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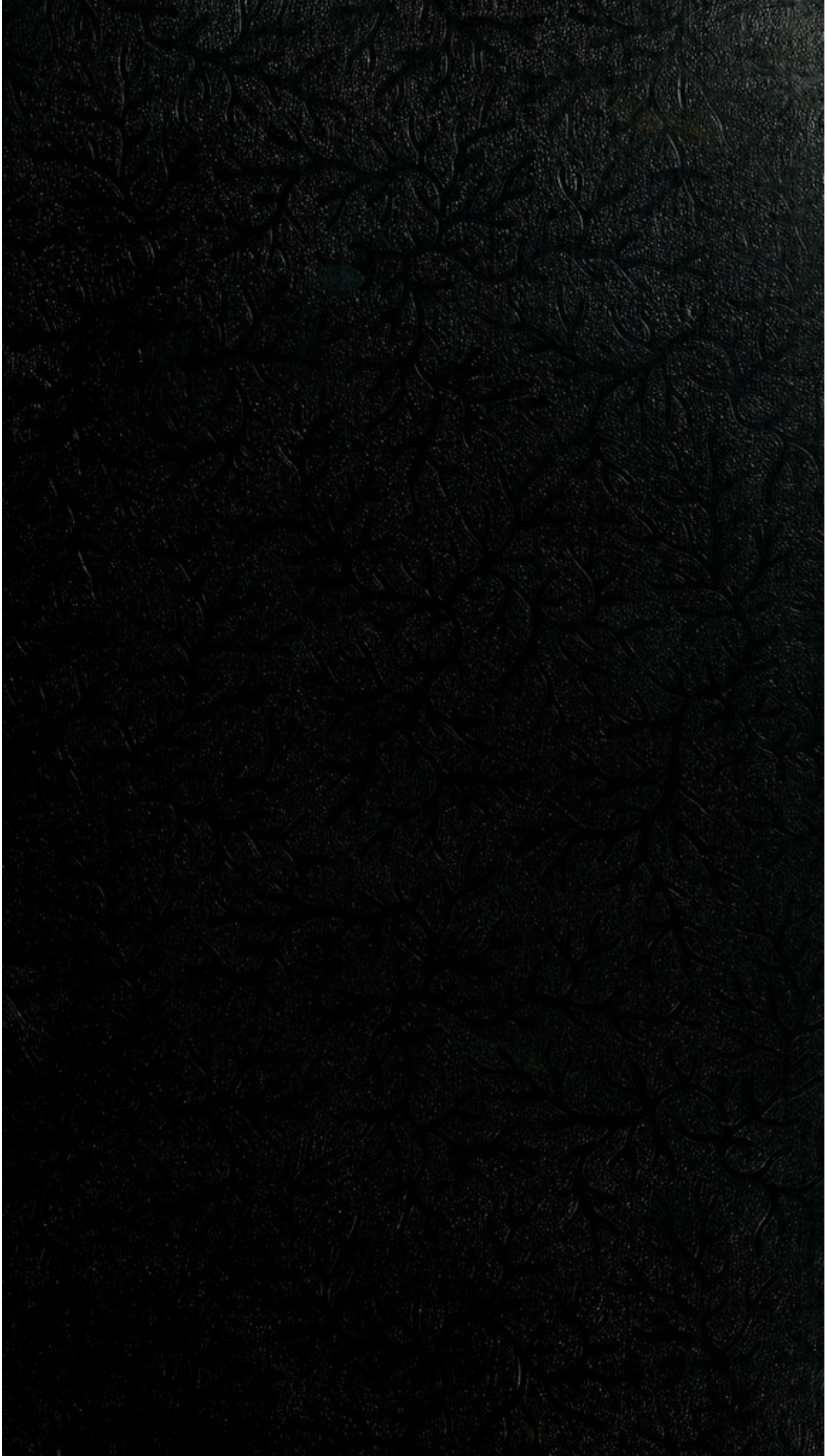

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TO

SIR CHARLES MANSFIELD CLARKE, BART.

M.D. AND PHYSICIAN TO THE KING,

THIS WORK

IS RESPECTFULLY DEDICATED,

AS A TRIBUTE OF

GRATITUDE AND SINCERE PERSONAL ESTEEM,

BY HIS OBLIGED AND VERY OBEDIENT SERVANT,

W. E. E. CONWELL.

# PREFACE.

Several works treating of Hepatic Diseases, and especially those that have appeared since the commencement of the present century, have furnished instances of Abscess of the Liver without the symptoms usually indicative, either of antecedent inflammatory action, or of existing suppuration; and have thereby shown, that structural changes of this organ are not characterised by the phenomena which indicate the presence of these lesions in other viscera. This peculiarity necessarily depends upon the organization, the anatomical connexions, the functions, and the physiological relations of the liver. In the work I now place before the medical public, I have endeavoured to contribute the results of experience acquired during twenty years, in which I have been, almost daily, more or less occupied in treating diseases of this organ, especially as they present themselves in Europeans

resident in India. In order that my observations may possess greater utility, especially to the inexperienced practitioner, on his arrival in the East, I have commenced with a minute examination of the structure and relations of the Liver, and have reviewed successively its functions, its diseases, and its principal organic changes. In the course of my practical studies at the bedside of the sick, and of my pathological researches at the dissecting table, I made copious notes, which I have abridged, and, with the remarks to which each case gave occasion, have arranged so as to form the second part of this work, in illustration of the doctrines advanced in the first part. I publish the results of my experience in an important class of diseases, with the hope of being useful to the junior members of the medical profession,—more particularly those practising in India, and in other warm countries.

Madras, 1834.

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# TREATISE

ON THE

# FUNCTIONAL AND STRUCTURAL CHANGES

OF THE

# LIVER.

## PART I.

### CHAPTER I.

#### INTRODUCTORY VIEW OF THE STRUCTURE AND ANATOMICAL RELATIONS OF THE LIVER.

1. The Liver, of man in the erect position, is pendulous from the diaphragm, but secured from rotatory movements by its conformation, and by its superior, anterior, and posterior attachments. It is of greater specific gravity than the subjacent gastro-intestinal canal, which being buoyant from containing gas, supports it, as it were, on an elastic easy couch. In all violent movements of the body, in the case of blows, &c., the liver, from its great size, weight, and inelastic structure, is especially exposed to injury. It acquires an increased momentum from movements communicated to

the body by falls, leaping, the motion of the sea, by walking, riding, &c. The comparatively free state of its anterior portion, augments the range of its motion according to the state of the hollow abdominal viscera; the pulmonary function in respiration, and the thoracic conformation, opposing its descent beyond a certain limit. The hepatic movements are further controlled by the abdominal muscles and fasciæ.

2. The Liver is attached to the inferior surface of the diaphragm (S. 8. 9.), and placed over the stomach (S. 23. 27. 28.), the inferior surface of the former, and superior surface of the latter, being in apposition with it. There are two depressions on the inferior surface of the right lobe; one receives the right supra-renal capsule and head of the kidney; the other embraces the head of the ascending colon, a little to the right of the indentation that receives the gall bladder. The liver is covered laterally by the peritoneum, false ribs, intercostals, &c.; its anterior margin by the abdominal parietes. The vertebral column, the aorta, and the œsophagus (S. 26.), correspond to the large sulcus towards the left on its posterior margin; and when engorgement or inflammation enlarges its volume near this part, the aorta and œsophagus are thereby more or less pressed upon (S. 3. 9. 22. 23. 26). Another smaller furrow between the great and middle lobe, (sometimes a perforation,) gives passage to the inferior vena cava; enlargement producing pressure of this

tube is said, sometimes erroneously, to have occasioned dropsy. The crura of the diaphragm, extending upwards on the spine, decussate, and leave a passage for the œsophagus; their muscular fibres terminating in the tendinous expansion of the diaphragm.

3. The Liver being fixed to the diaphragm, descends and ascends with that muscle in breathing. The stomach and intestines, when distended, press its anterior portion upward; and an empty state of these viscera allows it to descend. When the body is prostrate on the right side, the right extremity of the liver rests on the false ribs, this gland preserving its natural position; but when the body is extended on the left side, the great lobe bends a little to the left, and rests on the small curvature of the stomach, and in part on the duodenum. In this latter position, the right and left extremities of the liver approximate; the inferior surface of the right approaching the lobulus spigelii, and the superior surface being placed in a state of extension from the right to the centre.

4. The parts that compose the liver are: 1. *A partial peritoneal envelope.* 2. *A proper fibrous capsule, or membrane.* 3. *Nerves.* 4. *Arteries.* 5. *Veins of the portal circle.* 6. *Hepatic veins.* 7. *Acini, or the bile secreting organs* (small round glandular bodies, firmer than the surrounding parenchyma). 8. *Biliary pores and tubes, with the annexed gall-bladder.* 9. *Lymphatic, or absorbent vessels;* and

10. *Cellular structure.* The liver is nearly all covered by the peritoneum, and by a fibrous membrane, interposed between the hepatic tissue and it. This latter membrane adheres to the peritoneum on the one side, and to the liver on the other, and connects one with the other. Prolongations from it are extended throughout the hepatic tissue, as sheaths to the vessels; their structure being sero-fibrous and much firmer than it. Some writers call those sheaths an extension of the capsule of Glisson.

5. *The nerves of the cerebro-spinal system* convey volition and sensation, but the power of transmitting sensation is modified by the complex inosculations termed plexuses. The nerves of the ganglial system do not transmit sensation or volition. Their office is to convey the stimulus of vital action to the involuntary muscles, arteries, veins, absorbents, exhalants, glandular tissue, &c. This system anastomoses freely with the cerebro-spinal nervous system. The liver, like other glands, is abundantly supplied with ganglionic nerves; but it receives, by anastomoses, a considerable addition of cerebro-spinal nerves. Each cerebro-spinal nerve that anastomoses with one of the hepatic nerves, has a portion of one extremity plunged into the structure of the liver, the opposite extremity being distributed to muscular or membranous tissues, and the intermediate part is connected with the medulla oblongata, or the spinal cord. When a nerve composed of ganglionic and

cerebro-spinal filaments sustains injury from inflammation, &c. in the liver, the ganglionic filament does not announce it by pain, but the cerebro-spinal filament does, and the pain is felt at the opposite and remote extremity of the cerebro-spinal nerve. The symptoms of hepatic disease prove this. Accordingly, a chart exhibiting the opposite and remote distribution of the cerebro-hepatic nerves, and of the cerebro-spinal nerves corresponding to them, would indicate the situations of disease in the liver, from the seat of the symptomatic pains occasioned by it.

*Cerebro-spinal nerves related to the Liver.*

6. *The* NERVES *of the Liver arise from the solar plexus, and from the eighth pair.* These form plexuses around the hepatic artery, and these plexuses transmit filaments to accompany the ramifications of this artery to the acini: other filaments go to the vena portæ and accompany its branches to the acini; some also are distributed to the gall bladder, &c., the duodenum, and the great curvature of the stomach: moreover, several filaments are sent off directly to the liver from the convex part of the right semi-lunar ganglion, forming a secondary plexus, distributing filaments to the vascular system of this organ.

7. The EIGHTH PAIR (*Nervous Vagus, or Pneumogastric Nerve,*) originates posteriorly to the Corpora Olivaria (S. 1.), passes into the cranium,

and in passing sends one or two filaments to, and receives one from, the spinal accessory nerve.

8. *The* Accessorii, *or spinal accessory nerves of Willis*, arise by a series of filaments from the posterior part of the lateral surface of the cord, near the fourth cervical nerves, and progressively uniting on each side as they ascend, receive some additional filaments in their course. Within the canal they communicate with the sub-occipital, and sometimes with the first pair of cervical veins, which are distributed to the muscles at the superior posterior part of the neck (S. 1. 2.). *The accessory nerves* enter the cranial cavity with the cord, and pass out at the foramen lacerum with the pneumogastric, giving it a filament at their separation; at their exit they divide in two: the first branch communicates with the *pharyngeal, the hypo-glossal,* and *the superior laryngeal nerves;* it enlarges, divides into filaments, forms a kind of ganglion that again divides into filaments, and they blend themselves with *the pneumogastric nerves* (S. 3.). The other branch of *the accessory nerve* supplies the sterno-cleido-mastoideus, and communicates with the anterior branches of the third and fourth cervical nerves: the second and third cervical nerves send one each to it; it concurs on each side in forming the cervical plexus, and it is finally expended on the trapezius muscle (S. 4.).

9. Reverting to the *eighth, or pneumogastric nerves;* these, on quitting the foramen lacerum,

communicate with the glosso-pharyngeal, and from that communicating branch, a filament is sent off to the anterior rectus; it anastomoses with the hypo-glossal nerve and with ramifications from the superior cervical ganglion (S. 2. 3.). The pharyngeal branch is given off near the communication mentioned, (either above or below,) and at its origin a twig joins it from the spinal accessory nerve. The pharyngeal descending behind the internal carotid about the middle of the atlas, sends off some filaments that unite with others detached from the glosso-pharyngeal, and they form a net-work around the carotid (S. 5.). The pharyngeal branch divides in filaments which anastomose with others from the glosso-pharyngeal, the superior laryngeal, and first cervical ganglion, and these conjointly form the pharyngeal plexus. Its filaments are distributed to the entire pharynx, the constrictor superior and inferior, and the carotid; and filaments from the cervical ganglia anastomose with them on the common carotids (S. 3. 5.).

10. The superior laryngeal branch is given off below the former, and divides in two branches; namely, the external and internal laryngeal nerves; they anastomose with each other, with the superior cervical ganglion (S. 2.); the hypoglossal nerve, and they throwing twigs into the pharyngeal plexus (S. 3.). The external, approaching the margin of the larynx, gives filaments to the sterno-thyroid, thyro-hyoid, con-

strictor, inferior, and crico-thyroid muscles ; some filaments penetrating between the thyroid and cricoid cartilages, and some extending over the thyroid (S. 3. 33.). The internal laryngeal branch divides into soft filaments like rays, the superior branches being distributed to the membrane of the pharynx and epiglottis, several anastomosing with those of the opposite side (S. 33.), the inferior filaments running to the mucous membrane of the larynx and pharynx, to the arytœnoid gland and muscle, and to the crico-thyroid muscle (S. 3.).

11. The pneumogastric, having given off the laryngeal nerve, in the course of the neck, sends a twig to the cervical branch of the hypo-glossal nerve (S. 3.), one to the first cervical, and two or three filaments to the coats of the internal carotid at its commencement (S. 4. 5.). The cardiac branches of this nerve are considerable, but dissimilar on the right and left. The right turns round the carotid, and blends itself in the cardiac filaments of the inferior cervical ganglion. The left descends as a single branch the length of the carotid, expands itself on the arch of the aorta, and proceeds to lose itself in the cardiac plexus (S. 4. 5. 6. 7.).

12. The inferior laryngeal or recurrent branches are given off by the pneumogastric nerves in the thorax, and ascend to the neck ; the right and left differ both in their course and terminations. The right turns over the sub-clavian artery, reaches the trachea, and between it and the œsophagus

mounts to the larynx; at its origin it gives filaments to the cardiac branch of the pneumogastric (S. 1. 7.), and to those of the inferior cervical ganglion, and forms a kind of plexus with them between the sub-clavian artery and the trachea (S. 6.). A little higher it gives off other branches, of which some anastomose with the plexus mentioned (S. 12. 13.), others accompany the pulmonary artery (S. 19. 20. 22.), and some are distributed to the anterior cardiac plexuses (S. 7.). Other branches are given off directly from the recurrent to the œsophagus, and they anastomose with those of the opposite side and of the cervical ganglia, and others are distributed to the thyroid gland (S. 3. 33.), or pierce the trachea, and are distributed to the mucous crypts of its surface (S. 19. 20. 33.). At the inferior part of the larynx the recurrent sends twigs to the inferior constrictor of the pharynx (S. 33.), and there it divides into three secondary branches. They are distributed one to the mucous membrane of the pharynx, and the others to the crico-arytenoid muscles, and they terminate in the thyro-arytenoid muscle and the mucous membrane of the larynx, and form connections there with the superior internal laryngeal nerves (S. 3. 19. 20. 33.).

