THE CROONIAN LECTURES

ON FUNCTIONAL DERANGEMENTS OF THE LIVER.

Delivered at the Royal College of Physicians.

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LECTURE II.—Continued.

III. *Abnormal Disintegration.* 1. *Lithæmia*; 2. *Gout*; 3. *Urinary Calculi*; 4. *Biliary Calculi*; 5. *Degenerations of the Kidneys*; 6. *Structural Diseases of the Liver*; 7. *Degenerations of Tissue throughout Body*; 8. *Local Inflammations*; 9. "*Constitutional Diseases*."—IV. *Derangements of Organs of Digestion.* 1. *Tongue*; 2. *Appetite*; 3. *Taste*; 4. *Flatulence*; 5. *Constipation and Diarrhœa*; 6. *Vitiated Stools*; 7. *Intestinal Hemorrhage*; 8. *Hæmorrhoids*; 9. *Hepatic Pain*; 10. *Jaundice, its Pathology*.—V. *Derangements of the Nervous System.* 1. *Aching Pains in Limbs*; 2. *Pain in Shoulder*; 3. *Neuralgia*; 4. *Cramps*; 5. *Headache—Migraim*; 6. *Vertigo*; 7. *Convulsions*; 8. *Noises in Ears*; 9. *Sleeplessness*; 10. *Depression of Spirits*; 11. *Irritability*; 12. *The Typhoid State.*

THE facts and arguments which I have now brought under your notice have led me to the conclusion that functional derangement of the liver, by interfering with the normal disintegration of albuminous matter, and by the production of peccant substances which are not readily eliminated, and which, therefore, accumulate in the system, may, in the long run, lead to many of the most serious maladies—both acute and chronic—to which our race is subject. I shall now proceed to consider certain symptoms, indicating derangement of the different physiological systems, but not constituting distinct diseases, which appear to result from functional disorder of the liver.

IV.—*Derangements of the Organs of Digestion.*

1. *The Tongue.*—It is well to remember that there may be considerable functional derangement of the liver, and yet the tongue may be perfectly clean and normal, or at most only slightly coated in the morning; but in many cases, and particularly if the derangement be of old standing, the tongue presents the appearances commonly described as characteristic of "atonic dyspepsia". It is large, pale, and flabby, and indented by the teeth at the edge of the anterior third, while its surface is white, and the papillæ are often elongated, so as to produce a pilous appearance. If the liver be somewhat congested, with these appearances we may often observe the fungiform papillæ on the tip and edges larger and redder than natural. In other cases, and especially when there is at the same time more or less gastric catarrh, the whole surface of the tongue is uniformly covered with a thick fur, sometimes whitish, but occasionally of a yellowish or brownish tint.

2. *The Appetite* may be excellent, although there is great functional derangement of the liver, with lithæmia, so that the patient is often tempted to eat what he knows from experience to disagree with him. But when the flow of bile into the bowel is deficient, the appetite is often bad, and there may be a loathing of fat and of greasy articles of diet. In cases, which are not uncommon, where there is much functional derangement of the liver in conjunction with hepatic congestion and chronic gastric catarrh, there may be a loathing of all food excepting alcoholic stimulants, which increase the existing mischief, but which, as I have already stated, may lead to the accumulation of large quantities of fat.

3. *A Bitter Taste* is not unfrequently complained of by persons who are the subjects of jaundice; but the symptom is not due to the presence in the blood of bile-pigment, which is tasteless, but may be owing to its containing taurocholic acid, which is intensely bitter, or some abnormal product of disintegrated albumen. This may explain why many patients suffering from functional derangement of the liver, but who have not a trace of jaundice, often complain of a bitter, or sometimes a "coppery", taste in the mouth, especially in the morning.

4. *Flatulence* is a common symptom of functional derangement of the liver. It is one of the most frequent results of a deficient flow of bile into the bowel, and, when the bile-duct is completely obstructed, it is rarely absent. It is also a common symptom in lithæmia, where there is often also a deficiency of bile in the bowel, and in all cases where the

circulation through the liver is torpid. In all these cases, in consequence of a deficiency in the bowels of bile, which, as we have seen, is endowed with antiseptic properties, the intestinal contents undergo fermentation, and gas is generated, which accumulates in the bowels, the distension being usually greatest from one to three hours after a meal.

5. *Constipation or Diarrhœa.*—In a large number of cases of functional derangement of the liver with lithæmia, the bowels are more or less constipated; there is, probably, a deficiency in the quantity of bile which passes down the bowel, and, therefore, a want of the normal stimulus to peristaltic action. The motions are either unusually pale, or, from long detention in the bowel and the action upon them of the intestinal juices, they become black and lumpy. The latter condition is often associated with much depression of spirits, and hence the "melancholia" of early writers on medicine.

