As to the relationship of the bacillus of rhinoscleroma to that described by Friedländer as the bacillus of croupous pneumonia, it was found that there were points of difference in the cultures:—

1. In tubes containing 1 per cent. of grape sugar, Friedländer's bacillus caused fermentation and complete disappearance of the sugar in 12 days, whereas the bacillus of rhinoscleroma only caused 66 per cent. of the sugar to disappear.

2. Friedländer's bacillus will grow in an acid medium; the other will not.

3. Friedländer's bacillus will coagulate milk, whereas that of rhinoscleroma will not do so.

The bacilli, therefore, though closely allied, are not the same.

I should mention that Dr. Paltauf follows v. Ganghofer in giving up the term rhinoscleroma, as the disease has been shown not to be confined to the nose, and uses instead the expression scleroma of the throat, larynx or nose.

The sections on the table were given to me in Dr. Paltauf's laboratory. The first was stained in hæmotoxylin (Grenacher's), and in it the capsules surrounding the bacilli are so deeply stained that they are not transparent, and the bacilli therefore look large and are easily seen lying inside the large spheroidal cells of Mikulicz.

Under the second microscope is a section from the same specimen stained in carbol fuchsin. In this section the bacilli lying also in the cells of Mikulicz can be seen, but they look smaller: the reason of this is that the capsule is so faintly stained as to be almost invisible, and the small bacilli are seen lying inside it.

These large bacilli holding cells are quite typical of the disease; they are not, as far as I know, seen in any other condition.

ART. XX.—*On Epistaxis and the Hæmorrhoidal Flux: their Pathogenic Unity and Identity of Cure.*^a By ALEXANDER HARKIN, M.D., F.R.C.S.; Consulting Physician, Mater Infirmorum Hospital, Belfast; Membre de la Société Française d'Hygiène, Paris.

To the ordinary observer it may not appear that there exists any ætiological or pathological affinity between these two prominent examples of the hæmorrhagic habit; yet, on closer inquiry, it will be found that they are intimately allied in pathogenic origin, in

^a Read before the Ulster Medical Society on Wednesday, May 4, 1892.

their general behaviour, and in the measures necessary for their treatment and effectual cure. Often, on the suppression of an habitual discharge, one or other of these emunctories acts vicariously, thus supplying the deficiency; and it is not at all uncommon for the pituitary membrane at the upper end of the alimentary canal to show its sympathy, by a sudden outburst of blood, when from some cause, whether operative procedure or otherwise, the ordinary hæmorrhoidal flux has been suspended. Epistaxis is a malady of every age and class, most incident to youth, at the period of puberty, and in adolescence—less so in advancing age. During the period of growth and development the cavernous bodies and the nasal erectile tissue are in a state of turgescence, requiring but slight injury to provoke a traumatic attack; and in adolescence, the period of life when the passions have their sway, and fear and joy and anger and grief and sexual excitement play their part, their onset is often marked by spontaneous hæmorrhage from the nose. I was myself cognisant of the case of a Dublin physician of eminence, who felt so acutely at being unjustly reproached by his son, that the blood spouted instantly from his nose to a great distance. Morell Mackenzie justly remarks that the influence of violent emotion in inducing nasal hæmorrhage did not escape the observation of Dickens, who in his story, “Our Mutual Friend,” relates that Bradley Headstone, after his murderous attack on Eugene Wrayburne, when under the influence of terror, suffered from frequent discharge from the nostrils. Dr. Girod, of Clement Ferrand, relates the case of a young man under age, his companion in travel, who suffered from intractable and daily epistaxis; suspecting the cause, and gaining the young man’s confidence, he confessed that it was due to daily malpractices. Acting on his advice, the young man relinquished the habit, and the hæmorrhage ceased; and Hippocrates, in his *De Morbis Vulgaribus*, writes: “Timochari hieme distillatione in nares præcipio vexata post veneris usum cuncta resiccata sunt.”

