cheveux rudes et grossières, les oreilles mal conformées, la peau épaisse, de couleur jaune terreux, les organes génitaux atrophies. Les dents carient de bonne heure; les membres inférieurs sont grêles, les jambes cagneuses, les pieds plats et larges." No one who knows the people who inhabit this part of the country will accuse them of abating one jot of the proverbial sharpness of Yorkshiremen; and all the world knows that the "Yorkshire tyke" is no cretin in driving a bargain, or in turning over the honest penny.

I have not seen an infant born with an enlarged thyroid gland; but a medical friend, recently practising in the West Riding, about six miles from the Derbyshire border, has sent me notes of three cases, in which goitrous women gave birth to goitrous infants. I have, however, seen bronchocele at as early an age as eighteen months. Most of my cases traced the commencement of their swelling to the first menstruation, or to pregnancy; in only one case was the enlargement said to have been first noticed at the climacteric period. In many cases, profound anæmia coexisted. It is affirmed by physiologists, that the blood of women has a larger proportion of leucocytes; and that, in pregnancy, these white blood-corpuscles are still more abundant. Now, it is believed by some that the function of the thyroid gland is concerned in the manufacture of the young blood-corpuscles. In pregnancy, there is increased work for the blood-forming organs; and, when the individual lives in a locality where goitre is endemic, if she have hitherto escaped, she develops the swelling so soon as the blood-corpuscle-forming function of the thyroid gland is overworked. With enlargement of the gland, there is apparently diminution in the formation of corpuscles—hence, perhaps, the anæmia and other symptoms. Thus, pregnancy is only a predisposing, not an exciting, cause of goitre. This hypothesis of the blood-forming function of the thyroid explains, in some respects, the greater immunity of males from this disease. The blood of males contains relatively more red corpuscles than that of females. The system of the male is not called upon to undergo the extreme tension and alteration of normal condition, which is the lot of the female in menstruation and pregnancy. This share of the subject offers a fertile field for future investigation.

To conclude the *résumé* of my cases: five suffered from exophthalmic goitre. I made a careful inquiry into three of the cases who came under my own immediate care (the remaining two being contributed by a friend practising in the district). The first was a married woman, who had hypertrophied heart, extreme exophthalmos, and a very large goitre. Her mother and four sisters were goitrous. Contrary to the usual experience, she was much benefited by treatment with iron. The second case had a hypertrophied heart, great anæmia, a small goitre, and marked exophthalmos. Her sister was goitrous, and her mother a flooder. She also improved under the use of iron. The third case had very severe heart-symptoms, a moderately large goitre, and very marked protrusion of the eyeballs. Her daughter and her nieces were goitrous. No treatment availed, and she succumbed to an attack of diarrhoea. It must be understood that these statistics are only approximative. There may be a larger proportion under each of the classes I have alluded to than stated; but those who have collected family histories among unlettered or uninterested people will recognise the difficulty which exists in getting precise and trustworthy facts. I cannot recall to my mind any case of a person, coming to live in this district out of a non-goitrous neighbourhood, contracting this disease. All the sufferers, so far at least as my observations go, have been born, or brought up from infancy, in the district. This is not in accord with the observations of some, who have seen goitres got after a period of from three weeks to six months' residence in an infected locality. The deduction from this is, that the poison, or source of the swelling, exists in a less degree here than in those other districts. Indeed, the enlarged thyroid gland here seldom attains a larger size than that of a melon; and we do not see any of those frightful swellings hanging far down on the breast, which are common enough on the continent.

This paper has already exceeded its original limits; I must, therefore, leave the rest of my material until another time. It may be asked: Why trouble ourselves so much about a disease which is rarely fatal, and one which is only confined to certain localities? This question will answer itself to those who have seen the distress and suffering to which goitre gives rise. It aggravates all respiratory diseases, adds to the difficulties of tracheotomy, and increases the dangers of administration of chloroform. By its pressure on the great blood-vessels of the neck, it may cause, and it certainly complicates, cardiac affections; and, for the same reason, obstructs the cerebral blood-supply—thus interfering with the nutrition of the brain.