13. The left inferior laryngeal nerve differs from the former by originating lower in the chest, it describes a greater arch passing upwards, turn

ing over the arch of the aorta, and giving off its pulmonary and cardiac filaments to the posterior part of the pulmonary artery, and to that of the heart (S. 7. 8. 19. 20. 33.).

14. The pneumogastric nerves, after having given off the inferior laryngeal branches in the thorax, send numerous filaments to the bifurcation of the trachea (S. 19. 20.). Three or four descend on its anterior surface, subdivide and anastomose extensively with branches from the inferior laryngeal and the inferior cervical ganglion with which it forms the pulmonary plexus (S. 19. 20. 22. 27.). Some filaments are extended along and lost on the pulmonary artery, others on the anterior part of the lungs (S. 19. 20. 22. 27.). Several filaments go to the posterior part of the trachea, and are distributed to its membraneous (S. 33.) and mucous tissue; others are ramified in the œsophagus, and some are thrown into the pulmonary plexus (S. 8. 19. 20.).

15. The pneumogastric before reaching the lungs enlarges; then its filaments separate and form a network that is studded with small vessels plunged in cellular tissue. This is the commencement of the pulmonary plexus which receives additional filaments from the inferior cervical and the superior thoracic ganglia, and conjointly they form the great nervous retiform expansion, distributed to the pulmonary mucous crypts and membrane. The filaments of these very compli-

cated plexuses appear destined to the pulmonary mucous membrane and its crypts, not to the vascular system (S. 3. 8. 19, 20. 27. 33.).

16. The *Pneumogastric nerves* being separated into filaments to form the pulmonary plexuses, are again reunited on each side, into one cord, descending along with the œsophagus, and are named œsophageal cords or nerves; the right œsophageal nerve descends on the lateral and posterior part, and that of the left side on the anterior part, of the œsophagus (S. 8. 9. 19. 20. 24. 27. 28. 33.); they frequently anastomose with each other, and they give numerous branches to the œsophageal coats to the aorta, and they pass through the diaphragm with the œsophagus (S. 9. 19. 20. 22. 26.). The right œsophageal nerve, on entering the abdomen, is larger than the left, and at the right and posterior part of the œsophagus, it subdivides, forms a complicated plexus around the cardia from which filaments are ramified to the stomach and the neighbouring parts (S. 9. 22. 24. 28. 33.). The filaments distributed to the stomach run from the small to the great curvature on the posterior surface dipping into its coats; some filaments communicate with those of the left side, and proceed below the pylorus; and others extend into the hepatic plexus (S. 2. 9. 11. 21. 22. 23. 25.); some filaments are also sent to the splenic plexus, to the cœliac, the right gastro-epiploic, and they interlace with innumerable irradiations from the

solar plexus (S. 11. 14. 15. 26. 29. 30. 31. 32.). Many are expanded on the vena portæ, or reach the pancreas, the duodenum, or the gall-bladder (S. 11. 21. 23.).

17. The left œsophageal nervous cord divides into numerous longitudinal filaments, running from the cardia to the pylorus, and sending branches to the anterior surface of the stomach; at first superficial, and others gradually penetrating its coats; these filaments, having arrived at the pylorus, communicate with those of the right side; or, they follow the pyloric artery and join the hepatic plexus (S. 2. 3. 9. 11. 14. 15 21. 22. 23. 25. 26. 29. 30. 31. 32. 33.).

18. The very extended distribution and communications of the gastro-pneumonic nerve, have procured for it the name of intermediate sympathetic. Its subdivisions offer a series of variations so diversified, that two cases are rarely found in which they are quite similar. This in part accounts for the variety of symptoms that similar conditions of hepatic disease present in different persons.

19. The cervical plexus is formed of the anterior branches of the first, second, and third cervical pairs; it is situate on the posterior scalenus muscle; each anterior branch of those three nerves, after having received a filament from the superior cervical ganglion divides, and communicates one with the other by arches; and they give off from their convexities the filaments that

form this plexus. It communicates superiorly with the sub-occipital nerve (S. 1, 2.), below with the brachial plexus (S. 12.), and internally with the internal and middle cervical ganglia, by several filaments. It sends some branches to the spinal accessory nerve (S. 4.), furnishes several filaments to the muscles in its vicinity (S. 6. 13.), and divides into sundry descending branches, internal and external, and ascending superficial cervical branches (S. 6. 13.). The descending internal branch passes on the inside of the sterno-cleido-mastoideus, and goes to the middle of the neck to anastomose, by an inverted arch, with the cervical branch of the hypo-glossal or ninth pair (S. 2. 4. 6. 13.).

20. The phrenic or diaphragmatic branch terminates the cervical plexus inferiorly. Its chief filaments originate from the anterior branch of the third cervical, and it usually receives a slender filament from the second, and two or three from the brachial plexus (S. 12.), which join at the base of the neck or even at the thorax (S. 13.). Sometimes it receives also a branch from the descending filament of the hypo-glossal nerve. Varying more or less in their origin, they descend along the lateral and anterior part of the neck, between the great rectus, anterior of the head, and the anterior scalenus. On the anterior margin of the latter it gives delicate filaments to these muscles in passing (S. 8. 13. 19. 20.), and communicates with the inferior cervical ganglia, pene-

trates the thorax between the sub-clavian artery and vein, and proceeds through the anterior mediastinum to the diaphragm (S. 19. 20. 21.). The posterior branches of the third cervical are distributed to the lower part of the neck, and external part of the shoulder (S. 16. 17.).

21. The right phrenic is more vertical, and placed relatively nearer the front of the body than the left; before it enters the diaphragm it divides into six or seven filaments, which freely anastomose with each other, and they are expanded by ramifications to the superior surface of the diaphragm (S. 8. 16. 19. 20. 22. 23. 27. 28. 33.). Some branches pass through the diaphragm on the inferior cava, and are distributed in part to the inferior diaphragmatic surface, the others pierce the aponeurosis and go to the diaphragmatic arteries and veins: numerous ramifications are also sent to anastomose with the cœliac plexus, and others to the stomachic plexus of the pneumogastric nerve (S. 2. 9. 14. 15. 23. 28. 29. 30.).

22. The left phrenic nerve is relatively posterior to the right; it turns over the point of the heart (S. 7.), and hence is longer than the other; furnishes filaments to the convex surface of the diaphragm; divides, pierces it, and distributes branches to the inferior or concave surface, some to the œsophagus, and sends others to the solar and cœliac plexuses. Moreover, it furnishes filaments to the pillars of the diaphragm (S. 14. 32.), and the supra renal capsule (S. 15. 30.).

23. Returning to the external descending branches of the cervical plexus, they are divided into: First, the supra-clavicular, which are distributed to the muscles on the anterior part of the thorax, and some branches are given to the external part of the shoulder (S. 16. 18.). Second, the supra-scapular, that go to the superior margins of the trapezius, some filaments anastomosing with others of the spinal accessory nerve in the trapezius, and subdivide at the acromion, and are distributed throughout the deltoid (S. 12. 16. 17.). Third, sub-clavicular branches, which are plunged into the triangular space formed by the clavicle trapezius and sterno-cleido-mastoideus, and are distributed to the scapular extremity of the omo-hyoideus, the superior part of the infra scapularis (S. 16. 17.) and to the serratus magnus (S. 2. 4. 6. 32.) muscles; and disappear in the arm-pit. Fourth, the deep seated cervical branches descend and communicate with the spinal nerve, they are distributed to the trapezius (S. 2. 4. 32.), the levator scapulæ, the rhomboideus, and to the adjacent cellular tissue and lymphatic ganglia (S. 12. 17. 32.).

24. The mastoid, the auricular, and the superficial branches are distributed to the superficial and integumentary tissues of those and the adjacent parts, and the three anastomose freely with the facial nerve, and more sparingly with the other nerves adjoining (S. 10.).

25. The fourth, fifth, sixth and seventh pairs of

cervical nerves are connected with the liver: 1. by the phrenic nerve; 2. by the fourth cervical anastomosing with the accessory; 3. by anastomoses with the cervical plexus, and hence injuries of the liver affect these nerves. They distribute their posterior branches to the spinal muscles, traverse the scaleni and trapezius, their filaments disappearing; and they are lost in the integuments over the posterior part of the neck and superior part of the back (S. 4. 6. 13.). The anterior branches give each one or two filaments to the cervical ganglia, some to the scaleni, and, after anastomosing with one another, they concur to form the brachial plexus. Here let us remark that the fourth cervical sends a branch to the phrenic, and communicates with the third cervical; and that the seventh unites itself to a branch of the first dorsal nerve (S. 2. 4. 6. 17.).

26. The brachial plexus is formed by the interlacement and union of the anterior branches of the four last cervical nerves, and the first dorsal; and it extends from the anterior and lateral part of the neck to the arm-pit. It furnishes anterior and posterior thoracic branches, infra and supra-scapular branches, besides the nerves of the arm and of the hand. The anterior thoracic, distributed to the pectoral muscles, usually gives a network to the axillary artery (S. 18.). The posterior thoracic is distributed to the serratus magnus, but has relations with the scaleni and levator anguli scapulæ (S. 2. 4. 12. 13. 16. 17.). The

supra-scapular branch supplies the sub-scapularis, the infra-spinatus and teres minor (S. 4. 12. 13. 16. 17.). The sub-scapular branches supply, first, the latissimus dorsi (S. 31. 32.), secondly, the sub-scapularis; thirdly, a branch that anastomoses with the two former, gives filaments to the sub-scapularis, and is lost in the teres major and minor (S. 4. 6. 12. 13. 16. 17.). Finally, the brachial plexus supplies the arm, fore-arm, and the hand, (S. 12.).

27. The glosso-pharyngeal nerve arises from the medulla oblongata between the facial and pneumogastric nerves, by filaments which unite and pass through the foramen lacerum; sending a branch to the meatus auditorius, and receiving one from the stylo-hyoid branch of the facial nerve (S. 10.), and one from the trunk of the pneumogastric (S. 1.). The glosso-pharyngeal then gives off two long branches which descend on the carotid to the inferior part of the neck, joining branches of the cervical ganglia, and particularly some of the cardiac nerves (S. 7.). These filaments in their course anastomose with the pharyngeal branch of the pneumogastric, or throw themselves into the pharyngeal plexus (S. 3.). After this the glosso-pharyngeal gives filaments to the stylo-pharyngeal muscle, to the superior and middle constrictor, to the mucous membrane of the pharynx, to the tonsils, to the stylo-pharyngeus and posterior superficial part of the tongue, and disperses in the pharyngeal plexus (S. 3.).

After having furnished these branches, the nerve itself divides into three orders of branches; the superior go to the lingual muscles and the mucous crypts of its surface, and conjointly with a branch from the lingual nerve, form a sort of plexus round the tonsils (circulus tonsillaris) (S. 3.). The inferior branches descend in the hypo-glossal muscle, to the glosso-epiglottic mucous membrane and to the epiglottis. The middle branches pass through the muscular tissue of the tongue to be distributed to its mucous follicles, but scarcely at all to its muscular tissue (S. 3.).

28. The sub-occipital nerves arise by filaments from the side of the medulla oblongata (S. 1.), receive a filament from the first cervical, and pass out through the foramen magnum close to the vertebral artery; the two original branches of each side unite and form a ganglion anterior to the posterior arch of the atlas, and thence originate an anterior and a posterior branch. The anterior anastomoses with the first cervical nerve, with the inferior and superior cervical ganglia, and with the pneumogastric and hypo-glossal nerves, and it is distributed to the cervical muscles (S. 1. 2. 4. 6. 13.). The posterior branch divides into three or more filaments, which are ramified to the muscles of the neck, one having anastomosed with the first cervical nerve (S. 1. 2. 4. 6. 13.).

29. The hypo-glossal or lingual nerve originates by filaments between the corpora pyramidalia and olivaria, the filaments on each side unite and pass

out at the anterior condyloid foramen ; filaments from this nerve anastomose with the nervous network formed at the atlas by the first cervical and sub-occipital nerves (S. 1. 2.), one branch being distributed to the muscles of the tongue (S. 3.). The descending cervical branch (descendens noni,) anastomoses with the internal descending branch of the cervical plexus ; thus constituting an inverted arch, from the convexities of which, numerous filaments originate that form a small plexus. Previous to its communication with the cervical plexus, filaments are given off to the Omo-hyoid, sterno-hyoid, and sterno-thyroid muscles (S. 3.). The small plexus just mentioned gives off internal, external, and inferior branches, distributed to the omo-hyoideus, sterno-thyroideus, and the carotid ; and they anastomose with the third and fourth cervical nerves, and with the phrenic (S. 3. 4. 5. 6.). After the nerve has parted from the descending cervical branch, it gives filaments to the mylo-hyoid, hyo-glossal, and thyro-hyoid muscles (S. 3.) ; it receives one from the superior cervical ganglion, and sends others to the superior constrictor of the pharynx, to the styro-pharyngeal, the genio-hyoid, mylo-hyoid and genio-glossal muscles ; it communicates with the inferior dental nerve (S. 3. 10.), and on the hyo-glossal muscle, its numerous filaments by frequent anastomoses, form a sort of plexus from which all the filaments communicate with the lingual branch belonging to the inferior maxillary

nerve (S. 3. 10.). At the anterior margin of the hyo-glossal muscle, it plunges with the lingual artery into the substance of the tongue, and terminates about an inch from its anterior extremity; its filaments constantly anastomose with each other, and it is wholly distributed to the glossal muscular tissue (S. 3. 9.).

*Ganglionic nerves related to the liver.*

30. *The great sympathetic nerve*, or the *ganglionic system*, commences by the *cervical* and *spinal ganglia*. The *first ganglion* is situate on the rectus anterior, is covered by the internal carotid, and is posterior to the inferior angle of the lower jaw. It sends off numerous branches:—first, *ascending branches* that give a plexus to the carotids (S. 5.). Second, it anastomoses with the vidian nerve, and gives two or three branches to the pharynx (S. 1. 3. 10.). Third, two or three others enter the cavernus sinus, form a plexus, and join the nervi abducentes oculorum, or sixth pair (S. 34.). Fourth, several filaments proceed to the pedicles of the pituitary gland (S. 35.). Fifth, a filament anastomoses with one from the glosso-pharyngeal, and one from the vidian nerve (S. 3.). Sixth, a filament traverses the cavernous sinus to join the first branch of the fifth pair, and one joins the ophthalmic or lenticular ganglion (S. 34. 35.). Seventh, numerous filaments extend to the ophthalmic artery, and one seems to accompany the central optic artery to the retina (S. 34.). Eighth,

others accompany the divisions of the carotid within the cranium (S. 5.). *Inferior branches;* first, a branch covered by the carotid, internal jugular, the pneumogastric and hypo-glossal nerves, descends to the middle cervical ganglion, or when that is wanting, to the neck of the first rib. In this course it sends some filaments to the third and fourth cervical pairs (S. 4.), and others which pass to the œsophagus, and surrounding cellular tissue; one also anastomoses with the external laryngeal of the pneumogastric, and is distributed over the thyroid cartilage (S. 3. 33.). Second, two or three branches pass into the thorax and unite to form the cardiac plexus (S. 6. 7.).

31. *The external branches.* The two superior anastomose, traverse the rectus capitis anterior, separate and then anastomose with the net-work formed by the sub-occipital and first cervical nerves, about the transverse apophysis of the atlas (S. 4. 13.). The second bifurcates, one branch inosculating with an interior filament of the first cervical, the other with that of the second (S. 2. 13.). *The inferior branches* proceed from the ganglion, or the foregoing nerve, send filaments to the scaleni and rectus anterior muscles (S. 13.), and they anastomose freely with the third cervical pair (S. 2. 4.). *The internal branches*, first give numerous filaments to the great rectus anterior of the head and longus colli, and terminate variously on the larynx and pharynx, some by distribution, others by anastomoses with cerebral nerves (S. 3.

33.). *The anterior branches* distribute first, filaments that anastomose with the facial nerve or portio dura (S. 10.); second, filaments that inosculate with others proceeding from the glosso - pharyngeal nerves posterior to the bifurcation of the carotids, and from an interlaced plexus that sends filaments to form a minute plexus round the continuation of these vessels, and to accompany the divisions of the carotids to their ultimate terminations (S. 5.). The carotid plexus sends branches to the pharynx, larynx, and trachea (S. 3. 33.), and different points of these extended plexuses communicate with each other. The ultimate branches of the superior cervical ganglion form the superior cardiac nerve (S. 6. 7.).