Epistaxis also sometimes presents itself as a symptom or concomitant of cardiac and hepatic, of renal and febrile affections, and of acute rheumatism with pronounced endocarditis or hypertrophy of the left ventricle. It is seldom that the malady can be regarded as of idiopathic origin, the outbreak being generally indicative of constitutional disorder and disturbance of the physiological equilibrium of the blood-current; often, after the successful suppression of the hæmorrhage, should the systemic cause be overlooked, the

periodical return of the flux frequently occurs. While Morell Mackenzie attributes the frequency of nasal hæmorrhage in growing youths to plethora, Germain Sée, on the contrary, charges its inroads to anæmia, and censures parents and physicians for not recognising the condition as indicative of general debility. Possibly first attacks may be due to a hyperæmic condition of the blood, their frequent repetition, by draining the system of its normal amount of fibrin and red corpuscles, may induce an anæmic change; in this case, the passive hæmorrhage from the delicate lining of the nostrils shows an absence of the buffy coat, imperfect coagulation, and a soft clot, with often a diseased and impaired texture of the capillary vessels in the Schneiderian membrane. When, however, the nasal discharge is of an active character, the blood is surcharged with red globules and fibrin in increased proportion.

As to the ætiology and pathology of epistaxis, the result of my observation and experience leads me to attribute its causation, in the first instance, to functional and often to structural disease of the liver, the hæmorrhagic diathesis being a dyscrasia—a secondary affection due to chronic hepatic derangement, and this theory should not appear unreasonable if we take into account the rôle of the liver in the constitution and distribution of the blood, its metabolic activity, its power of transforming hæmoglobin into bile pigment, its capacity for storing up glucose under the form of glycogen to pour into the blood when it is needed, and its double supply of blood through the hepatic artery and portal vein; the proportion of the vital fluid constantly flowing through the liver is fully one-fourth of the whole; when also we remember that, as the result of heterogenesis, we owe the existence of lithic acid and the glycosuric dyscrasias, it is not unreasonable to attribute to the same organ the formation of the deteriorated, depraved, and hyperinotic blood of the anæmic subject of epistaxis.

In support of my theory that hæmorrhagic discharges from the upper end of the alimentary canal, the lips, and the nose, are as evidently due to hepatic congestion as those from the rectum, I am enabled to quote the authority of an eminent pathologist—the late Dr. Moxon. In one of his lectures on Analytical Pathology, delivered in Guy's Hospital,^a he states that “it is, indeed, very surprising to find a very free, and even a fatal, hæmorrhage from the stomach, while the mucous membrane, from which the blood (as in epistaxis) must have come, is entire, yet, no doubt, this

^a Medical Times and Gazette, July 11, 1870. Page 58.

sometimes occurs. I have met with a case where cirrhosis of the liver led to total obstruction of the portal vein by *ante-mortem* coagulation in it, and in consequence of this obstruction a varicose œsophageal vein ruptured close to the cardiac origin of the stomach; a small hole was found leading into the vein channels; the patient had bled to death from this. The occurrence was equivalent to the rupture of *œsophageal piles*, and it is an interesting link connecting the common anal hæmorrhoids that arise from hepatic obstruction with the dilated venules on the cheeks and in the mouth, that we recognise as signs of obstructed hepatic circulation. *These venules are indeed no other than facial hæmorrhoids.*

Michael Foster writes:^a—"Since in the heart and great blood-vessels the blood is simply *in transitu*, without undergoing any great changes, it follows that the changes which take place in passing through the liver and skeletal muscles far exceed those which take place in the rest of the body." And Aitken:^b—"Numerous instances of the hæmorrhagic diathesis have pointed to a definite organ as its source—viz., either a morbid condition of the spleen or liver; and in case of leukæmia, usually toward the close of life, a genuine hæmorrhagic diathesis is developed." Immermann, too, treating of the general diseases of nutrition, says:^c "If a disorder of nutrition, looked at broadly, depends on a disturbance of the mutual relations between the blood and the tissues, it necessarily follows that it may originate either in an abnormal state of the blood or the tissues. Hence the pathogeny of the general disorders of nutrition suggests the possibility of their arising in different ways, and regards any one-sided theory—*e.g.*, that they are a blood disease, as, *à priori*, unjustifiable. For, since the blood, besides supplying the tissues with pabulum, also receives from them the products of cellular metamorphosis, it is always possible that owing to a morbid state of all, or a majority of the tissues a secondary heterotomy or dyscrasy of the blood may be induced, as in diabetes mellitus. The anæmic condition may possibly depend on a state of the tissue elements in which the desire for pabulum is relatively good, when accompanied with an inadequate energy of sanguification; the hyperæmic, on a weak acquisitive power in the tissues, while the power of renewal of the constituents of the blood is unimpaired."

^a "Physiology." Page 35.

^b Aitken. Vol. II., page 78.