In conclusion, it may be asserted that all the evidence points to potable water as the most probable source of the poison. This is well known to the crafty French conscripts, who, in order to avoid the hated military service, flock to the well-known goitrogenous springs in the

Briançon and other districts (St. Lager, page 191). A three weeks' course of these waters will enlarge their thyroids; and, anticipating their rejection, as the goitrous are exempt, they present themselves before the medical board; while their less cunning companions are marched away, possibly to swell the list of those whose bones are bleaching in the fiery glare of an Algerian sun.

The ancients blamed water; popular belief points chiefly to water; and the weight of medical opinion, with the results of recent research, plainly lead up to water. Having these indications before us, the investigator's course is clear; and time, together with patience, is alone needed to dispel the darkness which has so long enshrouded the etiology of goitre.*

THE CEPHALIC MURMUR OF ANÆMIA.

By G. A. GIBSON, M.D., D.Sc., F.R.S.E.,

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IN the early part of last year M. Tripier, of Lyons, published an interesting memoir† upon an important phenomenon which he observed in many cases, more especially in conditions of anæmia.

By means of an abstract in the *London Medical Record*, I brought his investigations before the notice of the profession in this country soon after the appearance of his paper.‡ In anæmia, and certain associated states, Tripier found that a murmur could be determined by auscultation over the cranium. He described it as always systolic in rhythm, never continuous, not modified by change of posture, but altered by pressure on the carotid arteries, and varying with the general condition of the patient. In a subsequent contribution§ he has reconsidered the conclusions at which he previously arrived. He finds most of his statements fully supported by the evidence which he has accumulated, but sees reason to modify his former conclusion regarding the position of the maximum intensity of the murmur.

In his first paper, he described it as being most distinct over the temporal region, especially of the right side. But it had not then occurred to him to investigate the state of the orbit; and, since writing that memoir, he has discovered that on auscultation of the eyeball the murmur can be heard more clearly in that position, than in any other part of the cranium. He points out that the murmur is clearly of local origin, as it not unfrequently exists apart from any cardiac murmur, and cannot, therefore, be transmitted from the heart. It gradually gains intensity as the anæmic state becomes more profound, and when the patient improves it steadily diminishes.

The murmur over the orbit is heard at an earlier period than that in the temporal or other region of the head, and, as health is regained, it is longer in disappearing than that heard elsewhere.

Tripier regards this murmur as arising in the terminal portions of the internal carotid artery, and thinks that its maximum intensity over the orbital region is a strong argument in favour of such an hypothesis.

I am of opinion that the explanation given by Tripier of the mode of production of this murmur is inadequate, and I wish to advance another hypothesis which appears to have more evidence in its favour. Such is my reason for entering into a consideration of this question at present; and, in order to explain the phenomenon with greater advantage, I propose, in few words, to narrate an illustrative case.

Margaret A., aged 36, married at the age of 16, and now mother of nine children, consulted me lately at the New Town Dispensary. She complained of palpitation, with swelling of the legs and feet towards evening; she had but little appetite, and suffered from menorrhagia and leucorrhœa. There was no history of rheumatism nor of other antecedent malady, and the family history was good.

The patient's face was extremely pale, and the conjunctivæ, lips, gums, and tongue, were blanched in the highest degree. No impulse was visible in the precordial region, and there was no swelling or oscillation of the cervical veins. The apex-beat occupied the fifth intercostal space, two inches from the mid sternum. In the mitral area a loud blowing systolic murmur was heard, and there was an independent systolic murmur in the tricuspid area. Over the left auricle, the auricular murmur of Balfour was very distinct. A loud *bruit de diable* was audible over the jugular veins. It had a systolic augmentation of intensity,

* Since this paper was written, the woman first-mentioned among the exophthalmic cases, and whose mother and four sisters were goitrous, has given birth to a son, with an enlarged thyroid occupying both sides of the neck; the child is otherwise healthy.

† Recherches Cliniques sur le Souffle céphalique chez l'Adulte (*Revue de Médecine*, vol. i, Nos. 2 and 3, February and March 1881).

‡ *London Medical Record*, April 1881.