32. *The middle cervical ganglion* is often wanting, and is sometimes double; when present it is placed opposite the fifth or sixth cervical vertebra, near the bend of the inferior thyroid artery on the longus colli, posterior to the carotid artery, internal jugular vein, and pneumogastric nerve; and it gives off, first, *inferior branches*, communicating filaments as they descend to the sub-clavian plexus, and terminating in the inferior cervical ganglion (S. 6.); second, *external branches*, of which one pierces the scalenus, and anastomoses with the sixth cervical, and sometimes the fourth and fifth also (S. 6.). Third, *internal branches*, some of which form a plexus round the inferior thyroid artery and its divisions; some ramify over the thyroid, tracheal, and œsophageal surfaces, and there anas-

tomose with the recurrent (S. 3. 33.); others join and enlarge the recurrent (S. 33.); some go to the carotid plexus (S. 5.), and one joins the phrenic (S. 2. 3. 4. 5. 6. 7. 8. 19.). Fourth, the *anterior branches*, two or three of which form the middle cardiac nerves (S. 11. 12. 34.).

33. *The inferior cervical ganglion*, placed behind the vertebral artery on each side, between the transverse apophysis of the seventh vertebra and the neck of the first rib, usually extends to the first inter-costal space, and has superior, inferior, internal, external, and anterior branches. First, *superior branches;* some of these communicate with the middle cervical ganglion (S. 2.). A fasciculus of filaments form a plexus round the vertebral arteries that extends to the second or third vertebra, where one of them anastomoses with the anterior branch of the sub-occipital nerve (S. 1.), others enter the cranium and are lost on the basilary artery (S. 1.). The vertebral plexuses in their course send numerous filaments to the inter-vertebral muscles, and they anastomose with one filament from every cervical nerve as they quit the intervertebral foramina (S. 2. 4. 5. 13.). One branch ascends between, and is distributed to, the great rectus anterior and the longus colli (S. 13.). Second, the *inferior branch*, when double, embraces the sub-clavian artery, and communicates with the thoracic ganglia. Third, *internal branches*, are few, short, and irregular; some are lost in the longus colli; others go to the pulmonary plexus

or to the left part of the transverse aorta; some join the recurrent, others the diaphragmatic nerve (S. 8.). Fourth, *external branches* embrace, and form plexuses around, the sub-clavian arteries, visible on the superior part of the arm, and on the internal mammary artery (S. 1. 2. 7. 18.). Some of their filaments are lost near the inferior insertions of the scaleni (S. 2.); others anastomose with the anterior branches of the cervical nerves about to form the brachial plexus (S. 4. 5. 12. 16.); and some communicate with the first pair of dorsal nerves (S. 6. 16. 17. 32.). Fifth, *anterior branches*, which after a short course unite to form the inferior cardiac nerves. The three cardiac nerves are not disposed alike on each side, but they unite to form the cardiac ganglion from which the plexuses arise.

34. The *cardiac ganglion* forms a point of union for the three cardiac nerves, behind the arch and near the origin of the aorta; it furnishes the filaments thus numerously subdivided and distributed to the heart and great vessels. First, *anterior filaments* to the aorta, and some to the anterior coronary plexus. Second, *posterior branches* to the anterior part of the pulmonary plexus. Third, *inferior branches*, more numerous, and specially distributed to the heart; these are divided into two classes; first, those distributed to the ductus arteriosus and pulmonary arteries, of which many enter the pulmonary tissue, and others proceed to, and anastomose with, the pulmonary

plexuses. One considerable branch subdivides to anastomose and interlace with the posterior coronary plexus. Second, the branches proceeding between the aorta and pulmonary artery, of which one part goes directly to the posterior coronary plexus, one passes to it between the two great vessels, and some turn over the aorta and base of the heart to form the anterior coronary plexus on that artery (S. 6. 7. 8. 16. 17. 18. 19. 20. 22. 27.).

35. The *thoracic ganglia* are smaller than the cervical, and are twelve on each side, situate laterally to the spinal column, anterior to the head of each rib, or between the intercostal spaces; yet their number may vary. They communicate with each other, and furnish external and internal branches. First, *the nerves of communication* are very considerable, not ramified, preserve an equal course from one ganglion to the other, and the intercostal arteries constantly pass posteriorly to them. In their course they give minute filaments over the surface of the ribs and to the intercostal muscles (S. 32.). Second, the *external filaments* vary from one to four, pass upwards and outwards, and anastomose with each of the anterior branches of the dorsal nerves as they issue from the spine, the shorter filaments being lost amongst the intercostal muscles (S. 18. 19. 20. 22. 27. 28. 31. 32.). Third, *the internal filaments* are numerous and variously distributed; some anastomose with the pulmonary plexuses, others proceed to the cellular

tissue (S. 27.), and one from the tenth ganglion accompanies the aorta, anastomoses intimately with its opposite filament (S. 26.), and entering the abdomen with it, terminates in the cœliac plexus (S. 8. 9.).

36. *The great and little splanchnic nerves* arise from the last six thoracic ganglia. *The great splanchnic* proceeds from the sixth, seventh, eighth, ninth, and sometimes the tenth thoracic ganglia on the side of the spine, external to the pleura, and the branches unite into one trunk at the eleventh dorsal vertebra. This nerve enters the abdomen by a small opening in the pillars of the diaphragm, passes posteriorly to the stomach, divides into several filaments, and terminates in the semi-lunar ganglion (S. 8. 9. 20. 23. 27. 28.). *The little splanchnic nerve* originates by a branch from the tenth, and one from the eleventh thoracic ganglia. These unite on the eleventh dorsal vertebra, as they pass downwards, and pierce the diaphragm. On entering the abdomen, this nerve divides into two; one branch of which ascends and anastomoses with the great splanchnic, the other is distributed chiefly to the renal plexus (S. 15. 30.), the residue entering the solar plexus (S. 7. 8. 9. 11. 14. 15. 20. 21. 22. 23. 26. 31. 33.).

37. *The right and left semi-lunar ganglia* are placed on the pillars of the diaphragm, and extended to meet and anastomose on the aorta. Their superior external extremities receive the

great splanchnic nerves; their internal inferior extremities either meet or communicate freely. The right, extended from the pillar of the diaphragm over the cava near the head of the pancreas, usually touches the supra-renal capsule and emulgent artery (S. 15. 30.); the other, placed on the left pillar, often covers the diaphragmatic artery, and gives it branches (S. 19. 20.); the tail of the pancreas covering it, the splenic vein being near its superior, and the emulgent artery near its inferior, extremity (S. 15. 30.). This great assemblage of nerves and ganglia forms an interlaced net-work that sends out its filaments, diverging like rays, and is hence denominated the solar plexus. Extending across to the spine, aorta, and pillars of the diaphragm, the stomach is anterior, the liver and diaphragm superior, and the pancreas rather inferior to it. The right pneumogastric contributes much to it (S. 11.), and the left augments it by some filaments. This great system seems to be essentially destined to the aorta and its ramifications, and it forms and transmits a secondary plexus to accompany every one of its branches severally and separately (S. 26.).

38. *Secondary abdominal plexuses.* First, *the sub-diaphragmatic plexus* accompanies the diaphragmatic arteries (S. 8. 19. 20. 22. 23.), some are lost in the muscular tissue, others accompany the arteries, and many, especially on the right side, anastomose with the phrenic nerves (S. 16. 17. 19. 20.). Second, *the cœliac plexus* is a pro-

longation of the solar extended to the cœliac artery, and many branches from the pneumogastric nerves come to blend with it (S. 1. 8. 16. 17. 19. 20. 22.), and it receives some from the last thoracic ganglion (S. 22. 27. 32.). This plexus gives origin to several others. *The coronary plexus* of the stomach embraces the coronary artery by a circle of small ganglia, and when this vessel sends off a branch to the liver, the plexus gives off accompanying filaments. Along the small curvature it sends numerous ramifications to both sides of the stomach that anastomose freely with the pneumogastric (S. 1. 3. 8. 9.); near the pylorus, the superior remaining filaments join the hepatic plexus; the inferior form a plexus on the anterior part of the right gastro-epiploic artery (S. 9.).

39. *The hepatic plexus* is distributed to the hepatic artery and to the vena porta; near the pylorus it divides into superior and inferior portions. *The inferior portion* goes to the posterior part of the right gastro-epiploic artery, anastomoses with those of the coronary plexus, and gives this vessel a net-work; it detaches numerous filaments to the large curvature of the stomach, and sends others, with arterial branches, to the pancreas, and some to the duodenum (S. 9.). *The superior portion of the hepatic plexus* gives filaments that interlace around the neck of the gall-bladder, from whence also some are extended to its coats (S. 11.). It gives a plexus to the pyloric artery, and anastomoses with the superior filaments that

terminate the coronary plexus (S. 9.). Some filaments accompany the common duct to the duodenum (S. 9. 11.), but the chief part enters the liver with the biliary ducts, the hepatic artery, and vena porta. In the fœtus the filaments of this part collect and attach themselves to, and accompany, the umbilical vein to the placenta.

40. *The hepatic plexus* receives numerous filaments from the right pneumogastric nerve. The convex part of the right semi-lunar ganglion also gives several filaments that pass through directly to the liver, and form a separate plexus. *The splenic plexus* originates by a few filaments from the cœliac, forming two or three ganglia that issue filaments, of which several accompany arterial branches into the pancreas; others accompany the left gastro-epiploic artery, and are partly lost in the omentum; a great part of them play along the splenic artery, and some filaments are sent to the vasa bavia (S. 23. 25. 31.).

41. Third, *The superior mesenteric plexus.* The solar plexus having given off the cœliac, extends along the aorta, and at the origin of the superior mesenteric artery, gives off a very considerable plexus to it, studded with ganglia. This plexus accompanies all the divisions of that artery, giving filaments to the transverse duodenum, expanding in the mesentery, embracing the lymphatic ganglia, and distributing their filaments over the jejunum. Some filaments passing to the right extremity of the pancreas, accompany minute arteries to

the duodenum. The right lumbar-colon and the cœcum receive filaments through the meso-colon from the plexuses of the middle and ilio-colic arteries. These filaments are extremely tortuous and interrupted by ganglia, especially observed at the intestinal margin.

42. Fourth, *the inferior or left mesenteric plexus* is continuous with the former on the abdominal aorta (S. 26.), and at its origin receives numerous distinct branches from the lumbar ganglia (S. 14.), and from the renal and spermatic plexuses (S. 14. 30.). It forms a close net-work around the inferior mesenteric artery in its course through the meso-colon to the pelvis, and divides. The internal is the smaller of the two; encircles the primitive and external iliacs, and the external hypogastric arteries. The other portion of the inferior mesenteric plexus accompanies the artery and its ramifications through the meso-rectum. These filaments interlace loosely, many of them terminating in the mesenteric tissues, and the rest in the colon.

43. Fifth, *the renal or emulgent plexuses* arise together from the net-work of the solar and cœliac plexuses, the external part of each semilunar ganglion, and from the expansion of the little splanchnic nerves. They are also joined by two considerable nerves, the first originating from the eleventh and twelfth thoracic ganglia, the others from the communicating branch between the last thoracic and the first dorsal ganglia. They both

pierce the diaphragm and anastomose before they are blended in the renal plexus. The two first lumbar ganglia often contribute filaments to them. Each plexus communicates by three or four ganglia on the origin of the renal arteries, that furnish from their circumference rectilinear filaments which interlace around the arteries, and when each artery is about to divide, blend with other filaments (to be mentioned), and form small ganglia posterior to the artery or vein, and penetrate the renal tissue with those vessels. At the origin of the capsular arteries the renal plexuses afford filaments to form around each, a small secondary plexus which sends filaments to the side of the diaphragm, and others that communicate with the semilunar ganglion. Sixth, *the spermatic plexuses* originate from the renal by some filaments that accompany the artery to the testicle in the male, and to the ovary and fallopian tube in the female.

44. *The lumbar ganglia*, five on each side, and sometimes only two or three, placed between the twelfth rib and the sacro vertebral articulation, on the anterior and lateral part of the vertebral bodies, near the great psoas, posterior to the cava on the right, and the aorta on the left; they are more distinct and often larger than the thoracic ganglia. Their branches are very white, and disposed into those of communication, external and internal. *The branches of communication* are irregular, sometimes formed of three or four filaments (fascicu-

lated), at others, the communication is interrupted by the want of uniting branches;—again, the ganglia are sometimes confounded together, and are thus continuous without branches; their consistence is very considerable, and their dimensions and positions variable; the first unites the first lumbar to the last thoracic ganglia.

45. *External branches of the lumbar ganglia.* Each usually gives two or three filaments, and sometimes a common trunk, which pass anterior to, and sometimes turn round, the lumbar arteries; those of the superior ganglia pass obliquely upwards and outwards; those of the central ganglia have a transverse course; and those of the inferior ganglia pass obliquely down: they all soon enter the serrated insertions of the great psoas muscle in their course to anastomose with the anterior branches of the lumbar nerves, as they issue from the intervertebral foramina (S. 14. 15. 29. 30. 31. 32.). Some very delicate filaments originate either from these, or sometimes from those of communication, and are distributed in the great psoas (S. 32.). *The external filaments* of the lumbar ganglia are very delicate; interlace frequently on the anterior surface of the abdominal aorta (S. 26.), and often blend with minute ganglia. This aortic plexus sends numerous filaments to the splenic, hepatic, iliac, and hypogastric arteries.

46. *The sacral ganglia*, three or four on each side, usually in part occupy the sacral foramina. They are covered by the peritoneum, and plunged

in cellular tissue. They communicate with each other, in a manner similar to the lumbar ganglia, and the first sacral (nearly always) with the last lumbar. Their filaments are external, internal, and anterior: first, *the external sacral branches* are thick and short, and anastomose with the sacral nerves; some filaments going to the pyriformis muscle and some to the levator ani. Second, *the internal sacral branches* anastomose with those of the opposite side, and form a plexus on the centre of the sacrum. Third, *the anterior sacral branches* unite with filaments from the vesical, uterine and hœmorrhoidal nerves, and from the sciatic, inferior mesenteric and aortic plexuses, to form the hypogastric or pelvic plexuses. These send branches to accompany the arteries to the rectum, bladder, vesicula seminalis, uterus, vagina, and the anus.

*Spinal nerves related by anastomoses to the liver.* *The twelve pairs of dorsal nerves*, on issuing from the intervertebral foramina, divide into posterior or dorsal, and anterior or intercostal. *The posterior* or *dorsal branches* generally subdivide into deep seated and external branches, the former are distributed to the muscles of the spine and back, sending some filaments to the skin (S. 32.), the others give filaments, in passing, to the sacro-lumbalis and longissimus dorsi, trapezius and rhomboideus, and are finally distributed to the integuments (S. 32.). The anterior dorsal branches receive each one or two filaments from the thoracic ganglia and from the intercostal nerves (S. 2. 4.

8. 16. 18. 20. 22. 27. 32.). *The anterior branch of the first pair* pierces the intercostal muscles, and gives a branch that is lost on the superior anterior part of the thorax (S. 18. 20.), the nerve itself going to and joining the seventh cervical to assist in forming the brachial plexus (S. 12. 16. 17.). *The anterior branch of the second dorsal pair*, having given a branch to the intercostals, divides into brachial and intercostal branches at the anterior margin of the serratus magnus. *The intercostal branch* gives additional branches to the intercostals, pierces them near the sternum, and is distributed to the great pectoral and to the anterior thoracic parietes (S. 16.). *The brachial branch* pierces the intercostals, giving filaments to them (S. 13.), receives a branch from the cutaneous nerve in the arm-pit (S. 12.), sends numerous filaments to the integuments (S. 16, 17.), and is distributed by very multiplied ramifications near the elbow (S. 12. 16.).