^c Von Ziemssen. Vol. XVI., pages 257-9.

My contention, then, is that the starting-point in the constitutional disorder which takes the form of anæmia or hyperæmia, and of which epistaxis is a frequent result, is as clearly due to hepatic disorder as diabetes mellitus itself—viz, to an abnormal condition of the tissue elements or cells in the liver, secondarily affecting the blood and general constitution. With this theory of causation, treatment would naturally proceed on the lines of improving the constituents of the blood, and of restoring the health of the liver, whether functionally or organically defective. In accordance with my recorded experience,^a the first indication would be most readily met by the free administration of chlorate of potassium alone, or in combination with iron; the second, by counter-irritation over the region of the liver, a large blister being practically the most convenient form; further, as chlorate of potassium is possessed of remarkable hæmostatic properties, I am satisfied that it is not solely through its immediate action on the molecular elements of the blood, but also by its direct operation on the disordered condition of the liver, that it controls and limits the congestive and other lesions of this important organ. That potassium chlorate has the power of yielding some life-giving element to the blood in cachectic conditions, and that its presence in the blood acts as a powerful stimulant to cell-growth, cannot be questioned. It is at the same time difficult to explain its *modus operandi*, whether by the separate action of its important elements, or, in a topical manner, *per se*.

Bence Jones says that—"By dialysis all crystallised bodies act as directly on the textures as on the blood; they act according to their chemical power when they enter the textures, and according to the chemical and physical properties of which the textures are composed." Besides, according to Sir Charles Cameron, "drugs produce powerful catalytic effects without undergoing themselves any chemical changes." But, whether through the agency of its separate elements by dialysis, or catalytic action, the clinical facts remain, that the administration of potassium chlorate produces in the human subject the identical result claimed for oxygen by Beddoes, Thornton, Birch, and Hill, that it energises to a considerable extent the nutritive functions, increases the appetite, slightly elevates the temperature, stimulates the cardiac movement, and augments the

^a British Medical Journal, October 30, 1880. N.B.—I intentionally pass over topical treatment during an attack, as there cannot be any doubt of its necessity.

body weight, increases the number and stimulates the organic activity of the red globules. The combination of topical and internal remedies having proved so satisfactory in the suppression of hæmorrhage from the bowels dependent on bleeding piles, and success having often attended their separate action, through their curative influence on the congested liver, I became convinced that equally satisfactory results would follow in cases of nasal hæmorrhage by the adoption of similar measures. I had for a long time recognised the fact, that in the great majority of persons suffering from congestions, cirrhoses or other hepatic diseases, if free from anal discharges, they were subject to desultory bleeding from the nose, and in most instances from the right nostril. Extensive clinical experience tallied completely with my theory of causation, and confirmed its correctness, and has enabled me to claim for counter-irritation over the liver the merit of a speedy and effectual remedy for this troublesome disorder. Hæmorrhage from the right nostril has always been regarded by me as a sign of hepatic disease, and even Galen^a had long since referred to this peculiarity as a guide in treatment of epistaxis. "Cupping glasses," he says, "applied to the hypochondrium arrest nasal hæmorrhage. When the blood flows from the right nostril they should be applied over the liver; from the left, then over the spleen; when from both sides, then the cupping glasses should be applied over both sides."

In a paper^b read at the Cork meeting of the British Medical Association on the subject of the hæmorrhagic diathesis, I related the particulars of a case of epistaxis hæmophilia, in a youth of eighteen, engaged in a mill near Belfast, who suffered so much from a continuous dropping of blood on the flax he was manipulating, that he feared he would have to retire from the business. His family history is remarkable, his father having been subject to many severe attacks of epistaxis—sometimes persisting, despite of treatment, for a month at a time; another member of the family suffered similarly from the extraction of a tooth, a wound by shaving giving rise to most troublesome bleeding. I prescribed an ounce of chlorate of potassium in a pint of water, with the addition of one drachm of muriated tincture of iron—a fluid ounce for a dose—thrice daily. Before the mixture was finished the case was complete and permanent; this dates from June, 1874.

^a Gazette Hebdomadaire. 1881. P. 145 du feuilleton.

^b British Medical Journal, 1880, October 30.