But functional derangements of the liver may be attended by the opposite condition of diarrhœa, or constipation and diarrhœa may alternate. It is generally assumed that this diarrhœa is due to an increased secretion and discharge of bile; and, in fact, "an excessive secretion of bile", showing itself in "copious, fluid, alvine evacuations, highly coloured with bile, often preceded by griping, by nausea, and sometimes by vomiting", is one of the three functional derangements of the liver described by Dr. Copland* and other practical writers. Dr. Copland admitted that "excessive biliary secretion is more frequently inferred from circumstances than proved by unequivocal evidence"; and, for my own part, without denying the possibility of the biliary secretion being sometimes excessive in quantity and unusually irritating, so as to excite diarrhœa, my experience has induced me to adopt a different explanation for most, at all events, of the cases of so-called "excessive secretion of bile". In most of these cases, there is evidence of more or less congestion of the liver; the circulation through the liver is impeded, and there is a general stagnation of blood in the coats of the stomach and bowels. This mechanical stagnation is very likely to become converted into an active congestion or a catarrhal inflammation under the stimulus of irritating ingesta, so that even a small quantity of such a stimulus as alcohol may excite diarrhœa and vomiting. In many of these cases of "bilious diarrhœa", the stools contain much mucus as well as bile. From what has been stated in my first lecture, it is clear that the large quantity of bile discharged from the bowel in these cases is no certain sign of an increased secretion by the liver, but may be due to a diminished absorption, consequent on irritation of the mucous surface.

6. *Vitiated Stools.*—A "vitiated biliary secretion" is one of the three functional derangements of the liver described by systematic writers. Although there can be no doubt that the appearances of the bile in the gall-bladder after death are subject to great variations, too much importance has, perhaps, been attached to the characters of the stools during life as an index of the state of the liver. It must be remembered that variations in the characters of the stools may be the result of functional derangements or structural disease of the long tract of bowel between the entrance of the bile-duct and the anus, and may likewise depend on the rapidity or slowness with which this tract is traversed by the feces. Bearing in mind these sources of fallacy, it may be said that when little bile is poured into the bowel, the stools are pale and unusually offensive, unless they be long delayed in the bowel, in which case they may be dark and lumpy; but when there is an excessive secretion or diminished absorption of bile, the motions are relaxed and liquid, and contain a much larger quantity of bile than in the normal state.

7. *Intestinal Hemorrhage.*—Copious hæmorrhage from the bowels is well known to be an occasional result of cirrhosis and of other structural diseases of the liver which obstruct the portal circulation. I have frequently met with it, however, where there has been obvious derangement of the liver, but no reason to suspect structural disease. The patients have, for the most part, been beyond middle age; but I have known the attacks occur repeatedly in the same person at intervals of many years. The attack is usually preceded by a feeling of oppression and heaviness, or by creeping sensations and more rarely severe neuralgic pains suggesting gall-stones about the liver, by pain in the right shoulder, loss of appetite, nausea, and furred tongue. Great relief is usually afforded by calomel or blue pill, with saline aperients. In the intervals of the attacks the patients may enjoy good health, except that they have to be careful as to diet. Not unfrequently they present the symptoms of the lithic acid dyscrasia, or they are subject to attacks of gout.

8. *Hæmorrhoids.*—In a large proportion of persons who suffer from hæmorrhoids, the primary cause is in the liver. Hæmorrhoids are a common result of structural changes in the liver, such as cirrhosis; but they are also a frequent attendant of functional derangements, and especially of the loaded state of the liver common in lithæmia.

* *Medical Dictionary*, ii, 725.

9. *Hepatic Pain*.—With the exception just referred to, severe pain in the liver is not a common symptom of purely functional derangement of the organ. It may even be absent when there is advanced structural disease, unless there be inflammation of the peritoneal investment, or pressure upon a nerve by some morbid growth. But in cases of protracted lithæmia, a sensation of weight, fullness, or tightness in the hepatic region is not uncommon; and when the bowels are neglected, or the patient continues to eat rich food and drink alcoholic stimulants, the liver is apt to become enlarged and congested, and then it may be the seat of actual pain, which is usually increased after meals, or by lying on the left side.

10. *Jaundice*.—In considering whether jaundice may result from functional derangement of the liver, it will be necessary to enter somewhat in detail into its pathology. All cases of jaundice may be referred to one of two classes, viz.:

I. Cases in which there is a mechanical impediment to the flow of bile into the duodenum, and where the bile is in consequence retained in the biliary passages, and thence absorbed into the blood.

II. Cases in which there is no impediment to the escape from the liver into the bowel.

The several causes of jaundice belonging to each of these classes are given in the annexed Table.

TABULAR VIEW OF THE CAUSES OF JAUNDICE.

A.—JAUNDICE FROM MECHANICAL OBSTRUCTION OF THE BILE-DUCT.

I. Obstruction by Foreign Bodies within the Duct.

1. Gall-stones and inspissated bile.
2. Hydatids and Distomata.
3. Foreign bodies from the intestines.

II. Obstruction by Inflammatory Tumefaction of the Duodenum, or of the Lining Membrane of the Duct, with Exudation into its Interior.

III. Obstruction by Stricture or Obliteration of the Duct.

1. Congenital deficiency of the duct.
2. Stricture from perihepatitis.
3. Closure of orifice of duct in consequence of an ulcer in the duodenum.
4. Stricture from cicatrization of ulcers in the bile-ducts.
5. Spasmodic stricture?

IV. Obstruction by Tumours closing the Orifice of the Duct or growing in its Interior.

V. Obstruction by Pressure on the Duct from without, by—

1. Tumours projecting from the liver itself.
2. Enlarged glands in the fissure of the liver.
3. Tumour of the stomach.
4. Tumour of the pancreas.
5. Tumour of the kidney.
6. Postperitoneal or omental tumour.
7. An abdominal aneurism.
8. Accumulation of fæces in bowels.
9. A pregnant uterus.
10. Ovarian and uterine tumours.