48. *The anterior branches of the third dorsal pair*, having given branches to the intercostals, divide at the middle of the third rib; the intercostal portion proceeding to be distributed over the sternum and thorax (S. 18. 20.), the other, or brachial portion, penetrates the intercostals, giving filaments to them, passes to the arm-pit, and is lost on the inner side of the arm (S. 12.). The *anterior branches of the fourth, fifth, sixth, and seventh dorsal pairs*, having furnished intercostal filaments freely (S. 20.) bifurcate at the middle of each rib; the

internal branches follow the original course, pierce the intercostals, and are distributed to the thoracic integuments and the great pectoral muscle (S. 18.). *The external branches* divide into two parts, one is distributed to the lateral parts of the thorax (S. 20. 22.), the other to the external oblique muscle of the abdomen and to the skin (S. 25. 27. 28.). *The anterior branches of the eighth ninth, tenth, and eleventh dorsal pairs* divide at the same distance from the intervertebral foramina, and hence nearer to their anterior extremities. The internal branches having accompanied the ribs to their extremities, pass out between the insertions of the diaphragm to the abdominal parietes, and divide into two series of filaments ; one distributed to the intercostals and lateral thoracic parietes (S. 20. 22.), the other to the muscles of the abdomen, and to its anterior parietes (S. 25. 27. 28.). *Anterior branches of the twelfth dorsal pair*, send communications to the first lumbar pair, pass and give filaments to the quadratus lumborum (S. 14. 32.), and to the diaphragm (S. 8. 19. 20. 22.), and divide into two at the anterior extremity of each rib. One pair of these goes to the oblique abdominal muscles, and are lost in the integuments near the spine of the ileum ; the other passes through the little oblique muscles, and are lost in the recti and pyramidalis (S. 8. 25.).

49. *The five pair of lumbar nerves* arise from the spinal chord, by filaments close to each other and descend obliquely ; the posterior series of each

enlarge and unite in the form of a ganglion in the intervertebral foramen, from which filaments issue that unite to the anterior series, and form a common trunk which divides into anterior and posterior branches. First, *the posterior lumbar branch* passes between the transverse apoplyses of the two first lumbar vertebræ, gives branches to the transversalis and the sacro lumbalis (S. 14. 32), the latissimus dorsi, the external abdominal oblique, and the inferior serratus muscles, becomes superficial at the spine of the ileum, and is lost in the integuments of the superior part of the thigh (S. 31. 32. 36.). *The anterior lumbar branch* receives two communicating branches, one from the first lumbar ganglion and one from the twelfth dorsal pair, passes under the origin of the great psoas muscle, sends a branch to the anterior portion of the second lumbar nerve, and is blended in the lumbo-abdominal plexus.

50. *The posterior branch of the second lumbar nerve* passes between the transverse apophysis, sending branches to the transversalis muscle, and, traversing the sacro-spinal muscular mass, and giving off branches (S. 14. 32.), becomes superficial near the spine of the ileum, and is distributed on the superior posterior part of the thigh (S. 36.). *The anterior branches of the second lumbar nerves*, communicate with the first and second lumbar ganglia by their anterior branches, and unite with the lumbo-abdominal plexus. *The posterior branches of the third lumbar nerves* are supplied to the same parts (S. 14. 32.). *Anterior branches of*

*the third lumbar nerves* communicate with the second and fourth lumbar nerves, and with the corresponding ganglia; and they assist in forming the lumbo-abdominal plexus (Par. 51.). *The posterior branches of the fourth and fifth lumbar nerves*, send a few filaments to the transversalis muscle, and are distributed to the sacro-spinal muscular mass (S. 14. 32.). *The anterior branches of the fourth and fifth lumbar nerves* communicate with each other, and the corresponding lumbar ganglia; that of the fourth receives a branch from the third and sends a branch to the fifth, which terminates the lumbo-abdominal plexus by passing on to the brim of the pelvis to enter the sciatic plexus.

51. *The lumbo-abdominal plexus* is formed on each side by the union of the five anterior lumbar branches, is situated on the lateral part of the second, third, fourth, and fifth, lumbar vertebræ, posterior to the great psoas, and resembles a cord, small above and large below. It communicates above with the anterior branch of the twelfth dorsal, and below with the sacral plexus by the anterior branch of the fifth lumbar pair. It terminates by these nervous cords. The crural, the obturator, and the sacro-lumbar nerves, having first supplied musculo-cutaneous branches, which are distributed to the lumbar abdominal and pelvic muscles (S. 14. 32.), and to the integuments as low as the knee (S. 36. 37.), and genito-crural branches that pass from the psoas, receive each a filament from

the second lumbar, and divide into external and internal; the first goes to the groin, becomes cutaneous, extends to the middle of the thigh, and anastomoses with the crural; the internal goes to the envelopes of the testicle, the dartos, and the scrotal integuments.

52. *The crural nerve* originates from the anterior branches of the first four lumbar nerves under the psoas; goes over and gives filaments to the iliacus internus, divides a little, passing out under Poupart's ligament, separating into superficial, external, and internal, deep-seated branches. *The superficial crural branches* are distributed to the integuments on the internal and anterior surface of the thigh, and many filaments accompany the saphena to the superior part of the leg (S. 36. 37.). *The external deep-seated crural branches* are distributed to the muscles in that portion of the thigh. *The internal deep-seated crural branches* supply the posterior, some internal muscles, and a great part of it is distributed about the knee (S. 37.); a large branch accompanies the internal saphena in its ramifications, even to the great toe. *The obturator nerve* arises mostly from the second and third lumbar, and sometimes from the fourth, descends between the psoas and vertebra, accompanies the obturator vessels, giving branches to these muscles, and reaches the superior part of the thigh. There it divides into internal and external branches, which are distributed to the muscles of the thigh (S. 36.). *The sacro-*

*lumbar nerve*, which is double the size of the crural, is formed by the anterior branch of the fifth lumbar, and a branch from the fourth; descends anterior to the sacrum, and near the sacro-iliac symphisis blends with the sciatic plexus. *The superior gluteal nerve* is furnished by the sacro-lumbar in its course, increased by some filaments from the sciatic plexus.

53. *The sacral nerves* are usually six pairs, some times five, rarely four; and they consist of anterior and posterior fasciculi that pass through the corresponding sacral foramina. *The posterior branches* of the first sacral pair traverse and give filaments to the sacro-spinalis muscle, and are distributed to the glutæus major and to the skin. *The anterior branches* communicate with the sacral ganglia above, with the sacro-lumbar nerve below, and with the second sacral; and they concur to form the sciatic plexus. *The posterior branches* of the second sacral pair pierce, and give filaments to, the sacro-lumbalis, and the gluteal muscles, and are distributed to the integuments of the thigh and margin of the anus. *The anterior branches* communicate with the sacral ganglia and join the sciatic plexus. *The posterior branches* of the third sacral pair communicate with the second and fourth pairs, traverse and give filaments to the gluteal muscles, and are distributed to the integuments on the margin of the anus, and the inferior and inner surface of the thigh. *The anterior branches* of the third sacral pair communi-

cate with the sacral ganglia, send filaments to the hypogastric plexus, anastomose with the adjoining nerves, and enter the sciatic plexus. *The posterior branches of the fourth sacral pair* follow the course of the third pair, and the anterior branches join the sciatic plexus. *The posterior branches of the fifth and sixth sacral pairs* are distributed to, and around, the anus. *The anterior branches* communicate with the fourth, and with each other, add little to the sciatic plexus, and are distributed to the coccygeus, the levator, and the sphincter ani muscles.

54. *The sciatic or sacral plexus*, on each side, arises from the anterior branches of the fifth lumbar pair, and from those of the first four pair of sacral nerves, and is formed into a sort of cord which passes over the pyramidalis, behind the hypogastric vessels, the rectum, bladder and uterus. It furnishes anterior and posterior branches, the former especially, proceeding from the third and fourth sacral nerves, are termed the hemorrhoidal, vesical, vaginal and uterine nerves; the latter are named the inferior gluteal and the pudic nerves. *The hæmorrhoidal branches* are subdivided into ascending, which proceed towards the sigmoid flexure, and descending, which reach to the sphincter ani; and they are distributed to the muscular and mucous coats. *The vesical nerves*, which are irregularly interlaced, often receive filaments from the foregoing, and pass to the neck of the bladder, and are distributed to the muscular

and mucous coats. In the male, some filaments go to the prostate and vesiculæ seminales, and in the female to the urethra. *The uterine and vaginal branches* arise in part, separately, and also from the vesical nerves, are distributed to the vaginal mucous membrane, and to the neck and body of the uterus. These nerves are all in some degree conjoined and intermingled more or less intimately by filaments from the lumbar and sacral ganglia, so that they concur in forming the *hypogastric plexus.*

55. *The posterior branch of the sciatic plexus* is formed from the second and third sacral nerves, and receives one from the pudic. It is called *the little sciatic or femoro-popliteal nerve ;* it passes the sciatic notch over the pyramidalis, and divides on each side into the following branches :—First, *the inferior and middle gluteal nerve*, gives branches to the pyramidalis, to the surface and the tissue of the gluteus maximus. Second, *the sciatic branch, or pudendalis longus inferior*, is distributed to the inferior part of the gluteus maximus, to the integuments on the internal superior part of the thigh, to the perineum, and to the penis. Third, *the crural branch*, or posterior cutaneous nerve of the thigh, sends ramifications to the glutei, and to the integuments, through the aponeuroses in its course to the ham, where it subdivides, and distributes its filaments to the integuments of the leg, sometimes extending to the heel. *The superior pudic nerves* originate from the third and fourth sacral, (and

sometimes the fifth,) each contributing a branch to the femuro-popliteal nerve, join the internal pudic artery on each side, and divide into superior and inferior. *The inferior branch*, in the male, sends filaments to the levator and sphincter ani, and the neighbouring cellular tissue, passes forward along the perineum to the scrotum, and is lost in the dartos, giving filaments in passing to the transversales perinei, the bulbo and ischio-cavernous muscles, and to the integuments ; some filaments also penetrate the urethra, and are distributed to its mucous coat. *The superior pudic branch*, in the male, ascends to the pubis, runs on the superior surface to the glans, and is distributed to that body and to the prepuce. In this course filaments are given to the internal obturator, and bulbo-cavernous muscles, some to the integuments and tissue of the penis and the urethra. *The inferior pudic*, in the female, give branches to the perineum, labia, the constrictor vagina, and ischio-cavernous muscles, and are distributed over the pubis. *The superior branches* give branches to the obturator in ascending to the pubes, and are distributed to the clitoris.

56. *The great sciatic nerve*, the longest and largest of the body, arises from all the branches contributing to the sciatic plexus, and it thus terminates this plexus. It gives filaments to the pyramidalis, the gemini, internal obturator, and the quadratus femoris. The gluteus maximus receives filaments if the inferior gluteal nerves are small.

Branches are given to the biceps, the semi-tendinosus, semi-membranosus, and to the great adductor muscles, and many filaments from these branches are distributed to the skin. In the hollow of the ham it divides into external and internal popliteal nerves, the division being frequently observable much higher. The external popliteal branch, or the peroneal nerve, in the external and superior part of the leg, divides into the musculo-cutaneous and anterior tibial nerves, previously sending off two filaments. *The first* supplies filaments to the inferior part of the biceps, and is distributed to the anterior integuments of the knee joint. *The second* is larger; it gives filaments to the gemini, and descends under the crural aponeurosis, supplying branches to the integuments; and one considerable branch unites to the internal popliteal nerve, at the outer margin of the tendo-Achilles, to form the external saphena.

57. *The musculo-cutaneous or external peroneal nerves* descend, giving filaments to the peroneal muscles and extensors of the toes, pierce the aponeurosis near the ancle, distribute filaments to the tarsal integuments, and divide into two branches that diverge in their course over the tarsus to the toes. These are, first, *the internal superficial branches* on the dorsum pedis, which give filaments to the integuments that anastomose with others from the internal saphena. On the foot they bifurcate into two secondary diverging branches,

the internal to the adjacent cellular tissue and integuments, and the muscles of the great toe ; the second branch runs forward between the two first metatarsal bones, and gives filaments to the parts covering the second bone. *The external superficial branch* on the dorsum pedis, after having sent filaments to the integuments over the maleolus externus, runs forward between the integuments and extensor tendons of the toes, and divides into three secondary branches. *The internal branch* is distributed to the external side of the second, and the internal side of the third toes. *The middle branch* to the third and fourth toes, and *the external branch* to the two last toes. This last branch is sometimes replaced by one from the external saphena, but in either case these nerves communicate.

58. *The anterior tibial nerves* give filaments to the superior parts of the peroneal muscles, to the common extensors of the toes, and to the integuments about the knee, accompany the anterior tibial arteries, and on the dorsum of the foot divide into deep-seated external and internal branches. *The deep-seated internal branches* give filaments to the short extensors of the toes, to the first interosseous muscles, and the integuments; they divide into two filaments, distributed to the first and second toe, and anastomose with the cutaneous filaments of the internal superficial branch from the musculo-cutaneous nerve. The external deep-seated branches of the anterior tibial nerves, pass and give fila-

ments to the short extensors of the toes, and are distributed by numerous filaments to these and to the interosseal muscles.

59. Second, The internal popliteal or tibial nerves (the second great division of the sciatic) are larger than the external, and form the principal continuation of the sciatic ; they accompany the posterior tibial arteries down the leg; and, under the arch of the foot at the insertion of the adductor muscles of the great toes, they divide into the anterior and external plantar nerves. Nerves originate from the internal popliteal nerves, an inch above the external condyles of the femurs, accompany the saphenæ veins downward at the external margins of the tendo-Achilles, send filaments to the integuments, and then join branches from the external popliteal nerves. These common trunks are *the external saphenæ nerves.* They give numerous filaments under the tendo-Achilles, turn upwards from under the maleoli externi, send filaments to the abductor muscles of the little toes, and, on the external superior part of the feet, divide, each into two secondary branches. The internal branches follow the fourth metatarsal bones, and are distributed to the corresponding sides of the two last toes. The external branches pass along that side of the foot to be distributed to the little toes.

60. The internal popliteal nerves in the ham give filaments to the gastrocnemii, the solares, plantares, and popliteal muscles, and to the knee joints. Posterior branches dip under the popliteal

muscles on each side, give branches to the long flexors of the toes, pierce the inter-osseous ligaments, and send filaments to the anterior muscles of the leg, anastomosing with those of the anterior tibial nerves. *The internal popliteal nerves* give several long filaments that descend encircling the posterior tibial artery, that frequently anastomose, and are lost in the inferior part of the solares and in other deep-seated posterior muscles. Lower, some filaments are detached to the integuments, and near the maleolus internus a branch originates that joins one of the foregoing branches, and is distributed to the plantar aponeurosis and soles of the feet (S. 44.).

61. *The internal plantar nerves* give filaments to the adductor muscles of the great toe, and to the short, common, and accessory flexors in passing to the posterior extremity of the first metatarsal bone. They there divide, each into four branches. *The first branch*, on each side, gives filaments to the short flexor of the great toe, and is lost on its inside; *the second branch* contributes filaments to the flexor brevis and lumbricalis, and divides into two branches, one distributed to the outside of the great toe, the other to the inner side of the second toe, filaments being sent to anastomose with the internal deep-seated nerve of the dorsum of the foot, and with one another by arcades in the tops of the toes. *The third branch* gives filaments to the second lumbricalis muscle, and follows the course of the preceding nerve, one being distributed in a

similar manner to the second and third toes. The fourth branch pursues a similar course to the third and fourth toes.

62. *The external plantar nerves* pass between, and give filaments to, the short common flexors of the toes and the long accessory flexors. At the posterior extremity of the fifth metatarsal bones, after having given a filament to the adductor of the little toe, each divides into a superficial and deep-seated branch. *The superficial branch* goes to the outside of the foot, and divides into external and internal branches. *The external* gives a filament to the flexor of the little toe, and is distributed to its external surface. *The internal branch* sends a filament to the fourth lumbricalis muscle, anastomoses with the preceding, and is distributed to the adjoining surfaces of the fourth and fifth toes. The deep-seated branch gives a filament to the flexor of the little toe on each side, enters the inter-osseous and the oblique abductor of the great toe, and forms a kind of arch, the anterior of which gives off numerous filaments to the inter-osseous and transverse abductor muscles of the great toe.