In the *Lancet*, October 30, 1886, I published the following notes of four cases:—

CASE I.—On May 13, 1885, I was sent for, to visit J. B., aged eighteen, a counter hand in a spirit store, subject to free bleeding from the right nostril for many weeks, to severe headache, and constipated bowels. No history of piles. On examination I found the liver tender on pressure and somewhat enlarged. I then applied the liquor epispasticus freely over the hepatic region, telling the young man that after five hours the bleeding would permanently cease, and ordered some cholagogue medicine. As I predicted, the hæmorrhage ceased, without any return up to the present date.

CASE II.—On same day a young man, apprenticed to a chemist, came, accompanied by his father, to me. He had suffered very much from indigestion and vertigo, and hæmorrhage from right nostril for many days. I had formerly treated his father for congestion of the liver, due to excessive drinking. On examining the patient I discovered an enlarged liver with congested cutaneous veins traversing the right hypochondriac region. I applied the fluid blister with the usual result—an immediate cessation of the epistaxis. The young man has since emigrated, but up to the day of his departure, six months after, there had been no reappearance of the blood.

CASE III.—On May 25th, 1885, J. S., an indoor servant, sought my advice. He had been suffering for the previous six weeks from profuse epistaxis from the left nostril. At first it appeared at regular intervals, but latterly it observed no limit, coming on six or seven times every day. He had a large and torpid liver, and many of the subjective signs of the disease—disturbed sleep, headache, irritable temper, borborygmi, hardened stools, depressed spirits, unwillingness to rise in the morning, and drowsiness in the day. I then applied the counter-irritant over the seat of the disease; the epistaxis yielded at once, as well as the other objective and subjective symptoms. The cure has been for so far a permanent one.

CASE IV.—While paying my morning visit to a straw lodge—an improvised barrack for police during the riots of 1876—accompanied by one of the officers, I found one of the men in bed with a handkerchief at his nose, saturated with blood, which had been flowing for the greater part of the previous night. On satisfying myself of the causal factor in the attack, I painted him over the liver with the epispastic fluid, prescribing no other remedy but rest in bed. On our revisiting the man next day, he informed us that from the moment that the blister began to pain him the hæmorrhage declined, and shortly after ceased altogether.

CASE V.—*Vicarious Bleeding from the Nose and Under-lip.*—Mrs. M., aged thirty-eight years, the wife of a sergeant in the Royal Irish Constabulary, mother of six children, called on me early in March, 1885. Before marriage she had suffered from hæmorrhoids, and during her first and subsequent pregnancies from hepatic congestion and occasional hæmorrhage from the bowels, which often gave me some anxiety on her account. On this occasion she presented every sign of anæmia and debility—blanched cheeks and lips, sunken features, compressible and feeble pulse, undue palpitation of the heart on the slightest exertion, continuous headache, and frequent vertigo. She attributed her exhaustion to profuse bleeding from the left under-lip, occurring at every meal and generally lasting for ten minutes each time. On examination I discovered a slight abrasion at the junction of the epidermis with the lining membrane of the left lip, about half the size of a threepenny coin, from which the blood flowed freely. Mrs. M. had removed from my neighbourhood two years previously; and as the hæmorrhoidal flux again became troublesome, by the advice of an experienced physician she entered the Royal Hospital, Belfast, in February, 1883, where the offending growths were soon deligated by one of the attending surgeons of that institution.

After returning home in April her relief was of short duration, irritation about the anus occurring from time to time, and occasionally a slight discharge of blood from the nostrils. But in the June following her left under-lip became painful, and blood began to ooze from it, once or twice in the week; the intervals then became shorter, the drain occurring every day, then at every meal, or when by accident the lip was hurt.

Having from previous experience acquired a thorough knowledge of the patient's constitution and requirements, I did not hesitate but immediately ordered the application of a blister, 8 inches by 4, for eight hours over the region of the liver, to be followed by cotton-wool dressing. On my visit next day I was informed that from the moment free vesication was established all labial hæmorrhage had ceased. I then prescribed the use of chlorate of potassium and tincture of iron in liberal doses; there was a speedy return of health, her colour and bodily strength soon reappeared, the headache and vertigo troubled her no more. She occasionally complained of pain at the delicate lip; and with one exception since that date, when a slight bleeding appeared, which, without consulting me, she speedily arrested by a blister over the liver, she has not had any recurrence of her trouble.