B.—JAUNDICE INDEPENDENT OF MECHANICAL OBSTRUCTION OF THE BILE-DUCT.

I. Poisons in the Blood interfering with the Normal Metamorphosis of Bile.

1. The poisons of the various specific fevers:
 - a. Yellow fever. b. Remittent and intermittent fevers. c. Relapsing fever. d. Typhus. e. Enteric or pythogenic fever. f. Scarlatina. g. "Epidemic jaundice."
2. Animal Poisons:
 - a. Pyæmia. b. Snake-poison.
3. Mineral Poisons:
 - a. Phosphorus. b. Mercury. c. Copper. d. Antimony, etc.
4. Chloroform and ether.
5. Acute atrophy of the liver?

II. Impaired or Deranged Innervation interfering with the Normal Metamorphosis of Bile.

1. Severe mental emotions, fright, anxiety, etc.
2. Concussion of the brain.

III. Deficient Oxygenation of the Blood interfering with the Normal Metamorphosis of Bile.

IV. Excessive Secretion of Bile, more of which is absorbed than can undergo the Normal Metamorphosis.

Congestion of the Liver:

- a. Mechanical. b. Active. c. Passive.

V. Undue Absorption of Bile into the Blood from habitual or protracted Constipation.

When any obstruction exists to the flow of bile through the hepatic or common bile-duct, the way in which jaundice arises is sufficiently clear. The bile-ducts and the gall-bladder become distended with bile, which is absorbed into the blood by the lymphatics and the veins. This was satisfactorily proved at the end of last century by the experiments of Dr. Saunders,* which have been confirmed by many subsequent observers. If a ligature be applied to the hepatic duct of a dog, and the animal killed after two hours, the lymphatics in the walls of the bile-ducts, which are very numerous, are seen to be distended with a yellow fluid; the fluid in the thoracic duct is also yellow, and so likewise are the intervening lymphatic glands. In patients, also, who die of obstruc-

tion of the bile-duct, the lymphatics of the liver are often found to contain bile. On the other hand, the serum of blood taken from the hepatic vein two hours after ligature of the common bile-duct is found to contain much more bile-pigment than that of blood taken from the jugular vein,* which shows that, in obstruction of the gall-duct, bile is also directly absorbed by the veins.

But it is not so easy to account for jaundice when there is no mechanical impediment to the escape of bile from the liver. Boerhaave and Morgagni long ago suggested that the jaundice in these cases was the result of a suppressed secretion. They maintained that the function of the liver was merely to separate the elements of bile which were already formed in the blood; and that, when anything interfered with this function of the liver, the blood retained the ingredients of bile, and the result was jaundice. Although this view was strenuously opposed at the end of last century by Dr. Saunders, who contended that "in every case of jaundice bile must be secreted and carried into the blood-vessels",† it is the view generally received at the present day. Our colleague Dr. George Budd, for instance, in his treatise on *Diseases of the Liver*, remarks respecting those cases of jaundice in which there is no obstruction of the bile-ducts, that "the most obvious explanation of the facts is, that the biliary pigment exists in the blood, and that, in consequence of defective action of the secreting cells, it is not eliminated as it should be in the liver".‡ It is right to add that he makes an exception with regard to the biliary acids, which he believes to be formed in and by the liver. This view—that the liver manufactures the bile-acids, while it merely eliminates the bile-pigment—has also been advocated by Dr. George Harley, in his essay on *Jaundice*.§

In my first lecture, however, I gave reasons, which appeared to me to leave no doubt, that even bile-pigment does not exist already formed in the blood; and, if the view for which I then contended be correct, it will be necessary to seek for some other explanation of those cases of jaundice in which there is no obstruction in the bile-duct than that of suppressed secretion.

A solution of the difficulty has been proposed by Professor Frerichs of Berlin. According to this distinguished observer, a large proportion of the colourless bile-acids formed in the liver is either directly taken up by the blood in the hepatic vein, or is absorbed from the bowel. Under ordinary circumstances, these bile-acids become oxidised and assist in forming the large quantity of taurin found in healthy lungs and the pigments voided in the urine; but these normal metamorphoses are liable to interruption by nervous agencies, or by poisons in the blood, and then the bile-acids, not being sufficiently oxidised, are converted into bile-pigment in the blood, and the result is jaundice.¶ This view has been supported by two experiments intended to show—1. That bile-pigment can be produced artificially from the bile-acids by the action of concentrated sulphuric acid; and 2. That colourless biliary acids, when injected into the veins of dogs, are converted in the blood of these animals into bile-pigment. These experimental results are still the subject of much discussion. They have been controverted by Kuhne,|| Hoppe, G. Harley,** etc., but confirmed by Stœdeler,†† Neukomm,†† Folwaczny,†† Röhrig,‡‡ etc. It has been contended on the one hand that the biliary acids in these experiments are decomposed in the blood; and on the other, that, in whatever manner they find their way into the blood, they are excreted unchanged by the kidneys. The majority of observers seem to concur with Frerichs; and his view is confirmed by the circumstance that, of the large quantity of bile-acids secreted by the human liver and subsequently absorbed, none appear in the urine. The decision of the question at issue, however, is not of material importance for explaining those cases of jaundice in which there is no obstruction of the bile-duct, provided there be any truth in the view set forth in my first lecture, that bile-pigment, as well as the bile-acids, is, under normal circumstances, reabsorbed into the blood, becoming transformed, in the process of absorption, into products which are eliminated by the lungs and the kidneys. In the healthy state, the whole of the bile that is absorbed is at once transformed, so that neither bile-acids nor bile-pigment can be discovered in the blood or in the urine, and there is no jaundice. But, in certain morbid states, the absorbed bile does not undergo the normal metamorphoses; it circulates in the blood and stains the skin and other tissues, and in this way we have jaundice without any obstruction of the bile-duct. The morbid states which, so far as

