence of a bipartite outline. The notch was of the depth of about an inch, and was found to be at about the same distance to the left of the midsternal line.

There was, therefore, no question of the percussor having been misled by the sternal change of note. The observation was then confirmed by auscultatory percussion, the chest-pieces of our respective stethoscopes being so placed as to stand in different relations to the line of percussion. I could adduce a score of such instances of independent confirmation of the presence of the notch, and I am not prepared to believe that all the practised auscultators who have been

concerned in these observations have been the victims of a misguided imagination.

The next point is that, inasmuch as the fibrous tissue which enters into the composition of the auriculo-ventricular ring is thinned out until it ceases to exist at a point which is opposite to that from which it springs from the central fibro-cartilage, and contracts and expands with the ventricle, it can have no more resistant power than the substance of the ventricle itself. The ring is, however, a mechanical and anatomical fact, and I find it difficult to believe that it would not prove to be, in the first instance, less yielding than the fibres of a degenerating myocardium.

The next paragraph proceeds to imply that the diminution in the volume of the heart which is observed to take place as the result of recourse to properly administered baths and exercises is no greater than that which may ensue under other methods of treatment. I venture to affirm that, according to the universal testimony of those who have extended opportunities of watching the effects of systematic physical treatment, the diminution of volume which is effected by that means is generally greater, and more rapidly effected, than that which follows any other known remedial or natural process.

One word as to the criticisms of Dr. Herschell in the BRITISH MEDICAL JOURNAL of April 11th. He noted in the course of his experiments that, when percussion is practised radially from the chest piece applied to the thoracic wall, a certain change of note takes place at a distance from the chest piece which varies in different cases, and, though he admits that he can offer no explanation of the phenomenon, affirms that such change of note offers a *reductio ad absurdum* of all the results and advantages which have been claimed for the auscultatory method. I think that I can supply the missing interpretation. The pressure of the chest piece, however light, interferes with the vibration of the component parts of the chest wall within a radius which varies according to circumstances. Had a physician of so great ability and acumen as Dr. Herschell pursued his investigations a little further, he would have learned to distinguish between that change of note and another and a different one which is characteristic of deep cardiac dullness. Little practice is needed to train the ear; but, if a modification of de Mussey's method be adopted, and the chest piece or the ear be made to travel over the thorax while percussion is made on the clavicles, the block over which Dr. Herschell has stumbled will be avoided, and the ear will soon learn to appreciate the cardiac note.

A casual reader of the last paragraph of Sir William Broadbent's "note" might gather the impression that he wishes to convey that I—the only person specifically alluded to—am in the habit of indiscriminately applying the Schott methods to cases where no real heart affection exists, and have made statements which seem to imply that it is equally efficacious under all circumstances. On reflection, however, it will become obvious that, if Sir William had intended to lay such a reflection on me, he would have done so in a manner so definite and circumstantial as to enable me to meet it no less definitely. It only remains for me to add that there is no one in the ranks of the medical profession to whom I should be prepared to haul down my flag more frankly and loyally than to Sir William Broadbent, while at the same time I do not at present think that he has shown cause for my taking that step.

PLACENTAL TISSUE: FRESH AND OLD.

By W. E. FOTHERGILL, M.A., B.Sc., M.B.,
Manchester.

Late House-Physician, Simpson Memorial and Royal Maternity Hospital, and Gynaecological Wards, Royal Infirmary, Edinburgh.

STATEMENTS are frequently made to the effect that in "placental polypus" and "sarcomatous" or "fleshy" mole, placental tissue can remain fresh and comparatively unaltered for many months after the death of the foetus. The conclusions I draw from the specimens figured in the accompanying illustrations, and from others I have examined, are quite opposed to these statements. The drawings are from sections of placental tissue which has been retained *in utero* for varying periods after the death or expulsion of the foetus.

Fig. 1.—Villi from placenta of fresh three to four weeks' abortion.

No. 1 is from a section of placenta in an early stage of development, that is, from a three or four weeks' abortion removed whole, and hardened at once. The villi are covered with foetal epithelium, one layer thick in some parts, two layers thick in others. The core of the villus is mucoid connective, and the blood vessels of the villus are hardly developed.

Fig. 2.—Villi from placenta of fresh abortion, about four months.