I shall conclude with two cases of recent-occurrence:—

CASE VI.—Miss N., a lady of middle age, residing in the country, sent for me in March, 1891, for a severe attack of epistaxis, recurring at

intervals and causing anxiety on account of her distance from medical advice. Recognising in her case an enlarged and torpid liver, greatly due to want of exercise, and to good living, I applied the fluid blister over the affected organ, and was informed next day that all hæmorrhage had ceased. I recommended some active purgation, and more moderation in food, and there has not been any return of the malady.

CASE VII.—Miss L. D., aged twenty-six, a worker in a wareroom, necessitating a sitting posture and head bent over her work—a branch of the linen trade—called on me on 4th April, 1891, complaining of frequent attacks of nasal hæmorrhage, sometimes lasting for a week and requiring her abstention from work for that time; the disease had continued for three years, and she had consulted many physicians and specialists, having among other remedies been using Blaud's pills for many months without relief. I applied the blister as usual, recommending the hæmostatic of iron and potassium chlorate. She had an immediate recovery, and has been able to attend her place of business with regularity, except that on 9th December, being prostrated with influenza for a few days, her nose bled for about three minutes, requiring no special treatment.

It is, probably, worthy of note that almost coincident with my researches on the nature and treatment of hæmorrhagic diseases a learned Academician and eminent surgeon, M. Verneuil, of La Pitié, Paris, was perseveringly working out a similar problem. He arrived with me at the same conclusion—viz., that in cases of nasal and anal hæmorrhage the liver was primarily in fault, and that our curative efforts should be directed in the first place to it. My cases of anal and nasal hæmorrhage, as published in the *British Medical Journal*, occurred in 1867 and 1874; and M. Verneuil's Memoirs in 1870 and 1875. Further, the first five cases of epistaxis which I have just read, and which appeared in the *Lancet* in Oct., 1886, were followed by a paper communicated to the Académie de Médecine, Paris, six months after—April, 1887—M. Verneuil giving an account of three remarkable cases of epistaxis cured like mine by counter-irritants, or, as he called it, revulsives over the liver. M. Verneuil politely sent me a copy, from which, in an abbreviated form, I give the three cases:—

Case 1.—A man, aged fifty-nine, of robust frame, given to alcoholic excess, resulting in a marked diminution of the size of the liver, subject to intermittent attacks of epistaxis, which plugging the nostrils, sulphate of quinine, ergotin, and digitalis failed to arrest. Recognising a coming cirrhosis of the liver, and

a causal relation between this morbid condition and the hæmorrhage, M. Verneuil directed the application of a blister to the right hypochondrium, putting an end to further medication. The hæmorrhage was definitely arrested by this means. Case 2.—Traumatic epistaxis—A groom, aged forty-five years, of sober habits, but much subject since his fifth year to attacks of epistaxis, received an injury from the foot of a horse upon his face, followed immediately by profuse and continuous bleeding, which resisted plugging of the nasal fossa and all internal medication. On examination, all the viscera except the liver proved to be sound; the latter was notably diminished in volume. The suspension of all internal remedies and the application of a blister over the right hypochondrium arrested the epistaxis at once. Case 3.—Intermittent epistaxis in a patient formerly the subject of nephritis, at present suffering from an affection of the heart and congested liver; failure of plugging, ergotin and the water of Lechelle, and perchloride of iron; immediate cure by the simultaneous employment of sulphate of quinine and a large blister over the region of the liver.

M. Verneuil concludes from these facts—1st. Latent and even non-malignant affections of the liver may provoke and be the occasion of troublesome epistaxis; 2nd. Relief procured by the aid of a large blister over the right hypochondrium, which appears to be the best means of curing hæmorrhages of this nature. M. Verneuil concluded his paper in the following terms:—"The maladies of the liver constitute a serious complication for operations, and when one recognises clearly their existence in a patient the wisest course is at once to return his bistoury to his pocket."

While admitting the importance of the clinical facts the Academicians preferred not to commit themselves to any therapeutic theory; they did not, as a scientific body, admit the principle of revulsives, M. Dujardin-Beaumetz declaring that was too extensive a subject to enter on—in fact, since the time when M. Malgaigne some fifty years ago commenced a crusade against revulsives, and particularly blisters, in the Académie de Médecine this subject has continued to prove a bone of contention. M. Colin could not understand why blisters were preferably applied over the liver, as there was no vascular connection between the skin and that organ; he considered that the heart was at fault, and that epistaxis was provoked by exaggeration of the vascular system that ruptured the delicate vessels of the pituitary membrane in the nose.