* Dr. Legg states that he has recently repeated this experiment in the dog without success.—*St. Bartholomew's Hospital Reports*, vol. ix, 1873.

† *Op. cit.*, p. 107.

‡ *Op. cit.*, pp. 40, 467, 468.

§ *Jaundice; its Pathology and Treatment*. London, 1863.

¶ *Klinik der Leberkrankh.*, New Sydenham Society's Translation, vol. i, pp. 89, 394.

|| *Virchow's Archiv*, vol. xiv, parts 3 and 4, Sept. 1858; and *Beale's Archives of Medicine*, vol. i, p. 342.

** *Op. cit.*

†† See my Preface to the English edition of *Frerichs on the Liver*, pp. xv, xvi.

‡‡ *Archiv für Heilkunde*, Aug. 1863, p. 385.

* *Structure and Diseases of the Liver*, etc., 3rd edit., 1803.

we know, conduce mainly to this result are, for the most part, precisely those in which we might expect abnormal blood-metamorphoses, viz.:

1. Certain poisons, such as those of yellow fever, relapsing fever, pyæmia, and more rarely those of remittent fever, typhus, scarlatina, etc.; also snake-poison, chloroform, etc.

2. Nervous influences, such as a sudden fright, violent rage, great or protracted anxiety, and concussion of the brain.

3. A deficient supply of oxygen, as happens in certain cases of pneumonia, or in persons living in confined and crowded dwellings.

4. An excessive secretion of bile, especially when conjoined with constipation, may also probably lead to jaundice. In this case, unless the bile be removed by purging, the quantity absorbed may be too great to undergo the normal metamorphoses, and the presence in the blood of the untransformed bile causes jaundice.

According to this view, the only pathological difference between jaundice from obstruction and jaundice independent of obstruction of the common bile-duct is that, in the former case, none of the bile secreted by the liver can escape from the body by the feces, and consequently all that is secreted after the gall-bladder and biliary passages are fully distended is absorbed into the blood, the quantity thus absorbed being far too great to undergo the normal metamorphoses; while, in the latter case, bile passes into, and is discharged from, the bowel as usual, but that which is absorbed, which in quantity may not exceed that which is absorbed in health, remains unchanged in the blood. As might have been expected, the jaundice in the former case is much more intense than in the latter, although, when an obstruction of the bile-duct has lasted long, the jaundice often becomes paler, not from any diminution of the obstruction, but from the secreting tissue of the liver becoming destroyed and comparatively little bile being secreted; while, in cases where there is no obstruction of the bile-duct, the intensity of the jaundice will vary according to the amount of bile which is absorbed and the degree of derangement of the blood-metamorphoses.

V.—Derangement of the Nervous System.

1. *Aching Pains in the Limbs and Lassitude*, coming on about an hour after a full meal, and sometimes associated with an irresistible tendency to drowsiness, are a very common symptom resulting from hepatic derangement with lithæmia. They are often attended by flatulence and other indications of atonic dyspepsia.

2. *Pain in the Shoulder*.—It is well known that, in organic disease of the liver, complaint is often made of a dull, heavy, or aching pain about the right, and more rarely about the left, shoulder-blade, which is accounted for by the connection existing between the branches of the subclavius nerve and the phrenic. Patients with lithæmia often complain of a similar pain.

3. *Hepatic Neuralgia*.—In rare cases, a neuralgic pain seems to occur in the liver itself. Many, probably most, of the reported cases of "neuralgia hepatis" have probably been examples of biliary colic, where the stone has never advanced beyond the neck of the gall-bladder or the cystic duct, so as to cause jaundice. My experience would certainly lead me to doubt the purely neuralgic character of any such attack in which the pain is followed by jaundice, as has happened in some of the recorded cases. Other instances of supposed hepatic colic have probably been examples of nephritic colic from renal calculi, where the pain, as I have known happen, radiates horizontally forwards, instead of taking the usual direction downwards towards the pubes. But, making allowance for such mistakes in diagnosis, a certain number of cases remain, which appear to be examples of true neuralgia of the liver. Cases of this sort have been described by Trousseau,* Anstie,† and other authors, and a few have come under my own notice. The patients in these cases have been liable to sudden attacks, often periodic, of severe pain in the right hypochondrium, and radiating thence to the right shoulder, with tenderness over one or more of the dorsal spinous processes. They have been for the most part of nervous temperament, and subject to neuralgic pains in other parts of the body; and in most instances the attacks have been attended with great depression of spirits. The cause of the attacks is to be sought for in a general neuralgic tendency rather than in any disorder of the liver. Trousseau, however, has pointed out that hepatic colic from gall-stones may excite a true neuralgia. After showing how the peripheral irritation of a false tooth may excite facial neuralgia, he observes:—"The same thing obtains in hepatic colic. Fearful pain sets up suddenly in the pit of the stomach and in the region of the gall-bladder and of the ductus communis choledochus. So far, there is merely local pain, without neuralgia, and there is no tenderness on pressure of the dorsal spinous processes; but, after two or three days spent in acute pain, a sharp pain is frequently

complained of in the seventh, eighth, and ninth intercostal spaces, in the shoulder, in the neck, and in the arm on the same side; from that time, neuralgia exists, and the vertebræ become very tender on pressure."*