### *Structure of the Liver.*

63. The hepatic artery is the second branch of the cœliac, and, in its course to the liver, it gives off the pyloric and the right gastro-epiploic arteries. It then ascends to the right, before the vena porta, to the right of the hepatic duct, and

divides into two branches; the right gives off the cystic artery, and the two branches are distributed to the right and left lobes of the liver, their ramifications accompanying those of the vena porta.

64. The *vena porta* arises from the capillaries of all the abdominal organ sexcept the liver and kidneys; the tributary veins forming, by frequent anastomoses, two trunks, called the splenic and superior mesenteric veins, which unite, and constitute the vena porta. Its calibre is smaller than the amount of these two veins. The vena porta is accompanied by innumerable nervous filaments and lymphatic vessels, has the hepatic artery and the biliary ducts anterior to it, is encircled by the capsule of Glisson, and it bifurcates nearly at right angles in the transverse sulcus of the liver. It is distributed right and left, accompanied by branches from the hepatic artery, and by nervous filaments, and each branch has an envelope from this capsule. When the liver is divided, the ramifications of this vessel appear collapsed, and not circular and open, as the hepatic veins.

65. The *hepatic veins* arise in the acini, or bile secreting glands, from the extremities of the hepatic artery, and those of the vena porta. These vessels continue enlarging as they proceed, by anastomosing with each other in their course from the anterior of the liver and its lateral extremities, to its posterior limit, where they converge, and form right, central, and left, hepatic trunks,

opening into the inferior cava. Four circumstances render these veins remarkable: First, they are lodged in cylindrical grooves. Second, the capsular sheath extended over them is firm. Third, they are closely united to the structure through which they pass, and consequently when they are cut transversely their mouths remain open, which does not happen with the portal veins. Fourth, they arise from both arteries and veins. These vessels perform an extremely important office in cases of hepatic abscess; which is explained by the relations and peculiar state of this system of vessels, i. e. as they present circular openings on being cut across, so also when they are eroded in the area of an abscess, the portions leading to the cava receive the pus into the circulation, the more minute and internal extremity remaining closed by obstruction.

66. *The lymphatic vessels* of the liver are extremely abundant, no part being more largely supplied; and they are of peculiar formation, either having no valves, or their valves are very lax. On the right lobe they are divided into superficial and deep-seated: the superior superficial vessels are divided into four fasciculi. The *first* passes forward, anastomosing freely and uniting in the suspensary ligament, enters the thorax between the diaphragm and xiphoid cartilage, and joins the thoracic duct near its opening. The *second* fasciculus originates in the circumference of the right lobe, traverses the dia-

phragm, re-enters the abdomen with the aorta, and terminates in lymphatic glands, placed between the aorta and inferior cava; others of this group pass to the costo-vertebral articulations, unite with the intercostal lymphatics, traverse several glands, and finally open into the thoracic duct. The *third* fasciculus arises from the centre of the right lobe, and the posterior part of the liver; some of its branches unite to the before mentioned, others enter the thorax between the œsophagus and aorta, and open into the thoracic duct. The *fourth* commences in the anterior of the right lobe and in the suspensary ligament, unites to some of the first, descends chiefly into the hepatic sulcus, and divides into the neighbouring pyloric glands.

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On the left lobe the lymphatics divide into three fasciculi. The first ascends in the suspensary ligament and unites with the first right fasciculus. The second originates in the surface, divides in two, of which one portion descends to the right, and is distributed to the glands at the small curvature of the stomach, and there meet those of the inferior surface: the superior portion proceeds under the diaphragm and unites to the lymphatics of the spleen. The third fasciculus comes from the posterior part of the left lobe, descends towards the cardia, and enters the glands at the small curvature of the stomach. The superficial lymphatic vessels of the inferior surface proceed to the glands which encircle the cava and the aorta;

others embrace the neck of the gall bladder, and pass into the glands behind the duodenum; and the residue either run into those already mentioned, or into the deep-seated vessels. The deep-seated lymphatics arise from all parts of the parenchyma, accompany the ramifications of the blood-vessels and biliary ducts, pass with them from the sulcus, assemble, proceed through the little omentum, and enter the glands of the small curvature of the stomach, or those which encircle the cœliac artery, and from thence transmit their contents to the thoracic duct.

67. The *acini, or bile-secreting glands,* are small globular bodies, varying from yellow to livid and red. When the liver is torn, they appear to form a large proportion of the hepatic tissue, there being just enough of the parenchyma interposed between them and the vascular and nervous agents to maintain all of them in proper juxta-position. By this conformation their several functions are simultaneously discharged without hindrance or interference one with another *under ordinary circumstances.* Every one of the acini receives a nervous twig, a branch from the hepatic artery, and one from the portal vein, these vessels being accompanied by absorbent and exhalant vessels, and sends off a venous branch, arising from both the artery and the portal vein, and a minute biliary duct. The venous branches thus originating, unite and form the hepatic veins.

The biliary ducts proceeding from the acini also unite, anastomose, and converge, until the right and left conduits form the hepatic duct.

68. *The exhalant vessels, or pores*, forming a part of the capillary system of the liver, preserve it in a moist and healthy state, and produce a certain fatty substance, (adipocire) deposited in the arcolæ of its cellular tissue, around the acini, the vessels, and nerves. That exhalation proceeds in the parenchyma of this viscus, is evinced by the formation, absorption, and deposition of this substance in its cellular arcolæ. The liver is diminished and increased in size with the emaciation and enlargement of the body, a circumstance depending upon nutrition, and the deposition of this matter, and evincing also the existence of exhalation and interstitial secretions.

69. The *cellular structure* of the liver is that fine areolar and membranous tissue which connects the several constituent structures of this organ, and preserves them in their relative positions. It is best observed in the progress of the decomposition of this viscus.

70. The hepatic artery and vena porta, with their nerves, accompany each other, and send off their divisions, diverging from the inferior part and centre of the liver to its circumference and surface, ramifying rapidly and subdividing extremely in their course, to supply from each, a minute vessel to every one of the acini. A biliary pore or capillary, and likewise a capillary vein,

originates in every one of the acini, of which the former accompanies the arterial and portal ramifications. The biliary capillaries progressively anastomose with each other to form tubes gradually larger, until they ultimately unite in the ductus hepaticus. In like manner the veins arising from the acini, by their progressive union, rapidly form larger trunks, converging from the anterior parts and surfaces of the liver towards the spine, to reach the inferior vena cava, into which they return the blood, carried to the acini by ramifications of the portal vessel and the hepatic artery.

71. To form a familiar idea of the intimate structure of the liver, imagine the cavity of its envelopes loosely filled with the acini; conceive the four vessels mentioned (S. 70.), transferred into the gland, three entering by the porta, and each sending one ultimate capillary with a nervous filament to each of the acini; the fourth, in like manner sending one ultimate capillary to every one of the acini, and one absorbent with its nerve, a proper nerve being extended to each. Conceive a semifluid substance (adipocire,) poured in to fill the interstitial space, and to admit the free play of the vessels; imagine this substance preserved in situ by a cellular arrangement that serves to keep itself and all the other parts in their relative positions; and suppose this cellular substance extensively pierced with exhalant and nutritious vessels, to restore parts removed by the absorbents. It may further be supposed that

each acinus has a nervous filament proper to itself, besides others accompanying the arterial, the portal, the biliary and absorbent capillaries. Thus every one of the acini receives more than one nervous filament, one absorbent, an artery, and a vein, and gives off a vein and a biliary vessel or duct; hence every acinus in the liver has ten constituent relations.

72. *Functions of the liver.* The liver in a healthy state performs two* important offices. First, its acini secrete the bile from the blood. Second, the fluids received from the gastro-intestinal mucous surface by the abdominal circle of veins, are poured through this organ, and thoroughly commingled with the blood, by passing with it through the capillary system of this gland. This process prepares and adapts the new admixture for the change it undergoes in the lungs from its loss of carbon and reception of oxygen gas. Some animals, as the elephant, horse, and deer, have no gall-bladder. When the stomach and duodenum are empty, the bile is transmitted to the gall-bladder, because the empty state of the duodenum folds and closes the ductus communis choledochus. When the stomach is filled the biliary ducts are extended, and the bile flows both from the liver and the gall-bladder into the duodenum. The bile, in early life, is more fluid, and

* Vide Bichat. Anatomie Générale. Tome II. page 255. Paris. 1821.

flows with greater facility than in more advanced years, when it becomes viscid and flows slowly.

73. The *bilious temperament*, or the condition so named, is that in which the biliary function is performed with paramount energy; it is the healthy state opposed to inadequate secretion of bile. The capillary circulation is perfectly and powerfully performed under the energetic influence of the organic nervous system. The pulse is strong, firm, and quick; the skin has a tinge of colour from strong capillary circulation; the hair is generally dark, and the muscles are strongly developed; the mind is energetic, spirited, impetuous, and bold; and both body and mind are often subject to ardent and overpowering affections.

74. *Bile* is useful; firstly, in promoting digestion and the separation of chyle from the alimentary matter. Secondly, by its saponaceous qualities, in facilitating the transit of the feculent matters over the mucous surface. Thirdly, in exciting and deterging that surface by its bitter and stimulating properties, and thereby preserving it in health. Fourthly, in preventing, by its antiseptic properties, the excrementitious matters from running into decomposition, pending their progress through the intestinal tube.

75. The *characters of bile* vary according to the age, the nature, and periods of disease; thus, it is observed like tar, like an inspissated green, or black syrup, and often full of dark grains, gluti-

nous, or of an oily appearance. Sometimes it is found quite watery, and in that case it usually has some shade of the orange colour; less frequently it is aqueous and green. Bile was formerly used in medicine, four grains of the inspissated extract being given as a tonic and deobstruent. Its use is said to have been discontinued from frequent failures, the result of general and promiscuous use.

76. The *biliary constituents* are at times accumulated in the blood, owing to one or other of the following morbid states :—First, When the biliary acini are torpid, and permit the blood with the biliary materials to flow through them, those materials remain circulating and accumulating in the blood in an unassociated or free state. Second, The bile at times, instead of passing through the biliary pores, takes its course with the blood through the hepatic veins, and produces jaundice. Both these events are succeeded by certain grave forms of disease, and show that the separation of the biliary constituents from the blood, and their removal from the system, is absolutely necessary for the preservation of healthy action.

# CHAPTER II.

## SECTION I.

### CAUSES OF HEPATIC DISORDER.

77. The species, and the process of disease in the liver, are especially controlled by two series of circumstances; one tending to the production of congestion or inflammation, the other influencing those states to terminate in suppuration.

78. First Series. *First*, The great size of the circulatory trunks ramified in the liver, the vena porta being, in circumference, equal to the fore-finger, and the hepatic vein to the thumb, favours the supervention of congestion and inflammation. The hepatic veins are passive tubes, imperfectly filled, and, as well as the portal vessels, are deprived of valves. The great* volume of blood, the greater calibre of the vessels, and the want of valves throughout the portal system, and the veins of this organ, dispose its circulation to very serious disturbances from accidents, particularly

* Sea sickness most probably arises from the agitation by contra-impulsion, communicated by a succession of movements, to the large volume of blood in the cerebral sinuses and portal tubes.

falls, blows, and injuries on the head. *Second*, the proximity of the hepatic capillaries to the great vascular trunks; *third*, the great aggregate amount of the hepatic capillaries; *fourth*, the triple capillary connection interposed between the great sanguineous vessels, of which the centre is placed in the acini; and, *fifth*, sundry causes detailed at page 60 have a similar influence.

The Second Series of circumstances disposes the inflammatory and congestive affections of this viscus to terminate in suppuration. They are, *first*, the prodigious congeries of capillaries contained in its tissue, every part being additionally disposed to suppuration in the ratio of its being more abundantly supplied with capillaries. *Second*, the great warmth and moisture applied to its surfaces, which have the effect of hastening suppuration. *Third*, the incessant movements to which it is subjected by the respiratory actions and motions of the body. *Fourth*, the stimulant effects of food and drink. *Fifth*, the increased pressure of the liver from fulness of the stomach, or from indigestion producing extrication of gas, and pressure consequent upon gastro-intestinal distension.

79. The intimate structure of the liver (§ 37. 38.) comprises a quadruple order of minute capillary vessels, centered in the acini. A great volume of blood is continuously poured through these acini, and the quantity is augmented, in a certain ratio corresponding with the amount of fluids received into the stomach. The very complex and minute

organization of these acini (§ 71.), and the increased volume of fluid frequently poured into them, are causes often competent to render some of them impervious. This state, in its early stage, is only engorgement, and accordingly our every day practice presents examples of it. Simple engorgement is evinced by a sense of local fulness, oppression, and some form of biliary derangement, accompanied with minor and fugitive symptoms of congestion or inflammation. An impervious state of the acini being continued in any part, it establishes a congested condition of the vessels, which become progressively more dilated, and the adjoining acini and vessels suffer pressure from the tumid state thereby produced. Additional acini soon become impervious from this cause. The impervious state after a little time either terminates in re-established circulation, or it becomes confirmed. The permanent obstruction of an acinus forms a solution of continuity, as respects the current of its circulation. If this takes place in a very few acini, in such manner that the blood which should have passed through the obstructed bodies, is carried off by adjoining veins, the original structure of the acinus may be permanently lost by obliteration of its canals. In this case the engorged and impervious state, terminates in a structural change of the acinus, viz. adhesion.

80. When several of the acini are impervious, the blood, instead of traversing them or

circulating by anastomosing vessels, becomes impeded, and remains, dilating and irritating the obstructed portal tubes. When obstruction effects a solution of continuity, Adhesion and Suppuration are the natural processes provided for the reparation of the injury thereby sustained. The *former*, ADHESION, takes place (§ 79.) in the less important cases, when acini become obliterated; the *latter*, SUPPURATION, occurs in those more extensive obstructions alluded to. The minute and complex structure of the acini (§ 67 to 79.), the great volume of fluid circulating through them (§ 79.), and the several causes constantly tending to promote inflammation and suppuration (§ 78 to 113.), being fully considered, we cannot feel surprised that hepatic abscess, without symptoms of inflammation, is a frequent occurrence, amongst Europeans who live freely, and use an excess of stimulating fluids in a tropical climate.

### *Causes of Hepatic Disease.*

81. *External injuries or violence, falls, accidents, —especially blows over the hepatic region, on the head or the back.* The Liver is so much more subject to receive injury from external violence as it is of greater specific gravity than the surrounding viscera, and more firm and resisting. Experience has demonstrated the great extent to which its circulation becomes deranged by falls or accidental violence. When hepatitis succeeds to a fall or injury, that did not, in the first instance,

physically injure this organ, it is accounted for by the series of changes produced on the circulation, and by the nature of the tissue wherein it takes place.

82. After a fall or a blow, the heart's movements are more or less irregular, or imperfect, and consequently the large veins and tributary vessels, especially those of the liver, become congested. Nevertheless this latter organ continues to receive nearly an undiminished supply of blood for some time, owing to the extensive resources of the hepatic artery and vena porta (§ 63. 64.). The heart being unable to receive and dispose of the current carried to it by the inferior cava, the liver is exposed to sanguineous congestion and inflammation, followed by suppuration ; and those are precisely the consequences that experience proves to follow from such injuries. The lungs are less subject to suffer from similar injury, because the volume of fluid poured into them is less varied and their circulation is more energetic.

83. The popular fear of after consequences, the justice of which is shown by experience, and sanctioned by professional observation, has enacted a kind of rule, "to bleed after serious falls or accidents ;" and that rule is equally warranted by experience and prudence, the immediate shock of the injury having passed off. The great risk of hepatic injury is, in great measure, explained by the characters and the extent of the vascular sys-

tem of the liver, and the circumstance of that system constantly receiving a large portion of the fluids taken into the digestive canal—a circumstance both disposing to, and exciting congestion, of this viscus (§ 72.). The possibility of inflammation resulting from the same cause, and being extended from the liver to some other part (owing to peculiar circumstances, as previous ill-health, idiosyncrasy, &c.) gives additional importance to this rule. It is singular, but true, that injuries of the head often lead to hepatic disease (See art. *Hepatite*, Dict. des Sciences Med.). Blows, or falls on the back, produce hepatic congestion or inflammation, as already explained.