M. Verneuil, in reply, said it was not necessary to have any vascular connection between the organ and the part to which blisters were applied, and that it was the nervous system through the existence of reflexogene zones that determined the point of application. Finally, he said that it was not his desire to formulate any therapeutic ætiology, but simply to state interesting facts.

The ideas generally entertained at present in this country as to the ætiology of bleeding piles afford a typical example of an error to which modern physicians are occasionally liable—viz., that of mistaking secondary and accidental symptoms for the primary disease, and of the failure to recognise the connection that exists between these symptoms and certain morbid processes in important organs. Proceeding on these lines many physicians, not recognising a disordered liver as the *fons et origo* of the anal hæmorrhage, and not directing their energies to its improvement, incontinently relegate their patient to the operating surgeon, who, without hesitation or remorse, proceeds to deligate and destroy by his instruments of precision the safety valve provided by nature for the relief of the suffering organ. Sometimes, however, as in the instance recorded in Case V., the *vis medicatrix* changes the venue from the south to the north pole, and thus endeavours to baulk the surgeon's beneficent intentions by establishing a counter-current from the upper end of the alimentary canal. Happily for the patient it is not deemed necessary to repeat the same heroic remedy when nose or lip performs the vicarious duty.

I have always regarded the hæmorrhoidal flux as well as hæmorrhage from the nose as the outcome of the hæmorrhagic diathesis, itself the direct product of the hepatic cells in a state of hyperactivity, and, as a consequence, in endeavouring to restrain these inordinate discharges I have prescribed those remedies whose powers I have tested in controlling the undue activity of all the conglomerate glands, the liver included, my chief reliance being upon chlorate of potassium. When the case was urgent I have also invoked the aid of vesication, which has never failed me by its counter-irritant and derivative action in permanently suppressing either form of hæmorrhage. My experience dates back to 1867, and my first published case, which I read at the Cork meeting of the British Medical Association, appeared in the *Journal* of October 30th, 1880, as follows:—

CASE I.—J. C., a member of the Royal Irish Constabulary, after returning from duty at night from the Music Hall, found one of his

boots full of blood, which he traced to the rectum. I saw him next day (December 19, 1867), and directed his removal to the Royal Hospital. I had not on examination discovered any sign of external hæmorrhoids. He remained in hospital till the 14th February following without any benefit, and then returned to barracks. I then prescribed rest in bed and chlorate of potassium in the proportion of one ounce of the salt to a pint of water, one fluid ounce three times a day. After the first day he began to improve, and at the end of the third day every trace of the disease had disappeared.

CASE II.—Mrs. B., mother of three children, sent for me in April, 1875. When I arrived she was bleeding profusely from internal piles; had been ill for some days, and the drain had weakened her to an extreme degree. After prescribing absolute rest, I ordered a large blister to be immediately applied over the region of the liver, and my favourite hæmostatic—solution of chlorate of potassium and tincture of iron. This was done, and improvement followed at once. Next day she was free from all hæmorrhage. She afterwards, on the death of her husband, became a trained nurse in the Royal Hospital, and was never known to complain in a like manner.

CASE III.—Mrs. M'D., aged thirty-six years, mother of six children, sent for me on March 8, 1886. I found her in bed, pallid and exhausted from a profuse discharge of blood from the rectum which had continued for several days. The blood accompanied every evacuation, sometimes to the amount of three or four ounces. On examination I found a fringe of external piles surrounding the anus, and inside the sphincter a number of knotty tubercles, from one of which arterial blood flowed freely. In this, as in the former case, I immediately applied a blister over the hepatic region, and ordered, as an adjuvant, a mixture of tincture of perchloride of iron and chlorate of potassium in solution. The relief was immediate, and the patient soon recovered her natural colour and strength. At the end of a fortnight, however, I was again sent for, as the bleeding had returned as freely as ever. The relapse was due to the patient having undergone great fatigue the previous day while assisting her husband in business. As her friends had now become anxious I requested Dr. Walton Browne to see her with me. He agreed with me in continuing the hæmostatic mixture, having, in addition, a sedative enema at intervals. These remedies only gave her partial relief, and, at the request of the patient, I reapplied the blister. The remedy was again successful; all bleeding ceased, and has not reappeared up to the present date.

In the leading article of the *Bulletin Général de Thérapeutique*, Paris, of July 30, 1888, M. le Docteur Petit* writes as follows:—

* Du Traitement du Hæmorrhages par le Revulsion sur la region hépatique.