4. *Severe Cramps* in the legs and in different parts of the body are a common symptom in persons who are the subjects of lithæmia. They often come on during the night, and they are most common in cold and damp weather. The late Sir Charles Scudamore remarked that, in some gouty persons, they produced such intense suffering as to form the leading feature of the disease.† Sometimes they precede a paroxysm of articular gout. Two remarkable instances of this result of lithæmia have been recorded by Dr. Bence Jones. The first was that of a gentleman aged 40, who for years had been liable to constant deposits of lithic acid and lithates in the urine. He then became the subject of attacks of violent pain in the stomach, coming on from one to five hours after a late dinner. The pain was intermittently spasmodic; the most intense pain was reached in half a minute; it then relaxed, and returned as badly as before in two minutes. His suffering lasted about an hour, when the pain gradually abated, leaving a tenderness on pressure and an irritability after food for two or three days. After the attack, the urine always deposited lithic acid crystals. These attacks had lasted for several months, but, under a careful diet and the use of alkalies, they entirely ceased. The second patient, who also was the subject of lithæmia, was seized with violent cramps in the rectum, coming on six or eight hours after food, and lasting from half an hour to an hour. The attacks entirely ceased under the same treatment as in the first case.‡

5. *Headache* is a not unfrequent result of hepatic derangement. Most commonly it takes the form of a dull, heavy pain in the forehead, more rarely in the occiput, complained of as soon as the patient awakes in the morning, and either speedily ceasing or lasting the greater part of the day or for several days. Such headaches are common in the subjects of lithæmia after any indiscretion in diet, or when the bowels are constipated. Their immediate cause is probably the presence in the blood of some abnormal product of albumen-metamorphosis; the derangement of the liver is usually indicated by pain and fulness in the right hypochondrium, flatulence, and high-coloured urine loaded with lithates; and relief is usually afforded by mercurial and saline purgatives and alkaline diuretics.

From these headaches it is necessary to distinguish *Megrim*, which unfortunately is the form of headache to which the terms "bilious" or "sick" are still popularly applied. This is a neuralgia, which probably in most cases is in no way connected with hepatic derangement, the bilious symptoms being the result, and not the cause, of the attack, and the presence of bile in the vomited matter being, as in sea-sickness, simply due to the urgency of the vomiting. Although this view was enunciated two centuries ago by Sydenham, and since his time has been clearly set forth in many medical writings, of which I would mention, in particular, the Goulstonian Lectures of the late Dr. Symonds delivered in this college in 1858, and the excellent work of Dr. Edward Liveing§ recently published, it is still the fashion to attribute these attacks to "biliousness" or to "an excess of bile in the system".

But, while fully admitting that megrim is in no way connected with retained bile, I agree with those authors who believe that certain cases of megrim are toxic in their origin, being symptomatic of gout and of some other disorders. The late Sir Henry Holland, in his *Medical Notes and Reflections*, described hereditary periodic headaches associated with gout, and he added: "In conformity with this view, there is reason to believe that the kidneys are the excretory organs most concerned in giving relief in these cases, and principally by an increased "separation of lithic acid and its compounds".|| Megrim, as Dr. Liveing states, is sometimes the expression of what is called a latent gouty diathesis, or, in other words, of lithæmia. A father may have suffered from gout, and his son may become the victim of megrim. In some patients, megrim terminates when they are attacked with gout. "So evidently," observes Trousseau, "is it (megrim) a manifestation of the gouty diathesis that articular gout and megrim are observed in the same person, the one subsiding on the appearance of the other; and that it is often also the only expression of the hereditary tendency in subjects who are the children of decidedly gouty parents."¶ In connection with these observations, I would call attention to certain cases which have come under my notice of severe neuralgic headache occurring in connection with contracted granular kidneys, and being sometimes the first

* *Op. cit.*, New Sydenham Society's edition, vol. i, p. 432.

† *Nature and Cure of Gout*, 4th edit., 1823, p. 532.

‡ *Lecture on Pathology and Therapeutics*, 1867, p. 85.

§ *On Megrim and some Allied Disorders*. London, 1873.

|| *Medical Notes and Reflections*, 1839, p. 288.

¶ *Op. cit.*, New Sydenham Society's edition, vol. iv, p. 378.

* *Clinical Lectures*, New Sydenham Society's Translation, vol. iv, p. 236.

† *Anstie On Neuralgia*, 1871, p. 61.

symptom for which the patient has sought medical advice. The headache in these cases was evidently toxic, and in one instance fatal coma followed the subcutaneous injection of a quarter of a grain of morphia. The headache has been so severe that more than once I have known the case diagnosed as one of cerebral tumour. I have met with these cases so frequently, that I make a point of investigating the condition of the kidneys in all cases of neuralgic headache occurring for the first time in persons of middle or advanced age.