§ Note sur le Souffle Céphalique de l'Adulte considéré au niveau des Régions Orbitaires (*Revue de Médecine*, vol. i, No. 10, October 1881).

and, on the application of greater pressure, was easily converted into a distinctly musical note.

This is an ordinary clinical picture of anæmia in an advanced stage, such as affords probability of the presence of the cephalic murmur. On auscultation of the cranium, the murmur could be determined in three positions. When the stethoscope was applied to the closed eyelid, a low murmur was easily distinguishable. In rhythm it was somewhat later than the apex-beat, and slightly followed the carotid pulse. It was accompanied by the dull continuous rumble caused by the muscular contraction of the orbicularis palpebrarum in its closed state, by the irregularly intermittent noise produced by the sympathetic movement of the eyelid when the opposite lid winked, and by the respiratory murmur propagated through the cranial bones. These three acoustic phenomena are pointed out by Tripièr as likely to mislead the unwary observer. The continuous muscular sound cannot be got rid of, but the irregular noise of winking can be stopped by placing a finger upon the opposite eyelid, and the respiratory murmur necessarily comes to an end when the breath is held. When the stethoscope was applied over that part of the occiput corresponding to the torcular Herophili, a systolic murmur was also heard, but less distinctly than that in the orbital region; and, lastly, on auscultation over the mastoid prominence a very faint murmur of systolic rhythm could be made out. No murmur could be detected over any other part of the head. The murmur was not perceptibly influenced by change of posture, but slight pressure on the carotid arteries diminished its intensity, and forcible compression of these vessels entirely abolished it.

Such is the usual condition, according to my experience, when the anæmia is tolerably well marked. In all cases the murmur is most distinct in the orbital region; in the other situations it is comparatively faint. My students at the dispensary can always hear the former with ease, but the latter can only be detected by those of them who have undergone considerable training in auscultation.

In cases of anæmia, it is not uncommon to find a continuous murmur over the part corresponding to the torcular Herophili; sometimes this murmur, like the venous hum in the neck, presents a systolic accentuation. Since reading Tripièr's earlier paper, I have not been able to determine the presence of this continuous hum over the occiput, and have only observed the faint systolic murmur as in the case above recorded. It is only in very severe cases that the occipital murmur is continuous.

If the murmur originated in the terminal parts of the internal carotid system, it should be found to wane in intensity with distance from that system. It is not so, however; as above remarked, the occipital is usually more distinct than the mastoid murmur.

The position of the greatest intensity of the murmur is of great importance. It is most clearly heard over the orbit, the mastoid eminence, and the occipital protuberance. This fact furnishes a key to the question. These three situations are closely related with the cavernous sinus, the torcular Herophili, and the lateral sinus; and I am of opinion that the murmur is produced by fluid veins within these sinuses: in other words, the murmur is of venous origin. It will at once be said that the murmur ought to be continuous, like the *bruit de diable*, if it arise from vibrations of the fluid contents of these venous channels. But, as in the case narrated, the venous hum is frequently found to have systolic augmentations of intensity. These are caused by the pressure of the large arteries upon the venous trunks, during the distension of the arterial walls, consequent upon the cardiac systole. This pressure creates additional waves in the contents of the veins, and the acoustic expression of these waves is increased intensity of sound. The internal carotid artery is in very intimate relationship with the contents of the cavernous sinus, being practically surrounded by the venous blood. When the anæmic condition is present, therefore, with its predisposition to the generation of intravenous ripples, the pulsations of the artery excite fluid veins in the blood contained within the sinus. In this, I think, we have a sufficient cause for the production of the orbital murmur. And similarly we may account for the occipital and mastoid murmurs. The internal jugular vein, at its origin and in its upper part, is so closely connected with the internal carotid artery, that the shock of the arterial pulsation is always communicated to it. Hence, in the anæmic state, fluid waves are transmitted upwards to the blood within the cranial sinuses, and cause a murmur in situations where the vibrations come to a focus.