No. 2 is from a fresh placenta about four months old. It shows the foetal epithelium covering the villus reduced to one layer of cells. The core of the villus is better formed connective, still mucoid in type. The blood vessels are well developed, and contain unaltered foetal blood. Between the villi nothing but fresh blood is seen. These two sections are given to show the appearance of fresh unaltered villi at different stages of development.

Fig. 3.—Villi with organising blood clot between them, from two and a-half to three months' placenta, retained *in utero* a few days.

No. 3 is from a two and a-half or three months' abortion. A portion of the placenta was retained *in utero* for a few days. The intervillous space is filled with altered maternal blood, showing commencing organisation. Strands of fibrin are seen, and between them numerous leucocytes and red blood corpuscles, which are undergoing disorganisation. The epithelium of the villi is degenerating. The cells have lost their clear outline, the protoplasm is cloudy, and the nuclei are becoming irregular in outline, and stain in a defective manner. The connective is not much altered, but the blood vessels are compressed, and contain foetal blood in process of disintegration.

Fig. 4.—Villi from two and a-half to three months' placenta retained some weeks *in utero*. Organised blood clot compresses the villi.

No. 4 is from an abortion of similar age, whose placenta was retained *in utero* for a longer period—namely, for six or seven weeks. The maternal blood between the villi is considerably organised, and the villi are markedly degenerated. The foetal epithelium has separated from the subjacent connective in places, and the cells have lost their outline and become fused into an almost uniform layer, showing traces of nuclei in places. The connective core of the villus is compressed, and the blood vessels are obliterated, leaving no trace but a little pigment.

Fig. 5.—Villus in organised blood clot from a three months' placenta retained five months *in utero*.

No. 5 is more interesting. The patient, who had menstruated regularly, missed two periods, and when the third period was due lost some blood and clots. When examined some weeks later the os was firmly closed, and she had seen no further discharge of blood. The uterus was so large that it was thought that the original pregnancy might be going on, or that a new one might have commenced just after a supposed abortion at the third month. She remained quite amenorrhœic until five months after the supposed abortion, and then began to have pains and bleeding. A placental mass the size of a goose's egg was removed, solid, firm, and fleshy in texture. Thus, five months before, the embryo had perished, and during these five months no bleeding had

occurred externally. Therefore in this case, if in any, one would expect to find the placental tissue as vital and unaltered as it could be five months after its function and foetal circulation ceased. The drawing shows a villus from this placenta which can hardly be described, so complete is its disintegration. Compressed by organised blood clot and separated from its fellows, it is, indeed, but a wreck of a villus.

I believe that after the foetal circulation has ceased no constructive process continues in the foetal elements of the placenta. I find no trace of division in either epiblastic or mesoblastic foetal cells of a placenta whose embryo has been dead any length of time; while karyomitotic figures are common in growing villi hardened immediately after the death of the ovum. The foetal tissues may increase in size, but only through the swelling of degenerative processes. The maternal blood occupying the intervillous spaces clots and becomes organised, rendering firm and tough the originally spongy placenta. Indeed, the villi in a placental relic play a part comparable to that of a sponge graft, and afford a structure round which new connective tissue is formed, just like the fibres of a dead sponge would do. Young villi degenerate more quickly than mature villi, but their epithelium is more distinct and perfect than that of old villi. Therefore in determining the length of time a placenta has been retained, one should judge by the degree of organisation that has occurred in the blood clot between the villi, rather than by the condition of the villi themselves. Now the time occupied by the transformation of blood clot into fibrous tissue is fairly well known, so that there should be no difficulty in deciding whether any placenta has been retained for days, weeks, or months; though after fibrous tissue is once formed it doubtless undergoes very little further alteration.

The placenta has been supposed to grow after the death of the foetus in ectopic gestation. But recent work has shown that all progressive changes that occur are in the blood clot, and that none but degenerative processes occur in the villi.¹

In the present discussion on deciduoma malignum it is urged by some that foetal epiblast lives and grows in the maternal tissues, while others hold that the origin of the new growths in question is decidual cells, which are simply connective tissue cells of the uterine mucosa. It is, however, far from proved that foetal cells play any part in the matter, so that deciduoma malignum at present affords no argument against the above conclusions.

A CASE OF FATAL PERNICIOUS ANÆMIA IN A GIRL AGED 20.

By J. BROOKE RIDLEY, M.D. EDIN.,
Woking, Surrey.

THE following case of this interesting disease appears to be worthy of record, owing to the early age, the sudden onset after mental strain and worry, and the fatal course:

M. A., aged 20, single, a school teacher, had always been strong and in robust health, and gave no history of any recent illness or blood loss.