In this way, then, megrim may sometimes be traced to hepatic derangement, this derangement consisting, not in the retention of bile, but in that condition of liver which we have found to produce lithæmia and often to lead to gout; and, in accordance with this view, I have often noticed that megrim has been produced by particular articles of diet, and relieved by mercury, podophyllin, and other remedies which unload the liver.

6. *Vertigo and Temporary Dimness of Sight.*—Sudden attacks of giddiness are in many instances similar in their pathology to megrim, and giddiness in certain patients replaces the neuralgia. But giddiness, according to my experience, is, in a much larger proportion of cases, connected with hepatic derangement, lithæmia, and gout, and follows the use of certain articles of diet, such as tea, champagne, citron, etc. Many years ago, Boerhaave's commentator related the case of a man who, during two years, was always seized with vertiginous symptoms when he attempted to stand up. In vain had the ablest practitioners endeavoured to cure him. Quite suddenly, he had an attack of gout, of which disease, up to that date, he had had no indication; and from that moment he found himself free from the vertigo to which he had formerly been liable.* A medical friend of my own who has long suffered from gout, as certainly as he drinks a cup of tea or a glass of champagne is seized, often while walking in the street, with sudden giddiness; his head feels empty, and neighbouring objects seem to whirl round him; he does not lose consciousness, but he would fall did he not lay hold of the railing. After a few seconds or minutes, the attack passes off, but in some patients it is more persistent. Another friend who never has had gout, but whose urine is frequently loaded with lithates, was seized with dimness of sight and giddiness every night while writing. He took iron, quinine, and other tonics, but he got worse instead of better. He was advised to give up his profession for a time and try the effect of change of air; but, before taking so serious a step, he took a few doses of blue pill, and the symptoms at once and permanently disappeared. A third patient under my care, who for years had been subject to lithæmia, but never had gout, would be suddenly seized, while writing, with dimness of sight and specks floating before the eyes, or even with complete, but temporary, blindness of one eye. Here also iron and quinine disagreed, but the symptoms were removed by remedies directed against the liver. Many writers have referred attacks such as those which I have now described to derangements of the stomach. Trousseau, for example, who has described them under the designation of "vertigo à stomacho læso",† speaks of them as associated with epigastric pain increased by food, flatulence, acid eructations, and vomiting of glairy mucus; but he admits that the gastric derangement in which the vertigo is supposed to originate may not show itself, and this admission certainly accords with my experience. On the other hand, the circumstance of the frequent association of the vertigo with gout or lithæmia, and the fact that alkalies and aperients, which are the best remedies for these conditions, are also the remedies most likely to prevent a recurrence of the attacks of vertigo, make it probable that this has a toxic origin, and that the liver is the organ mainly at fault.

7. *Convulsions.*—In January of the present year, I saw a gentleman, about 58 years of age, suffering from cirrhosis of the liver. He had all his life been addicted to the pleasures of the table, and had suffered from hepatic derangements as long as he could remember. Six years ago, he became subject to severe spasmodic twitchings in his legs, followed on three occasions by several epileptiform seizures. Shortly after the last fit, he had his first attack of gout, and since then he had suffered repeatedly from the gout, but there had been no return of the convulsions or of the muscular twitchings. There was no evidence of renal disease. Many similar cases are, I believe, on record. For example, Van Swieten mentions the case of a man who had violent abdominal pains accompanied by delirium and general trembling, and subsequently a severe attack of epilepsy. From that date, he had repeated attacks of gout, but no return of the nervous symptoms.‡

8. *Noises in the Ears* are common symptoms in gout§ and also in lithæmia independent of gout. One patient has the feeling of a strong wind blowing into the ear; another compares the noise to that of flow-

ing water, or of singing or buzzing; while in another the sounds have a pulsating character, the sounds corresponding to those of the heart.

9. *Sleeplessness* may, of course, arise from many different causes, but one of its causes is that derangement of the liver which produces lithæmia. When this is the case, the patient is often heavy and drowsy after a full meal, and he may fall asleep at once on retiring to rest; but, after one, two, three, or four hours, he awakes, and then he either lies awake for hours, or he is constantly falling asleep, dreaming, or having the nightmare, and awaking—four or five times or even oftener in the course of one hour—until the morning comes, when he drops into a quiet sleep of an hour or more, or he is obliged to get up tired and irritable. This sleeplessness, like the vertigo we have already considered, is often induced by particular articles of diet, or by some unwholesome combination of them. What will excite headache, giddiness, or disorders of the circulation in some patients will in another cause sleeplessness. Sometimes, however, this symptom will occur when the patient is most careful as to diet. What is important also to note is, that in most of these cases, there are no obvious symptoms of gastric dyspepsia; the appetite may be good—too good in fact; the bowels may be regular; and there may be no pain, flatulence, or other discomfort after meals; but there will be found an unusual tendency to the deposit of lithates in the urine, and very often other phenomena of a so-called gouty diathesis. This form of sleeplessness was described a century ago by Cullen, the distinguished nosologist, in these words: "Persons who labour under a weakness of the stomach, as I have done for a great number of years past, know that certain foods, without their being conscious of it, prevent sleeping. So I have been awakened a hundred times at 2 o'clock in the morning, when I did not feel any particular impression; but I knew that I had been awaked by an irregular operation in that organ, and I have then recollected what I took at dinner, which was the cause of it. Dr. Haller is liable to the same complaint; and, in his larger work especially, he gives the particulars of his own case."* The affection has also been well described by Dr. Dyce Duckworth in some excellent observations on different forms of sleeplessness recently published.† It is, however, a form of sleeplessness not generally understood, and harm is often done to patients suffering from it by the administration of opiates and other soporifics, from ignorance of its real cause. Very often the symptom will be greatly relieved, if not entirely removed, by careful attention to diet, and particularly by moderation in, or abstinence from, wine; and, in some cases, a dose of carbonate of soda when the patient goes to bed, or when he first awakes, is of service. Some patients with this form of sleeplessness have told me that they never sleep so well as after a dose of calomel or blue pill.