It may pertinently be asked, Why is the murmur louder over the occiput than in the mastoid region? And why is it more distinctly heard over the eyeball than in either of these positions? The answer is not difficult to find. The structures lying between the cavernous sinus and the closed eyelid are of somewhat similar density, or to put the fact in different language, there is a continuity of soft tissues from the cavernous sinus, where the sound is generated, to the surface of the globe of the eye, where it is perceived. On the other hand, a murmur arising within

the torcular Herophili must cause vibrations in the osseous structure of the occiput, in order to give acoustic manifestations. Physical laws tell us that sound is better transmitted through media of similar density, than where it is propagated through media whose density differs considerably. This is the reason why the orbital or cavernous murmur is more distinct than the occipital. And in the same way the murmur arising at the bend of the lateral sinus has to pass through the temporal bone; but this is broken up by the mastoid cells containing air, so that there is a physical reason for the greater weakness of the vibrations in this position. From the occurrence of a continuous hum over the torcular Herophili, we should expect to find a similar murmur over the orbit and mastoid region. That there are continuous vibrations, I most firmly believe; but, except in cases of profound anæmia, these are too feeble to reach the ear, and only the systolic augmentation of the sound is heard. Further observations will probably prove that there is a continuous hum in very severe cases.

As regards the place occupied by the cephalic murmur, in the order of development of the physical signs of anæmia, it may be remarked that it is the latest to appear. As far as my experience goes, the following is the sequence of phenomena: venous hum over the cervical veins; accentuation of the second sound in the pulmonary area; systolic murmur over the left auricle, with impurity of the first sound at the apex; systolic murmur in the mitral and tricuspid areas; and, lastly, cephalic murmur.

INTESTINAL OBSTRUCTION EXISTING FOR NINE MONTHS, CURED BY COLOPUNCTURE.*

By JOHN MCGOWN, M.D., Millport.

I HAVE brought this case under your notice because it presented some peculiar features which I have not seen noticed in any of the recently published cases of intestinal obstruction; also on account of the remarkable change that took place in the condition of the patient immediately after the operation, and because the patient, being resident in my own house, was under my constant observation during the whole period of the disease. The patient in this case is a gentleman who has been resident with me for the last eighteen years. During all that time, he has enjoyed excellent health. His habits are very regular; and, being a gentleman of independent means, he has not been subjected to the mental or physical strain of most men who have reached forty-five years of age. The first symptom noticed was about the month of March 1879. At that time, he began to refuse his food, had slight diarrhoea, and the abdomen was somewhat tympanitic. He complained of no pain at this period, nor at any time during the whole course of the disease. The diarrhoea continued, more or less, during the nine months he was ill. Thinking that the illness was owing to some slight derangement of the stomach, I tried all the medicines usually given in such cases; still the diarrhoea continued, and the distension of the abdomen increased. He still complained of no pain. He had no vomiting, unless when forced to take more food than he liked. The constant diarrhoea, and taking little food, produced great emaciation. A remarkable feature of the case was that, about five minutes after he took any food, a loud click-clicking sound was heard; the sound was such as can be produced by a quart bottle full of fluid being laid on its side and allowed to empty itself in that way. The sound was produced by the fluid passing through the obstructed part, wherever that might be. The mechanical pressure of the gas on the kidneys and blood-vessels of the abdomen produced a whole train of peculiar symptoms. The legs became very cedematous three months after the disease was first noticed; and at the end of nine months they were greatly swollen, and the skin was blistered in several places, from which fluid oozed. The heart's action was very feeble; the pulse had gone down to 40 in the minute. No trace of albumen was found in the urine during the whole course of the disease. There was no difficulty of breathing unless he attempted to exert himself in any way. The great pressure on the bowels produced a very large inguinal hernia on the left side. This could be easily reduced; but no truss could keep it up, on account of the great pressure. About the month of June—the disease now going on for five months, and having failed to relieve the distension, which was now very great—I passed the tube of the stomach-pump up the descending colon for nearly two feet, and let off a large quantity of flatus. After the gas was let off, I injected a gallon of tepid water into the bowel through the long tube. I continued to do this every eight days for about two months; but latterly it required to be done every three or four days. I had great difficulty in introducing the tube at first, both on account of the unwillingness of the patient and from the contraction of the sphincter

* Read before the Glasgow Medico-Chirurgical Society.