"The rôle of diseases of the liver in the pathogeny of hæmorrhages is admitted by almost all the world since the memoir of Monneret in 1853 upon spontaneous hæmorrhages, and those of M. Verneuil in 1870 and 1875 upon traumatic hæmorrhages. Starting from these data it occurred to M. Verneuil that it would be judicious in certain intractable hæmorrhages to have recourse to revulsive measures in the hepatic region; that is to say, to treat the lesions of the liver as the exciting cause of the hæmorrhages. The most common of these spontaneous hæmorrhages appeared to be the hæmorrhoidal flux and epistaxis, and it was against the first of these that M. Verneuil in 1874 attempted revulsion over the liver. Moreover, at his request, one of his house surgeons, M. Duret,^a in order to illustrate the rôle which affections of the liver played in the pathology of hæmorrhoids, demonstrated by several accurate dissections the anastomoses of the originating venules of the portal vein with the hæmorrhoidal veins. In the same year, 1885, M. Duret published in the *Progrès Médical* a clinique of M. Verneuil, giving three cases in which the relation between an affection of the liver and the hæmorrhoidal flux was abundantly evidenced.

Cases 1, 2, 3.—In a clinical lecture delivered in 1875^b at La Pitié, M. Verneuil detailed the history of a patient suffering from profound anæmia, caused by a hæmorrhoidal flux of twenty years' standing, and recurring each time he visited the closet. He paid particular attention to the state of the liver, which was considerably increased in size; the spleen, too, showed an equal enlargement. Without deciding whether or not the hypertrophy of the liver had been the exciting cause or the consequence of the hæmorrhoids, M. Verneuil clearly established the connection between this affection of the liver and the hæmorrhoids. The same relation existed between the other two patients referred to in the lecture. One of them presented an enormous hypertrophy of the liver and the spleen, and voluminous hæmorrhoids. Since coming under his care he had administered a number of cold douches over the region of the liver and spleen, and he could testify to the great diminution of both organs; as for the hæmorrhoids

^a Duret. Sur la disposition des veines du rectum et de l'anus et sur quelques anastomoses peu connues du système port. Le Progrès Médical. 1877. P. 304. Recherches sur la pathogenie des hémorrhoides. Arch. gén. de méd. 1886. 7^e Serie 1. V. P. 191.

^b Published by M. Duret in Le Progrès Médical. May 15. P. 261.

they had completely disappeared. The influence of revulsion by means of cold douches upon the affection of the liver and upon the hæmorrhoids was most remarkable in the second patient, enfeebled by numerous discharges of blood flowing from voluminous hæmorrhoids. He was in a state of profound anæmia, and showed an enormous liver. M. Verneuil, who had intended to operate upon him, determined first to reduce the hypertrophy of the liver. He advised hydrotherapy, which, after six months, proved thoroughly successful in lessening the size of the liver and in putting an end to the hæmorrhage. The salutary influence of revulsion in this case established clearly the relation between the affection of the liver and also the cure without any operation on the hæmorrhoids. Since that time M. Verneuil has completely abandoned the use of bloody operations in the treatment of hæmorrhoids. He has exclusively adopted dilatation by force (rupture of the sphincter) with the aid of interstitial cauterisation by the thermo-cautery when the hæmorrhoids are very numerous or very vascular. The application of compresses saturated with phenic water and some days of repose suffice to complete the cure.

M. Petit concludes thus:—"The subjects of chronic hepatic affections are liable to many spontaneous hæmorrhages, medical or surgical. A large number of facts having demonstrated that there exists a direct relation between spontaneous hæmorrhages and chronic affections of the liver, it seems to be a logical conclusion to treat the hæmorrhage by revulsion over the region of the liver, which usually proves most successful. When, then, we are called to a patient attacked by spontaneous hæmorrhage the indication is to examine the state of the liver, and if this organ prove to be in an abnormal condition then to apply a blister to the region occupied by it."

Such is a slight sketch of the teaching of the eminent surgeon to La Pitié and other Gallican authorities. That it has not as yet been accepted in England is undoubtedly true; and although there is not another organ of the body whose congestions and hypertrophies are more amenable to treatment, yet the minds of the leading medical authorities appear only anxious to excel in the invention of the most perfect instrument of mutilation, and to decide whether the clamp, the ligature, or the knife, or the actual cautery is best adapted for the destruction of the safety-valves provided by nature for the relief of an overburdened viscus at its lowermost outlet, the hæmorrhoidal veins.