At the end of December, 1895, she was noticed to be getting pale. This was attributed to mental strain and worry she had recently had. As she got worse, I saw her on January 29th, 1896. She looked very ill, complained of vomiting, dyspnoea, anorexia, dimness of vision, severe headache, extreme debility, and fainting. There was intense pallor, the skin being of a transparent waxen hue, with a lemon yellow tint. The mucous membranes of the lips and eyelids were quite colourless. There were no submucous or retinal hæmorrhages, but there was pallor of retinae and optic discs. There was no emaciation; no oedema of lower extremities; no osseous pains; no hepatic or splenic enlargement; no bleeding from any passage. The area of cardiac dulness was normal. A loud systolic murmur was heard at the apex and base, and a continuous venous hum in the vessels of the neck. No evidence whatever of any thoracic or abdominal disease, or of intestinal parasites was afforded. The patient was slightly constipated; menstruation was normal; the

tongue clean, but pale; the urine clear, of a dark colour, specific gravity 1011; it contained no albumen nor sugar, but gave a deposit of bright urates. The blood was pale and watery; the discs greatly reduced, and did not form rouleaux, but varied in size and shape, some large, others distorted, a few small and deeply coloured; granular masses were present. I regret I had not the appliances for estimating the hæmoglobin or hæmocytes.

The usual line of treatment was adopted—arsenic, iron, salol, etc.—with marked improvement for a few days. Then ensued an aggravation of all the symptoms, incessant vomiting of greenish fluid without blood. There was no epigastric pain. Suffice it to say that in spite of every care she went from bad to worse; the temperature, normal at first, now varied from 100° to 101° F., with slight delirium and cadaveric odour of the breath. The heart's action was more feeble, so that she became comatose and died on February 14th. No *post-mortem* examination was allowed. The home surroundings were good, and the other members of the family were strong and healthy.

MEMORANDA: MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

CHRONIC HYDROCEPHALUS, WITH DEATH IN THE TWENTY-THIRD YEAR.

A CASE of hydrocephalus, lasting from infancy well into manhood, is sufficiently rare to deserve recording. The following is such a case:

B., a male, died on April 13th, 1896, aged 22 years and 1 week. He is said to have had "water in the head" when a year old, but was supposed to have recovered from this, though the head remained large. He grew up a bright, intelligent child till his 7th year, when the head symptoms recurred and rapidly developed. Very soon he became blind, and a few years afterwards his speech also was lost, though hearing remained unaffected till death. During the course of the disease he was subject to infrequent and very slight convulsions.

At death the measurements of the head were: Circumference at the level of the occipital protuberance 26 inches (this had been the measurement for some years); length over the surface from root of nose to occipital protuberance, 16 inches; from mastoid process to mastoid over the vertex, 19 inches. The skull was completely ossified, the face infantile in size and appearance, the teeth decayed.

The spine was sharply curved, the convexity to the left; the left thorax flattened, the right prominent and reaching down over the pelvis. All the joints were strongly flexed, the feet extended; the head of the left femur lay upon the ilium. The body and limbs were shrunken to the skeleton, and of boardlike rigidity. Only the shoulder and fingers of the right side were movable, voluntary movement being accompanied with tremors. A straight line from vertex to great toe measured 40 inches. The genitals were well developed, and covered with hair. For fifteen years he had been nursed in the arms like an infant, constantly whining and crying out. Death was preceded by coma of about four hours' duration.

Both parents are alive and healthy; two sisters are healthy young women. The mother had one stillbirth. This was all her family.

Glasgow.

JOHN LINDSAY, M.A., M.B.

CEREBRAL MENINGITIS FOLLOWING INFLUENZA. WHEN I first saw the patient, a boy aged 14½, he presented the following symptoms: Severe frontal headache, excessive lachrymation, together with pain on pressing over the eyeballs, aching pain in the lumbar region and legs, furred tongue, anorexia, somewhat scanty and high-coloured urine, and constipation. The temperature was 104.2° F. and the pulse 117.

From what the boy's mother told me, I came to the conclusion that the illness had commenced with a rigor and some

¹ See D. Berry Hart, *American Journ. Obstet.*, vol. xxv, 1892; and Webster's *Ectopic Pregnancy*, Edin., 1895, p. 101; also Alban Doran on Placental Polypus, vol. xxxvii, *Trans. Obs. Soc.*