10. *Depression of Spirits.*—The influence of the liver upon the animal spirits has been recognised by medical writers in all ages. To the belief in the existence of such an influence may be traced the origin of such terms as *Hypochondriasis* and *Melancholia*. Although it is not contended that the morbid states of mind, to which at the present day we apply these terms, have their origin in the liver, they are unquestionably, in many instances, accompanied and aggravated by derangements of this organ; and it is equally true that, independently of either hypochondriasis or melancholia, persons with functional derangement, or structural disease, of the liver are subject to fits of great depression of spirits and often groundless fears of impending danger, which cease when the liver is restored to its normal state.

11. *Irritability of Temper* is another common symptom of functional derangement of the liver, and is sometimes the first indication of anything wrong. A man who has previously borne the crosses of life with equanimity, and been amiable to those about him, gradually becomes disconcerted by trifles; his mind broods upon them; and he makes all around him unhappy, and himself the most miserable of all. His relatives, perceiving no other sign of indisposition, and failing to recognise the true cause, too often put down the ebullitions of temper to something mentally or morally wrong; but remedial measures calculated to restore the liver to healthy action, if resorted to in time, will often remove the irritability, and thus reveal its cause.

12. *Cerebral Symptoms and the Typhoid State.*—It is well known that restlessness, delirium, stupor, coma, subsultus, tremors, convulsions, a dry, brown tongue, and other phenomena of the "typhoid state", are apt to supervene in certain cases of advanced disease of the liver, whether attended by jaundice or not. These symptoms have been usually attributed to a suppressed secretion of bile. But the assumption that the elements of the bile are preformed in the blood, and are merely separated from the blood by the liver, we have already found to be devoid of foundation; and we have also found that bile is far from being, as commonly supposed, a deadly poison, and that its presence in

* Trousseau, *op. cit.*, vol. iv, p. 379.

† *Op. cit.*, vol. iii, p. 537.

‡ Trousseau, *op. cit.*, vol. iv, p. 379.

§ Scudamore, *op. cit.*, p. 376.

* *Institutions of Medicine*, 1770.

† BRITISH MEDICAL JOURNAL, December 27th, 1873.

the blood, even to saturation, does not give rise to cerebral symptoms. The cerebral symptoms referred to are often most severe when the jaundice is slight, or when there is none; and they are readily accounted for by the knowledge of the disintegrating function which the liver is now known to perform. When this function of the liver is arrested or seriously impaired, urea is no longer eliminated in sufficient quantity by the kidneys; lithic acid and deleterious products of disintegrating albumen even less oxydised, such as leucin and tyrosin, and perhaps others with which we are as yet imperfectly acquainted, accumulate in the blood and tissues; and the result is the development of symptoms of blood-poisoning similar to those which arise when the kidneys are unable to eliminate the products of albumen-disintegration, owing to disease of their own structure, or to an excessive formation of urea and other products, as happens in many febrile diseases. In acute atrophy, for example, the structure of the liver is destroyed and its functions arrested; leucin and tyrosin take the place of urea in the urine, and are also found in large quantity in the liver, spleen, and kidneys, while cerebral symptoms and the typhoid state are prominent features of the disease.

OBSTETRIC MEMORANDA.

TREATMENT OF POST PARTUM HÆMORRHAGE.

XIX.