84. *The intemperate use of vinous, fermented, or alcoholic fluids.* Drink should only be used to remove thirst, or to promote digestion; but it is frequently abused from habit, especially in tropical climates. Fluid of a temperature a little below or above that of the body, is most efficacious in allaying thirst. Water taken warm, or cold, promotes the urinary discharge, perspiration, and pulmonary exhalation; therefore it is of great benefit in febrile and other morbid states. The quantity of fluid taken with a meal should be in relative proportion to the nature of the food in respect of moisture or dryness. Health should be consulted, not habit or gratification, in the selection of the quality and quantity of fluids employed for common drink. Bilious persons, of a dry

fibre, require more cold water with their meals than others. Barley water, linseed tea, rice-water, &c. are alimentary drinks.

85. Alcoholic and vinous beverages, or beer taken at meals, excite the vascular system, and are agreeable to the feelings and senses for the moment. Their temperate use is advantageous in some cases of debility, exhaustion, or in order to sustain the system occasionally under the exposure to extraordinary rigour of climate. Their intemperate or habitual use, stimulates the system to an excess that ultimately proves destructive, and therefore cannot be advisable in any case. These fluids, besides their deleterious stimulant and irritant properties, coagulate the mucous and other juices of the gastro-intestinal surface, constringe the openings of its exhalant and absorbent vessels, and of its glands and follicles, indurate the mucous surface, and deteriorate its functions.

86. It may be asked how these beverages injure the liver? The fluid exhaled from the lungs and skin, and that secreted by the kidneys, and by the digestive mucous surface, are replaced with fluid taken up by the capillaries of the gastro-intestinal surface, poured* into the mesenteric veins, and carried directly by the vena porta into the liver. The blood, with this addition, forms a crude admixture in the abdominal veins, passes into the

* Some fluid is taken up by the absorbents, and passes into the general circulation, through the thoracic duct.

venæ porta, and immediately circulates throughout the hepatic tissue. There the absorbed fluid is subjected to the operation of the biliary acini in its transit through them, where it becomes blended more intimately with the blood before it enters the hepatic veins, in its course to the right side of the heart.

87. Now, is it reasonable to suppose, that an unduly increasing volume of fluid, could thus unceasingly be poured into the minute structure of the liver, without injury to its function, and to those most delicate and minute tubes through which it flows? I believe not. But the habit we treat of is far less simple, more deleterious and important; it is the direct and frequently preternatural increase of the circulatory volume, not by aqueous but by alcoholic, vinous, or fermented fluids. It is unnecessary to have recourse to hypothesis; experience has settled the point beyond all doubt; this habit destroys health in a ratio with its extent. Exceptions strengthen general rules, and to this rule there certainly are some rare and remarkable exceptions, in the case of persons who, from peculiarity of individual constitution, practise intemperance for a long time with apparent impunity.

88. The circulating volume of blood being unduly increased by continuous supplies forced into the vascular system by the intemperate use of stimuli, operates injuriously: *First*, by its stimulant influence exerted directly on the brain and nervous

system, thereby exciting increased vascular action and febrile irritation. *Secondly*, by its excess of volume, red blood being thereby injected into the capillary system, and visceral engorgement occasioned. *Thirdly*, by constringing the capillary and other openings on the mucous surface, and indurating its tissue. *Fourthly*, by injuring the tone of the nerves distributed to the gastric mucous surface. Individuals sometimes begin the morning by a wine glass of undiluted brandy, but this practice is never continued long in India, because a few months suffice to produce hepatic abscess or fatal engorgement.

89. The health of our European troops in India is very rapidly lost by the pernicious practice of giving them two drams of arrack, (ardent spirit,) daily from the public stores. This leads even the steadiest men into habits of excess. However true it may be that ardent spirit is used by the soldiery in cold climates, without much injury to health, and that it attracts the soldier to the service, and attaches him to it, it must also be admitted that it destroys health, moral character, and respectability, shortens life, and debases the European character in the estimation of the natives. The habitual use of wine is not necessary to the preservation of health in India. A moderate quantity is not always injurious; and it is less so if taken at dinner, after the sun goes down. In wet, damp, or cold weather, stimuli are occasionally useful, and produce not then the

irritating effects that follow their use in the hot dry weather of India.

90. *Food of a rich nutritious quality, rich sauces, condiments, stews, soups, &c.* Alimentary matter, whilst subjected to mastication, is moistened and softened by the salivary juices and mucous secretions poured forth into the cavity of the mouth; and thus prepared, it is transferred into the stomach, along the pharynx and œsophagus. The surplus drink, or food, is mostly * taken up by the capillaries in the stomach, and carried into the gastro-intestinal extremity of the portal veins. The alimentary matters are penetrated by the juices exhaled into the stomach, and changed, from circumference to centre, into a homogeneous, fluid, pultaceous, viscid mass, called chyme. The chyme passes in some hours into the duodenum. This intestine receives likewise the biliary and pancreatic juices; and there the chyme is blended with them, and its characters are changed. From chyme it becomes a mass composed partly of chyle for nutrition, and partly of excrementitial matter, to be ultimately expelled from the bowels. The chyliferous, or lacteal vessels, commence, and are most numerous in the duodenum.

91. Any substance, not converted into chyme,

* A part passes into the portal veins from the duodenum, jejunum and ilium, and some passes through the absorbents to the thoracic duct; but it is principally absorbed from the stomach.

that passes from the stomach into the intestinal tube, continues undigested in its transit through the intestines with other excrementitial substances. This unassimilated matter being subject to the laws that govern its organization, the heat and moisture promote and hasten the process of its decay, and hence increased extrication of gas and distension of portions of the digestive tube sometimes are occasioned. The small intestines give transit to the fæcal substance, which has lost the chyle from absorption by the numerous lacteals, as the materials pass downwards. The absorbents are more abundant in the superior than in the inferior part of the tube, and the function of absorption diminishes progressively as the mass descends, and loses its chyle, or white and nutritious portion.

92. The natural colour of the bile blended with the fæcal matter, begins to predominate at some indeterminate part, which varies constantly; the matter then darkens and becomes fœtid. The chyle is transmitted by the absorbent vessels to the thoracic duct, and is usually poured into the left sub-clavian vein. The cæcum, colon, and rectum, have no lacteals; but simply absorbents, exhalant vessels, and mucous follicles. The fæcal colour and fœtor are always observed at and from the cæcum downward. The movements of the large intestines being exercised on materials more solid, longitudinal fibres are added to the transverse muscular coat observed in the superior part of the tube. This great intestine is at once the fæcal

reservoir and conduit. The fluids not taken up in the stomach nearly disappear in the duodenum and jejunum; very little descends below the superior part of the ilium, and perhaps,—excepting from the use of some excitant, or from ill health—none of the superfluous fluid reaches the large intestines.

93. When we reflect on the nature and volume of the tissues, of the organs, and of the fluids which compose the body, it must be clear to our apprehension that the precise quantity of recrementitial matter, adapted to meet the current waste, or the amount rejected and thrown off as excrementitial from the tissues and fluids, is precisely the quantity calculated to preserve the body in good health. If there is a deficiency of nutritive or recrementitial matter, the pre-existing stores contained in the cellular tissues are laid under contribution by the absorbents to the requisite extent. If, on the contrary, the nutritive matter be in excess, and the powers of the stomach are vigorous, then the whole becomes assimilated, and deposited in the cellular tissue, distributed throughout the various parts. The volume of recrementitial matter exceeds that of excrementitial just by the amount that the body has gained, or *vice versâ*. The salubrious course prevails when the nutriment exactly balances the body's waste without gain or loss.

94. Rich and over nutritious diet is objectionable. *First*, because an excess of fat impedes or deteriorates all the functions of animal, and organic

life, by lowering the circulation. *Second*, fat often operates physically, as in some diseases of the heart. *Third*, if the food is of a stimulating quality there is risk of hepatitis. *Fourth*, the habit of indulging in the use of rich food usually brings with it a corresponding evil,—the free use of diffusible stimuli. *Fifth*, the gastro-intestinal mucous membrane becomes deranged, both in function and texture, by those courses which produce indigestion ; a disorder which necessarily results from excess of eating, and from intemperance. *Sixth*, when food is dressed in a manner that renders it peculiarly agreeable to the palate, it is more likely to be taken to excess.

95. *The influence of long-protracted heat.* The ingenious philosophical experiments of Dr. Edwards *, on the agency of long continued heat and cold on living bodies, enabled him to pronounce, that less of oxygen was absorbed by the lungs in summer than in winter. Atmospheric air expands by acquiring, and contracts on losing caloric,

* Nous avions constaté que la faculté de produire de la chaleur chez les animaux à sang chaud dont la constitution est appropriée au climat, était plus grande en hiver qu'en été, et, d'après la relation observée dans d'autres cas entre cette faculté et la consommation de l'air, nous avons pu présumer que, toutes choses égales d'ailleurs, la consommation devait être accrue dans la même saison, avec la faculté de développer la chaleur. Cette vue a été justifiée par le résultat des expériences qu'elle avait suggérées. *Edwards, sur l'Influence des Agens Physiques sur la vie.* Part 3, chap. vi. p. 206.

hence the same volume at a higher temperature necessarily contains less of the gas that is necessary to restore our energies, and preserve life. When the supply of oxygen is diminished, the cerebral and nervous energies become enfeebled, and the entire vascular and muscular systems lose some part of their accustomed vigour.

96. Dr. Bostock (vol. ii. p. 370,) states: "When the venous blood becomes loaded with inflammable matter which cannot be discharged from the lungs, principally in consequence of the high temperature to which the animal is exposed, and when, from certain causes, one of which appears to be the increase of cutaneous perspiration, this excess of inflammable matter is not employed in the deposition of fat; the liver would appear to be the organ by which it is removed. In ordinary cases, the quantity discharged is small, probably no more than what is sufficient to preserve the liver in its healthy state, and to perform the secondary objects to which the function is subservient; but when, from a conjunction of circumstances, there is an excess of inflammable matter, its accumulation is prevented by an increased discharge of bile."

97. We learn, from the comparison of these data: *First*, that the lungs do not part with the full quantity of carbonic acid, nor receive their proper supply of oxygen when the temperature is much increased. *Second*, that the liver appears to be the organ which remedies this defect. This

circumstance renders healthy hepatic action far more necessary in a high than in a low temperature, and perhaps, at the same time, often occasions it to be quite the reverse.

98. Experience shows the changes ordinarily produced on European constitutions by a long residence in India. The European, after several years' residence, exchanges his clear complexion for a parchment, yellow, a leaden, or a dark pale yellowish colour. His vascular and muscular tissues become flaccid and relaxed, and his animal and mental energies more or less diminished. His general health is impaired, and he continues, particularly as his residence becomes protracted, in a state of valetudinarianism. Medicine is at last constantly necessary to stimulate the functions of the liver, and of the gastro-intestinal tube. This is a very summary, but an exact sketch of those changes which the greatest number suffer from an intertropical residence. Some men retain health under singular disadvantages in India, as in all other parts; but they are here, as elsewhere, comparatively very few. Those least exposed to the inconveniencies and evils of the climate, as might be expected, suffer the least from a residence in it.

99. It would seem in part, from the history of medicine, that increased temperature alone does not constantly produce hepatic diseases; because they were formerly said to be little known in the West Indies, on the coast of Guinea, &c. On the other hand, late writers affirm that hepatic

disease is not an extraordinary occurrence at those places. On the Coromandel coast, and on the Island of Penang, hepatitis, dysentery, and remittent fever, are the reigning important maladies, in various forms, amongst the European troops. Hepatic disease is very frequently an exciting cause of dysentery, of fever, of pains, &c.; or it simulates rheumatism.

100. But what are the diseases of the aboriginal Indians? they are quite different! The natives occasionally have fevers, depending on derangement of the gastro-intestinal tube, or originating from indiscreet exposure. In their own opinions their disorders proceed from bad water, or insalubrious air. Now whence originates this striking difference in the diseases of the European and the native? The European soldier's daily food consists of three plentiful meals, embracing animal food, curries, &c. and six ounces of arrack, (an ardent spirit)—three in the forenoon and three in the afternoon. The natives, on the other hand, adopt the following diet.

101. Gentoos * :—

*Breakfast.*—Boiled rice and cold water, with or without spice and pickles.

*Dinner.*—Mutton or fish, curry and boiled rice, with vegetables.

*Supper.*—The same as for dinner.

* The Brahmins, and those of high Hindoo caste, use no animal food or fish, and only eat twice a day.

Moosulmen:—

*Breakfast*, Ten A.M.—Wheaten cakes made up with ghee, (butter, boiled or fried); or meal prepared from a kind of pea, boiled with rice.

*Dinner*, Four A.M.—Palow, (or, rice with a little melted butter thrown over it) with mutton, curry, and pickles.

Parias:—

*Breakfast.*—Boiled rice and cold water, with pickles, and, if procurable, pancakes, bread, &c.

*Dinner.*—Mutton or fish, curry, and boiled rice, with vegetables, &c.

*Supper.*—Pepper, water, and boiled rice, or the same as for dinner.

102. Water is the only drink of the natives of India; but some, from European intercourse, have fallen into the habit of drinking spiritous liquors. Curries are prepared either with animal food, minced, or with fish, or with vegetables, by stewing the material with a little butter, and towards the end of the process adding the curry powder, of which the composition is now generally known in Europe. The curry serves the natives as a sufficient condiment, with the addition of a little salt; and, the craving appetite for brandy, gin, wine and water, or for beer, is happily unknown to them; so likewise are the numerous diseases to which those who use those liquors to excess are liable.

103. A subject so important as this is, may seem to be treated with too much brevity; but this notice will suffice to strike the attention of observant individuals who reason on facts. Judging from the dissections I have made, I am of opinion that hepatic complaints are rare amongst the natives of good habits, and my experience in the treatment of their diseases further confirms that fact. The natives employed as servants in European barracks, and some domestics who acquire European vices, are equally, or more subject to hepatitis, and less able to sustain the depletion requisite for its cure.

104. *Mental emotions, especially* anger, fear, anxiety, sorrow, &c.* A person in a fit of violent passion, turns pale; the heart is suddenly contracted, and cannot receive the accustomed volume of blood, nor transmit it to the pulmonary and corporeal extreme vessels. Meantime, the abdominal and hepatic circle of vessels conveys a continuous current of blood into the liver.

* Let us speak of the first: "Anger" may derange all the secretions and excretions,—it suppresses the menses, and the flow of milk, or deteriorates this latter fluid. Diarrhœa, a flow of urine, vomiting, hæmorrhage, fever, epilepsy, catalepsy, tetanus, apoplexy, mental derangement, hysteria, sudden death, &c. have been known to supervene on this baneful passion. It exercises an extensive influence over the ganglionic system of nerves, and deranges the circulation in all the internal viscera. Sorrow, regret, chagrin, anxiety, and all the depressing passions relax the energies of the nervous system, and favour congestions of the thoracic and abdominal organs.

The abdominal venous system, being composed of long tortuous vessels, it contains a proportionably large volume of blood, and hence, when the heart acts feebly, these vessels at first supply a current little decreased. The right and left auricles, not dilating as usual, are unable to receive the blood returned to them by the pulmonary veins and the two cavæ ; and their ensuing feeble diastole draws a still smaller quantity of blood from the superior and inferior cavæ, and the pulmonary vessels ; whilst the vena porta pours a continuous current into the minute and delicate vessels of the liver. The balance of circulation having been disturbed for a little time, the heart soon expands more freely in its diastole, and the circulating functions become restored.

105. Those effects of mind over matter, (through the agency of the pneumogastric nerves, and their relations with the ganglionic system,) may, however, terminate differently. *Firstly*, the turgid veins, by a few energetic and hurried movements of the respiratory muscles and of the heart, may be relieved, which mostly happens. *Secondly*, in less fortunate cases, cerebral, thoracic, abdominal, or hepatic engorgements, or other sequelæ of deranged circulation, ensue, and affect the individual according to the characters of the part disordered, the extent of lesion, the constitution, predisposition, and previous state of health. Apoplexy, hepatic disease, epilepsy, swooning fits, delirium, the suppression of some ordinary dis-

charge, or perhaps a dangerous congestive fever, are amongst the occasional consequences. Disappointment, anxiety, chagrin, and discontent, exercise a very baneful influence on health in India. Those passions induce a series of morbid changes similar to the effects of anger and fear, but with this difference, that these latter emotions are sudden, violent, and of short duration, whilst the former are less violent, but if the mind be constantly subjected to their influence, they are ultimately more destructive.