If a recent discussion at the Medical Society of London^a may be accepted as voicing the opinion of the metropolitan profession, it would appear that the rôle of the liver in the causation of piles is ignored, and that the favourite remedy for a medical ailment is the mechanical treatment of aggressive surgery.

When one compares the bald and unsupported opinions of the speakers, with the exception of the author of the paper, who gave a qualified assent to the causal influence of the liver in this discussion supremely anxious to “*exonerate*” the liver from any part except occasional in the causation of piles, with the outspoken dictum of Astley Cooper delivered sixty years ago in old St. Thomas’s, he would feel a difficulty in complimenting them on the progress of medical science in the end of the 19th century. In his lecture on Piles,^b after mentioning costiveness and diarrhoea as often a cause of this complaint, Sir Astley continues—“It very often arises from disease of the liver, and congestion of the veins in the intestinal canal. The difficulty of transmitting the blood through the vena portæ occasions a congestion in the hæmorrhoidal veins, and obstructed secretions in the intestinal canal lead to the same effect.”

It may be asked, What is the *modus operandi* of the blister in these hæmorrhagic ailments? The blister in these cases acts—first, as a counter-irritant by causing an irritation of the surface and of the terminal branches of the cutaneous nerves, which, through the influence of the trophic nerves, affects the calibre of the arterioles, and thus controls the congestion and hypertrophy; but the vesicant acts also as a powerful depletive by abstracting from the circulation in the neighbourhood of the diseased organ a quantity of white blood, highly albuminous and coagulable on the application of moderate heat. Doubtless, wet-cupping in the hypochondriac region or free leeching from the anus would also rapidly react on the liver, and perhaps as readily relieve present congestion; but, irrespective of the greater inconvenience of such remedies, there is a potent objection to their use—viz., that they must abstract from the system, already too anæmic, a quantity of red globules and fibrin, confessedly present in insufficient proportion; while the blister is as powerfully depletive, leaving untouched the hæmoglobin, and not increasing the hyperinotic condition.

In conclusion, although professional men are often chargeable

^a Lauder Brunton. On the Causation and Treatment of Piles.

^b Lectures on Surgery. 4th edition. Page 420.

with marked reluctance in admitting the relation between cause and effect, between remedy and cure, yet from the uniform sequence of events that attends the revulsive method of treatment in epistaxis and the hæmorrhoidal flux, I think I may safely claim for it the title of a reliable remedy. In the words of Peter Latham :^a "The treatment of diseases is in fact a part of their pathology. What they can bear, the kind and strength of the remedy, and the changes which follow its application, are among the surest tests of their nature and tendency."

ART. XXI.—*Some Modern Methods of Sewage Treatment.*^b By D. EDGAR FLINN, D.P.H., F.R.C.S.I., M.R.C.P.I.; Examiner in State Medicine, Royal Colleges of Physicians' and Surgeons' Conjoint Examining Board; Surgeon, St. Michael's Hospital, Kingstown; formerly Med. Officer of Health, E. Staffordshire.

Dr. Alfred Carpenter has truly said that—"It is the object of the sanitarian to bring about conditions which diminish the frequency of early death, which assist to remove bodily pain from the list of human grievances, and to pave the way for that time when every person born into the world will enjoy his birthright, without having it curtailed by the acts of other people."

THE object I had in view in the drafting of this paper was to draw the attention of this Section to the benefits derivable from the most recent methods of sewage disposal. "The sewage problem," as it has been aptly termed, has passed through many stages during the past twenty years or more, but it is only within the last few years that scientific knowledge has sufficiently advanced to bring this vexed question within the possibility of a final and successful solution. Sanitarians have devoted themselves assiduously to grapple with the difficulties that beset their way in the disposal of the sewage of cities and towns, and if they had not, to a great extent, surmounted these difficulties, the condition of the large centres of population would long ere this have become intolerable. Further, in regard to the progress that has been made in sanitary science, the reign of Queen Victoria will ever stand prominently forth as a most important epoch, as at the time of her accession the sanitary condition of the people was as bad as bad could be.

^a Author's preface, page 38.

^b Read before the Section of State Medicine of the Royal Academy of Medicine in Ireland, Friday, May 6th.