AGREEING most cordially with my friend and former class-fellow, Mr. Alfred Godrich, in his remarks and suggestions as to the preventive treatment of *post partum* hæmorrhage in the JOURNAL for April 4th, I would add another suggestion. There exists one plan of treatment, for which I do not claim any novelty, but simply more importance than it at present enjoys. It is a plan for conducting the third part of labour—"all the circumstances which relate to the separation and expulsion of the placenta," according to Dr. Denman. It was my good fortune to become early impressed with this plan of treatment, which I am about to describe; and it is my firm conviction that by its means we can, with an amount of certainty otherwise unattainable, prevent the supervention of that most fearful phenomenon, "flooding". I have never had a case of flooding, although during the management of many varieties of labour, both natural and difficult, and obstetric operations, *post partum* hæmorrhage has threatened; and this I attribute solely to this way of conducting the removal of the secundines. The following is the plan I uniformly adopt. Immediately on the expulsion of the child—the binder of course being applied during the commencement of the second stage, and gradually tightened—I pass my hand (the left one), and grasp the uterus over the abdomen, and make firm pressure downwards in the axis of the pelvis. I then hook in my right index finger on to the edge of the placenta, which is invariably by this time in the vagina; and, with a gentle rotatory movement, extract. If, however, as is very seldom the case, the secundines be not low enough, I follow up the funis, and hook my finger at its insertion, and so effect its removal. I say, immediately the child is born I do this, because, if pressure be not directed at once to the uterus, the womb closes over the after-birth and prevents its speedy expulsion, and a proportionate amount of risk of *post partum* hæmorrhage is involved. I do not believe it right to teach that we should wait for a griping pain or two to effect the expulsion of the after-birth. These so-called griping pains should only cause the firmer contraction of the womb after the expulsion of the placenta. The advantages of this plan of treatment are the following. 1. We effect the speedy and safe removal of the placenta, and so place the uterus out of the danger of hæmorrhage. 2. Should *post partum* hæmorrhage set in, we can have the uterus more immediately under our control. 3. It hinders the supervention of an unusual amount of vascular excitement. I submit these imperfect remarks to the notice of the profession, in the hope that they may evoke some larger experience. But I would feel like that deep thinker who, with more meaning than will disclose itself at once, said, "Already my opinion, my conviction, gains infinitely in strength and sureness, the moment a second mind has adopted it." I am sorry that I am unable to state from whose writings I gained this valuable piece of knowledge of the treatment of the third stage of labour and the prevention of flooding; but the subject was treated of in Braithwaite's *Retrospect of Medicine*. Dr. Churchill, in his fifth edition of the *Theory and Practice of Midwifery*, says: "I have adopted this practice for twenty years, and rarely have the placenta detained more than five minutes; nor have I had a case of hæmorrhage during that time. If we wait some time before making pressure, the uterus closes over the after-birth, enough to retain, but not enough to expel it."

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LEAVES FROM MY DIARY DURING THE ASHANTEE WAR.

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III.—EN ROUTE.

WHEN steaming past Teneriffe, we were leaving behind the last traces of European civilisation, and about to enter within the boundaries of an entirely new climate and scenery. Low alluvial shores were to replace arid volcanic islands—realms of disease, countries presenting quite the opposite characteristics. We were about to enter the region of the north-east trades, with its hot sun and cold breeze, so trying to the invalid returning from West Africa, or to any one who has resided there for any length of time. Watching the flying-fish by day, and the beautiful phosphorescence of the sea at night; the gorgeous sunsets, in every hue of purple, violet, crimson, and gold; and the splendid moonlight, or, in its absence, myriads of brilliant stars, which light up the firmament of the heavens in an almost equal degree, was about all the occupation there was to wile away the long hours and days which intervened before the low shores of the Gambia were sighted. The short twilights precluded all attempts at reading in the evening; and, as it was becoming too warm to remain below with any degree of comfort, we, as a rule, remained on deck, until the putting out of one light after another in the cabin, warned us that we must either turn in at once or go to bed in darkness. The sea here heaves in a long rolling swell, not nearly so disagreeable as the choppy seas of the Bay of Biscay, or so provocative of sea-sickness—at least such appeared to be the general experience. The waves appear singularly free from zoological specimens. I have watched for hours without seeing anything more than a little Portuguese man-of-war, with its small purple crest glittering in the sunlight, while a sail on either bow is quite a *rara avis*.

Leaving Teneriffe on the evening of the 27th August, the peak was still visible at 6 A.M. On the morning of the 28th, it was becoming much warmer. The following meteorological observations show the gradual transition from the cooler to the more tropical climate, and one now becoming largely saturated with moisture, and give at the same time a general idea of the sensations felt by individuals as they passed from the Canaries into more intensely heated latitudes.

	Wet Bulb.	Dry Bulb.	REMARKS.
Aug. 28th.	72	75.....7 A.M.,	in cabin, port closed; at sea; left Teneriffe previous evening.
	71	74.....9 A.M.,	in shade in air on deck; feels warm; sea choppy; N.E. trade beginning to blow.
29th.	72	75.....7 A.M.,	in cabin, port closed; at sea; two days from Teneriffe; very warm.
	69	71.....9 A.M.,	in shade on deck; clouded, chilly, damp; about 50 miles off African coast.
	69	72.....3 P.M.,	in shade in air on deck.
	76	77.....7 A.M.,	in cabin, port closed; at sea; three days from Teneriffe; very warm & muggy.
30th.	76	78.....9 A.M.,	in shade in air on deck; off Arguil Bank.
	78	81.....3 P.M.,	in shade in air on deck; very hot and muggy; first really warm day we have had; 83 deg. in cabin at bed-time; rain-cloud threatening to windward; every one perspiring profusely while at dinner in the cabin.
	80	82.....7 A.M.,	in cabin; port closed; very close.
	80	82.....9 A.M.,	in shade in air on deck; very warm, clouded; light S.W. wind.
31st.	80	84.....3 P.M.,	every one looking pale, and perspiring, upon the least exertion, profusely; scarcely any breeze.
	80	82.....7 A.M.,	in cabin, port open; very close; perspiring profusely while dressing; water in coolers quite warm.
Sept. 1st.	77	80.....9 A.M.,	in shade in air on deck; in River Gambia, 2,500 miles from England—12 days 12 hours; slight rain, thunder; cool breeze from S.E.; misty clouds in this direction; nimbi all about.
	79	86.....3 P.M.,	in shade in air on deck; very close and uncomfortable.