106. *Want of exercise, especially when combined with free living.* Let us examine the habits of Europeans in India, and learn from nature and experience. The individual who labours in the open air, will eat and drink largely, and digest easily ; but the indolent has a bad appetite and worse digestion, requiring the former to be coaxed and pampered, and the latter to be stimulated by various artifices. The reason is obvious : the labourer by his exertions forces all the organs and the capillary system into action by alternate muscular contraction and relaxation, and the excretions and secretions are thereby greatly increased, or in other words, the waste of the body is augmented, because the nervous and muscular tissues have called the whole system into action. It follows, that the increased expenditure must be counterbalanced by an equivalent supply of nourishment, solid and fluid ; and hence a greater consumption of food and drink is required by the

hard-working labourer, than by the luxurious idler.

107. The principal circumstance under this head, tending to the production of hepatic disease, is the excessive repletion, without the advantage of exercise to prevent either a redundancy of fluid in the circulatory system, or a preternatural accumulation of adipocire in the liver, and of fatty matter in the mesentery, omentum, and parts surrounding others of the abdominal viscera. The considerations adduced, in discussing the second and third causes of hepatic disease, are equally applicable to the present case.

108. *Violent, long-continued, or repeated, courses of mercury.* We know from the ample testimony of respectable medical writers, and from experience, that frequent and protracted mercurial courses in India are often succeeded by hepatic abscess. This apparently results as a consequence of the effects of mercury on that gland, in calling its vascular and absorbent vessels into increased action; and, at a subsequent period, when it has become engorged with blood, the continued or free use of mercury stimulates its vessels still further; and, whilst they are both gorged and excited, thus produces suppuration. The absorbents, stimulated by mercurial agency, remove the adipocire deposited in the cellular structure of the liver, in order to sustain the vascular and other systems of the organ, apart from each other, and to prevent the actions of the

one from interfering with those of the others. In other words, the arteries, veins, biliary tubes, pores, acini and nerves, by the removal of adipocire, become preternaturally approximated. When these delicate capillary tubes and the acini are thus pressed and press on each other, engorgement soon produces obstructed circulation, passing into congestion or inflammation, and eventually terminating in abscess. The use of mercurials during the progress of these changes, induces and promotes the process of suppuration by stimulating the capillaries to increased action, when some part of those vessels are impervious from engorgement or pressure.

109. A prudent caution is extremely requisite throughout the period when mercurials or nitro-muriatic acid are employed; and the state of the arterial system, the hepatic organs, and the gastro-intestinal tube should be most carefully and minutely inquired into. Depletion, counter-irritants, and purgatives are requisite auxiliaries, and their employment will be indicated from time to time by symptoms of vascular excitement, or of biliary or gastro-intestinal derangement; indeed their use can seldom be safely omitted. The discontinuance of mercurials and the nitro-muriatic acids should be carefully and slowly effected; for I am well assured from experience, that the abrupt discontinuance of mercury involves risk. Long continued and violent courses of mercury are now very generally considered unsafe by the medical

practioners of India, and I concur in that opinion.

110. *Great and sudden changes of temperature.* In studying the effects of increased temperature on animal life (§ 95 to 100), we find that under a high range of heat, the blood becomes but partially oxygenated in the lungs, hence an excess of carbon and hydrogen remains. The liver's functional labours become increased and complex, by the aid it contributes in removing those superfluous inflammable materials from the blood; and it serves as an auxiliary organ to the lungs.

111. The nervous energies become deteriorated from increased temperature, and the capillary circulation diminished and less perfect, whilst the reverse of these phenomena result from moderate cold. The blood, in the latter case, is more highly oxygenated, the nervous system assumes energy, the capillary system vigour, languor ceases, the muscular system becomes braced and elastic, a natural desire for action replaces listlessness, and colour or ruddiness displaces the parchment-like appearance of countenance produced by prolonged heat; but a return to the hot climate again reproduces valetudinarianism.

112. Can it be supposed that the vascular system of the European is so perfectly and permanently endued with elastic properties, that it can sustain, for a prolonged period, the changes induced by a high temperature? The reverse is the fact, and it is proved to be so by general experi-

ence. Every one will concur in this opinion, who compares the impaired pulmonary function and capillary circulation with the unceasing labours required of the liver for the preservation of health. Finally, it is plain that the elasticity of fibre decreases as age advances, until in very advanced periods of life, the vessels become too rigid in some part or another to discharge their ordinary function, in the degree necessary to the preservation of life; for when death results from extreme age only, it occurs chiefly from that cause.

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## SECTION II.

### SYMPTOMS OF ACUTE HEPATIC DISEASES.

113. *Symptoms of hepatitis produced by nervous agency:*

1. Severe, deep-seated, dull pain in the posterior part, or in the centre of the head.
2. Pain and stiffness of the back of the neck and base of the head.
3. An arid state of the fauces and difficulty of correct enunciation; red tongue, loss of fur, total disappearance of the lingual papillæ.
4. Pain of the back of the neck, and of the posterior superior part of the shoulder, from the spine along the margin of the trapezius to the shoulder joint.

5. Strong and painful beating of the carotids.
6. Stiffness, soreness, sense of weight or oppression in the lower part of the neck; increased action, pain, soreness, or oppression of the heart.
7. Pain at the præcordia.
8. Embarrassment of breathing, and oppression about the epigastrium, lower part of the thorax, or hepatic region.
9. Pain in the region of the stomach, loss of appetite, nausea, and various dyspeptic symptoms; thirst, febrile excitement, especially after eating; vomiting, white-furred tongue, prostration of strength.
10. Pain in one side of the face, sometimes apparently connected with the alveolar processes, and sometimes with the ear.
11. Pain in the right side just at the gall-bladder, or in any part of a line parallel with it, but generally on the right side.
12. Pain, numbness, heaviness, or stiffness of either arm, or both.
13. Crick, or pain of the neck.
14. Stiffness and pain of the loins.
15. In the early stage, irritation, local pain, and sense of weight in the loins, with diminished excretion from the kidneys; the urine being dark like wine lees, or the colour of brandy.
16. Pain at the top of the shoulder, or extremity of the clavicle.

17. Pain, numbness, heaviness, or stiffness of the shoulder.
18. A shooting pain in the breast.
19. A constant dry cough.
20. Dyspnœa with sense of oppression and tightness with or without pain.
21. A dragging or a gnawing pain about the region of the liver.
22. A stitch, catch, or lancinating pain, on breathing, about the lower part of the chest.
23. Pain in the region of the liver, on turning in bed, moving suddenly or quickly, or on the body being shaken by making a slip or a false step ; frequently with tenderness on pressure.
24. Disturbed sleep.
25. Greatly increased action of the abdominal aorta, and frequent palpitation of the heart.
26. A sense of fulness in the chest, and inability to make a full inspiration.
27. A sense of tension, or heat, at the epigastrium.
28. Pain extending in the course of the colon from the cæcum to the sigmoid flexure.
29. Pain of the right kidney, more rarely of the left.
30. The patient lies with more ease on the right side ; but this varies according to the extent and part affected, and to the new relations or adhesions that part may have formed.

31. Pain of the back, simulating rheumatism, from its greater severity at some than at other times.
32. A sense of strangulation at the larynx.
33. Pain in the eye-ball.
34. Pain in the forehead over the eyes.
35. Pains about the pelvis and superior portion of one or both thighs.
35. Pain of the right or left knee.

114. *Symptoms produced by an irritated and congested state of the Lumbo-abdominal ganglia and plexuses, and of the cauda equina.*

37. Cramp of the right or left leg, or both.
38. Pain of the right or left heel.
39. Pain on the dorsum of right or left foot.
40. Cramps of the soles of the feet, and toes.
41. Numbness of the legs and feet.
42. A sense of formication on the legs and feet.
43. A burning sensation of the legs and feet, observing regular daily paroxysms that produce excruciating pain.
44. A degeneration of the tissues, whereby the muscular and cellular tissues of the legs and feet become rigid and hard.

115. *Symptoms indicated by the renal excretion.*

1st. The urine is scanty, red, dark, tinged with bile, like wine lees, impure, opaque, and largely blended with a substance like coffee or chocolate grounds.

2d. The urine being like stale or recently prepared decoction of cinchona and opaque, then after a few days, becoming largely blended with pus, quite opaque and milky for several days; and afterwards gradually becoming like milk-whey, and opaque. As the removal of pus from the liver decreases the urine generally becomes progressively pale.

116. *Symptoms resulting from deranged action of the abdominal circle of vessels.* Deranged hepatic action induces engorgement of sundry parts of the abdominal circle of vessels, and according to individual condition and circumstances produces: *first*, hepatic diarrhœa; *second*, dysentery; *third*, ulcers either of the large or small intestines, or both; *fourth*, inflammation of the mucous coat either of the small or large intestines; *fifth*, engorgement of the mucous coat and piles; *sixth*, peritoneal inflammation; or, *seventh*, mesenteric disease.

117. *Symptoms from the general circulation.* The pulse is hard and full, large or small, and sometimes oppressed; or it is dilated, soft and feeble.

118. *Symptoms as to the tongue.* 1st, The surface is red, furred white, with thirst; 2d, furless and red, sometimes smooth; 3d, marked with sulci and red; 4th, presenting a pale spot near the top; 5th, ulcerated and red; 6th, dark brown, dry and hard.

119. *Physical symptoms.* Fulness, tenseness, or hardness of the region of the liver, and sometimes

distinct swelling or dilatation of the inferior part of the thorax, and occasionally puffiness of the integuments over the liver.

120. *Symptoms of the gastro-intestinal tube.* 1st, In the early stage, costiveness and rarely looseness; 2d, in chronic hepatic disease, diarrhœa and dysentery occur.

121. *Symptoms indicated by the skin.* In the early or acute stage, stinging heat and dryness. In the chronic stage, or after suppuration, moist or wet skin from profuse sweats.

122. *Symptoms indicated by the palms of the hands and soles of the feet.* Always in the early stage, and sometimes in the chronic, burning arid heat, especially after meals, with fulness and hardness.

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## SECTION III.

### TERMINATIONS OF HEPATITIS.

123. *The Termination of Hepatitis* are, 1. Resolution. 2. Effusion. 3. Adhesion. 4. Suppuration. 5. Ulceration. 6. Granulation. 7. Cicatrization. 8. Mortification. 9. Metastasis. 10. Chronic disease, or a scirrhous state, with morbid increase or decrease of the volume of the liver. 11. Degeneration into other tissues.

124. *Resolution* takes place when a gorged or inflamed state of the liver terminates in the removal of that condition by the conjoint action of the venous, biliary, and absorbent vessels.

125. *Effusion* into the hepatic tissue is met with in Europe, as shown by the existence of large cysts and hydatids; I once observed that form of disease in this country. The adhesion of the peritoneal covering of the liver to the adjoining parts so frequently detected, proves that effusion of lymph has preceded that state. A white and thickened condition of the hepatic coverings, over those parts that have the appearance of scars from their depressed surface and irregular contractions, shows that an abscess had formerly existed underneath them in that situation. An altered state of the coverings, the presence of adhesions, irregular contractions and depressed cicatrices, indicate the previous existence of an abscess within, and of the effusion of lymph over that part.

126. *Adhesion* of the liver to the side, and to other parts is very frequent. I have known the first cured by the effect of a fall, owing to the position, relations, and the specific gravity of this viscus being so different from those of its adjoining viscera, particularly from such as are situated interiorly to it. It is clear that when the acini become permanently impervious, adhesion of them also takes place; and this termination is of frequent occurrence.

127. *Suppuration* is a very frequent termination

of hepatic inflammation. It takes place in many cases before the patient applies for aid, and hence it is so much the more necessary that its symptoms should be very perfectly and generally known; that all doubt as to the nature of this dangerous malady, concealed under such slight symptoms, should cease; and the enemy be detected and opposed from the earliest moment of invasion. A large proportion of the symptoms which distinguish hepatitis in many of its modifications, seem to have, except to those well experienced and acquainted with hepatic disease, no direct or apparent reference to inflammation of this viscus. The sympathy of nervous agency will, however, throw ample light on their characters, causes, and connexions.

128. The *symptoms* of hepatic abscess are, rigors, slight or severe, and sometimes shivering fits, succeeded by cold sweats, more or less profuse. Also cold sweats, not preceded by any remarkable changes; large soft pulse; cold clammy skin, cessation or decrease of hepatic pain where that symptom existed; clean red tongue without fur; nocturnal hectic fever; enlargement in the hepatic region; deformity of the thorax by increased lateral convexity; faintness, giddiness and weakness, especially in the erect posture, and still more so on rising or suddenly changing position; anorexia; red urine, either like wine lees, or dark like brandy, in both cases scanty, or resembling decoction of cascarillæ, infusion of simaroubæ, or

infusion of digitalis; or it is milky and quite opaque, containing a large quantity of pus, variously stained by bile; also obstinate sleeplessness, which is nearly the most distressing and remarkable symptom; intestinal ulcers, and occasional purging.

129. *Ulceration.* After the symptoms distinctly evince the existence of an abscess, those of inflammation are partially continued, being at times greatly aggravated, and at other periods partly or wholly ceasing; and then again reappearing. In this condition it seems that the abscess is becoming augmented from time to time, by the formation of additional pus; or new tubercles are forming, and here the process of ulceration exists.

130. *Granulation.* The process of healing takes place frequently in the liver; that is, large tubercles or abscesses disappear, the pus being absorbed in a manner that will be explained. The cavity in such cases ceases to exist, owing to the progressive approximation of the opposing surfaces to each other, and the granulation and gradual filling up of the remaining part of the cavity. Sections of the tissue that has undergone this process, present surfaces having a closer and more dense texture; which does not possess the granular bodies or acini, or possesses them in a lesser degree; and a white fibro-cartilaginous and irregular structure or membraneous body is found dipping into the hepatic substance, and appearing to reunite the surfaces of the cavity which had contained the pus.

131. *Cicatrization.* This is very frequently observed on the liver with outward characters, similar to those it presents on the surface of the body. That is, a white patch is observed, generally depressed at some part, and sometimes elevated with irregularly corrugated margins. From those cicatrices processes extend into the hepatic substance, and fibro-cartilaginous bodies are frequently seen throughout the substance of this gland *(see* Dissection). On cutting into a white cicatrix, it is found to be a condensed new structure, resembling semi-cartilaginous or fibro-cartilaginous tissue in firmness, and of unequal thickness. It is the product formed to effect and consolidate the reunion of parts, on removal of pus from a cavity. I have seen scars on the hepatic surface three inches in diameter; their margin being about a line in thickness, and varying in some other parts from this to half an inch, which is a large size. They are usually smaller, but sometimes the reverse.

132. *Mortification* of the hepatic tissue occurred under my own observation in one instance, and that of the envelopes in another. After opening an abscess, the patient retrograded, and the post-mortem examination showed that the liver had mortified; the gangrene commencing with the parietes, or surface of the abscess. Perhaps the abscess was opened too early, and before it had sufficiently approached the surface, and previous to the removal of that capillary engorgement, which creates swell-

ing and impedes the circulation. I have found the envelopes mortified where the progress of a large quantity of dark fluid and pus was arrested by them. The fluid in this case had detached the membranes from the structure of the liver, and extended itself between them and it. The membranes being thereby deprived of their vascular support, necessarily mortified.

133. *Metastasis*, or transition of inflammation from the liver to other parts, is of frequent occurrence. The gastro-intestinal tube, and especially its mucous lining, the kidneys, spleen, colon, peritoneum, the lungs, pleura, and the external surface of the body are all of them subject to inflammatory attacks, translated or extending from the liver.

134. *Scirrhus* of the liver usually takes place either with increase or decrease of its natural volume. The scirrhous enlarged liver has the adipocire of its parenchyma increased, and it varies, more or less, from a pale yellow to a dark or chocolate colour. The acini are distributed through its substance at irregular and increased distances, and are either pale yellow, or like purple or livid grains. The substance of the organ is either soft and readily torn, or it is preternaturally firm ; but it is less frequently both firm and enlarged. The scirrhous diminished liver is either pale, yellowish, livid, or flesh colour, but mostly pale. The volume of the organ is lessened by a reduction of the parenchyma, whereby the acini are approximated, and

the vessels diminished in their calibre. The acini also become a little lessened by the decreased volume of circulating fluids; and the entire gland, thus reduced, by diminution of its soft parenchyma and its volume of fluid, is more or less indurated. The increase or reduction of this gland is apparently often co-ordinate, and connected with a similar change in the whole cellular tissue; the enlarged liver being frequently found in bloated subjects, and the diminished in emaciated bodies; but this rule has exceptions.

135. *Degeneration* of the hepatic structure into other tissues is observed in persons who have been much addicted to wines and alcoholic fluids, and in those who have experienced attacks of hepatitis. I have found small semi-cartilaginous or fibro-cartilaginous bodies, of several lines in diameter, scattered throughout the parenchyma of the organ, and I consider them as indicating the points of cicatrization following small abscesses. The hepatic structure degenerates into cellular and fibrous tissues, in the linings of cysts; and cartilaginous and osseous tissues are formed in it under similar circumstances. The texture of the organ is sometimes partially changed into fatty, and but rarely into gelatinous, matter. Cancerous, steatomatous, and melanoid tissues are said to be sometimes developed in the liver, but I have not observed them.

136. I find a record in my journal, dated early in 1820, of my having assisted Mr. Annesley,

then garrison-surgeon of Madras, in the examination of a subject, deceased of Fever, in whom we discovered a large gall-stone (the size of a filbert), confined by a fibrous cyst in the substance of the liver near the centre. It will appear that I have observed structural changes of the liver into firm fleshy tissue, fibro-cartilaginous, and fatty substance. *See Dissections.*

# 137. SYNOPTICAL TABLE OF THE DISEASES OF THE LIVER.

**DISEASES OF THE LIVER.**

**DERANGED FUNCTIONS.**

- The hepatic secretion is diminished, impaired, or impeded at times in these different modes, all of which are marked by a deficiency of healthy bile in the gastro-intestinal tube.
  - 1. Languor or decreased secretion, called torpor of the liver.
  - 2. Partial suppression of the biliary secretion.
  - 3. Biliary concretions impeding the transit of bile.
  - 4. Retention of bile in the biliary vessels.
  - 5. Secretion of bile defective in quality.
  - 6. Accumulation of bile in the biliary apparatus.
- The hepatic secretion becomes superabundant; or it may be transmitted into the hepatic veins and become blended with the circulating blood.
  - Excessive secretion of bile.
  - Jaundice

The following forms of disease are produced by functional derangement of the Liver:—

- Hepatic dyspepsy. — Muco-intestinal capillary derangement and honey-comb ulcers in the ileum,—the suite or consequence of previous disease, rarely idiopathic.
- Ephemeral bilious fever. — Preternatural irritation, originating from cerebral or abdominal stimuli, as solar heat, excess of repletion, &c.
- Common bilious fever. — Sanguineous congestion with deranged function of the liver and gastro-intestinal irritation.
- Hepatic diarrhœa. — Muco-intestinal exhalants preternaturally stimulated by irritation.
- Acute hepatic dysentery. — Pustular ulceration of the mucous lining in the cœcum and large intestines.
- Chronic hepatic dysentery. — Passive or chronic inflammation of the mucous coat lining the large intestines.

- Blood may accumulate in the hepatic parenchyma.
  - Congestion of blood in the Liver. — Sense of tension, with hepatic derangement and fulness, producing febrile excitement.
- Diseases that produce serious derangement of the hepatic functions.
  - Congestive bilious fever*. — Congestion of the Portal vessels, especially of their extremities, in the mucous coat-lining the lower part of the ilium (usually ulcers) and tending to cerebral engorgement.
  - Congestive nervo-bilious fever†. — Congestion of the Portal vessels, especially their extremities, in the inferior part of the ileum, (and generally ulcers), hepatic derangement, inflammation of the interior surface of the arteries, and great tendency to cerebral engorgement and effusion.
  - Mercurial erethism. — Irritation of the gastro-intestinal capillary system, violently affecting the nerves, with tendency to cerebral engorgement and effusion.

**INFLAMMATION.**

- Acute.
  - Of the hepatic envelope.
  - Of the hepatic parenchyma. — Abscess.
- Chronic.
  - Of the hepatic parenchyma.
    - With increase of volume, and structural change.
    - With decrease of volume, and structural change.

Produce intestinal and Rheumatic diseases.

* Ordinary Jungle or Hill fever.

† Penang fever, the severe form of Hill and Jungle fever; Bulam, Siam, &c. Yellow fever.

## CHAPTER III.

### FUNCTIONAL DISORDERS OF THE LIVER.

138. TORPOR OF THE LIVER, *considered in its original and uncomplicated form. Causes.*—In the European habit in India, this affection usually arises from the following causes, often but not always, associated; any one being sufficient to produce it. First, errors of diet; second, want of exercise; third, intemperance or excesses; fourth, sudden changes of weather or temperature; fifth, the agency of the passions; sixth, long continued residence in a hot climate.

139. The usual *symptoms* are, lowness of spirits, hypochondriasis, fugitive pains affecting different parts; at times, indigestion, want of appetite, occasional flatulency, decreased renal secretion, costiveness, languor, heaviness, paleness, disinclination for business or amusement, and preternatural dulness.

140. *Progress.* This state occasions slow bowels, languid capillary circulation, dyspepsia, paleness, debility, and a lax state of the cellular tissue. If the languid or imperfect biliary secretion continues, the organic nerves act feebly, the digestive

and the capillary circulation become impaired, and the strength and spirits decline with the general health. In habitual scanty biliary secretions, the nervous powers are less energetic and more irritable; the mental faculties are acute, but mild; the capillary circulation is less perfect, and weak; the muscles more slender, and, in short, the nerves of organic life, throughout the whole system possess less energy. This state is familiarly presented to us in the cases of sedentary persons and of females. When long continued, the symptoms become so complex, that the most experienced may be misled by their variety, and by the patient's desire to impress us with some particular points that have made a peculiar and undue impression on his mind. This is dyspepsia in a complicated form.

141. This species of derangement terminates either in health, or in a more advanced and inveterate state of hepatic derangement, namely, partial suppression of the biliary secretion, eventually leading to other diseases; as fever, dysentery, hepatitis, or hepatic engorgement.

142. The *remedial measures* consist in the prudent use of ipecacuanha, mercurials, alteratives, aperients; and the regulation of regimen, of exercise, occupation, amusement, and repose.

143. Partial Suppression. The *causes of partially suppressed secretion of bile* are, the depressing affections of the mind, changes of season and of temperature, effluvia, especially that arising

from morbid animal bodies, or from animal and vegetable matter in a state of decomposition, particularly when conjoined with moisture; also changes and errors of diet, unwholesome food or drink, want of exercise, confinement, long fasting, excessive fatigue, intemperance or excesses, and exposure to the weather. In fine, all those agents that exercise a deleterious influence over the functions of the capillary system, may interfere with those of the acini biliarii, and either directly or indirectly impair or suppress their secretion.

144. *Symptoms.* In this affection the blood retains the biliary constituents, which accumulate in the circulation. Hence the symptoms indicate, firstly, Insufficiency of bile. Secondly, An impure state of the blood. In one case, the gastro-intestinal mucous membrane suffers; in the other, the nervous system, and, through its influence, the capillary system. A deficiency of bile in the duodenum occasions indigestion, flatulency, borborygmi, pallor, restlessness, sleeplessness, loss of appetite, a burning sensation in the palms of the hands and soles of the feet, with heat, and harsh dryness of skin, suppression of perspiration, decreased urinary secretion, head-ache and fugitive pains; costiveness, mostly in the young, strong and healthy, and the opposite condition frequently under reversed circumstances.

145. *Progress.* A continued deficiency of healthy bile, firstly, deprives the mucous crypts of a stimulus apparently necessary to their healthy state;

secondly, it produces indigestion; thirdly, it favours the supervention of inflammation and ulceration, especially of the large intestines, or acute dysentery; fourthly, it renders the passage of the fæces more difficult, and injurious to the surface of the intestines; fifthly, the absence of bile, with its antiseptic properties, permits the fæces to pass through the early stages of decomposition during their presence in the intestinal tube; sixthly, the fæcal and animal matters in a state of decomposition, coming in contact with ulcers of the mucous surface, communicate a foul taint or sloughing tendency to these ulcers; seventhly, a deficient secretion of bile occasions a febrile state of the system and determination of blood to parts in one of the great cavities.

146. If the bile become vitiated in the gastro-intestinal tube, its utility is impaired in a corresponding ratio. Experience proves that the absence of healthy bile is usually announced by indigestion, slow bowels and flatulency; and, if the vitiated state continues, these morbid effects become the causes of a new series of aggravated symptoms. Flatulency, by distending the intestinal tube, disposes its mucous follicles to disease, which the overstrained nerves and capillaries of the peritoneum may call into action; the want of healthy bile, (the natural detergent of the mucous crypts,) inducing either an undue accumulation of their contents, or an inactive or irritated condition of them.

147. When the unassimilated biliary constituents are retained in the circulation, a febrile condition is speedily excited. The following symptoms, but variously combined and modified, mark this state : indigestion ; functional derangement of the gastro-intestinal tube, of the kidneys, and of the skin ; impaired capillary circulation ; preternatural determination of blood to some organ lodged in one of the three great cavities of the body, accompanied with, and augmented by, febrile action.

148. If determination of the circulation takes place to the head, a dull, heavy, and severe pain, sometimes acute, is felt at the vertex, the back of the head, the forehead, the right or left side, and sometimes throughout the head. The fever of the incipient stage is very severe, when caused by a residence in bamboo, or other jungles, or by the exhalations of decaying vegetable matter. If the determination takes place to the gastro-intestinal mucous surface, the discharges from the bowels are morbidly augmented ; and, as local irritation increases, the exhalants and crypts pour out fluids daily more and more sanguineous *, until the appearance of pus, cheesy substances, membranous productions, or coagula of blood, announce the

* Dysentery. When a free flow of bile takes place the intestinal ulcers immediately assume the healing process ; and this ensues on the mouth becoming affected with mercurials. Sometimes in the early stage the same result follows the exhibition of a few ℈ij or ℈iij doses of ipecacuanha given in pills, without drink, on an empty stomach.

ulcerated stage of disease. If determination takes place to the lungs, the cough and febrile state are unusually severe, and the symptoms are complex and confused, because the complaint is an association of two distinct diseases, namely, biliary derangement conjoined with inflammation of the pulmonary mucous membrane; termed in Europe Influenza. When determination to two cavities occur, it is mostly owing to the supervention of a secondary affection, which blends with, and augments the severity of the earlier disease. The characters of the combined maladies, and the parts or organs affected, will form our best guides to the treatment.

149. *Terminations.* The advanced state of hepatic torpor,—impaired or suppressed secretion of bile, first, terminates in health, especially if the secretion be only impaired or scanty; second, it produces disease of the stomach; third, disease of the intestinal mucous membrane; fourth, hypochondriasis; fifth, a general state of ill health, often termed dyspeptic, whence a great variety of diseases arise, modified by age, constitution, temperament, habits, previous health, and by any circumstance that materially affects the frame; sixth, suppressed secretion of bile, terminated by an increased secretion; seventh, it produces fever; or, eighth, dysentery.

150. *Treatment.* The origin of the disease, the patient's age, constitution, temperament, circumstances, habits, and state of mind, are to be re-

viewed carefully, previously to determining upon the plan of cure. When the state of disorder is produced suddenly by a deleterious cause, as exhalations from marshes and jungles, it is immediately succeeded by derangement of the circulatory system with preternatural determination of blood to some organ in one of the large cavities. The organ or parts attacked by increased determination of blood, the extent of congestion, or the state of inflammation, the patient's strength, the state of the circulation, general and capillary, the condition of the gastro-intestinal tube, and the hepatic, renal, cutaneous, and pulmonary functions, must all be considered. The practice should be directed to remove congestion and inflammation, and to restore a healthy state of the functions.

151. SUPPRESSION OF BILE, BY CYSTIC BILIARY CONCRETIONS. The causes that give rise to biliary concretions are two-fold. First, those which occasion the formation of bile, containing a preternatural proportion of solid matters. Second, those which cause the bile to remain in the gall bladder. The first class embraces the too free use of animal food, or extremely good living ; and the second comprises sedentary habits and a liberal use of vinous and fermented drinks, and perhaps of spirits also. Spices, or other stimuli, act in a similar manner, by constringing the common duct for a time ; also whatever also changes or destroys the healthy properties of the bile, as it passes into the duodenum, will produce temporary effects

nearly similar to those of impaired biliary secretion. When once concretions are formed, they obstruct the bile, either by their situation at the entrance of the cystic duct, or by their being impacted in it, or in the common duct.

152. *Symptoms.* The presence of biliary concretions is attended with occasional severe pain and spasms of the gall-ducts, and parts in the vicinity. But when any substance constringes the opening of the duct, or destroys the properties of the bile, the symptoms are much less painful, and often promptly disappear after warm diluents, free alvine evacuations, and appropriate regimen; the means of relief evincing the origin of the disorder.

153. *The Progress* of this affection is acute and distressing, from the excessive pain attendant on the spasmodic attacks. The health becomes generally deranged, dyspepsia in its inveterate form established, and the system often loaded with fatty matter. There is great disinclination to exercise of any kind, and the mental faculties become dull.

154. This affection may *terminate* in health, owing to the removal or solution of the concretions. When the disease continues to advance progressively, an inflammatory affection of the liver, or of some other viscus in the abdomen supervenes, accompanied by fever, dangerous from the nature of its origin; namely, obstruction producing engorgement, followed by inflammation.

155. *Treatment.* The objects are: firstly, to remove the concretions, if possible; secondly, to

prevent or remove engorgement, inflammation, irritation, or spasm; thirdly, to produce the free secretion of a very aqueous bile, which may, from tenuity, pass the concretions, enter the duodenum, and eventually dissolve them; fourthly, to prevent effectually the detention of bile in the gall bladder, biliary pores, tubes, or ducts. For the first object, having premised a mercurial at night, ipecacuanha should be exhibited, in varied doses, in the morning; say sometimes one scruple, at others two, in pills, without any fluid whatever, and on an empty stomach, in order to excite strong nausea. For the second, bleeding, evacuants, warm bath, &c. are essentially requisite. For the third object, the discontinuance of animal food, wines, fermented liquor and spirits; the regular use of vegetable diet only, without milk or butter; ripe fresh fruit to be used freely in the morning; and a mercurial alterative at night, should be directed. The fourth object requires the gastro-intestinal tube to be kept freely open every day by mild but efficient means, and the most assiduous attention to well-regulated morning and evening exercise. Equestrian exercise is especially preferable in this form of disease.

156. RETENTION OF BILE IN THE BILIARY APPARATUS. This is a very familiar occurrence. The *Causes* are, errors in diet, excesses, exposure to unusual cold or heat, or to piercing winds, that close the cutaneous pores; want of exercise, and the depressing passions; abuse of spiritous, vinous,

or fermented liquor; and morbid effluvia, or deleterious exhalations.

157. *Symptoms.* The bile being secreted and retained, there is none of that derangement which ensues either from an accumulation of the biliary materials in the blood, or from the passage of bile into it. There are, first, an accumulation of bile in the gall tubes, and consequent sense of fulness, tightness, and soreness in the liver; second, pains of the head, back, shoulders, and loins. In effect, the disease consists in an engorgement of the biliary apparatus, and, as may be inferred, the symptoms very closely resemble those of sanguineous engorgement, as they regard the liver and its nervous relations, and those of suppressed secretion of bile, as they regard the gastro-intestinal tube.

158. *Progress.* If the retention is not remedied, derangement of the circulation ensues; a determination to some particular part occurs, and a febrile state, attended by some of the milder hepatic symptoms, sets in; but these symptoms soon become aggravated. This affection usually terminates by a flow of bile, but if not speedily relieved, it will excite hepatic inflammation, intestinal disease or fever, and it may produce the three conjointly, or any two of those complaints at the same time.

159. *Treatment.* The intention, in the early stage, is to stimulate the biliary secretion, to evacuate bile from the gall bladder, and ducts, and to

discharge it from the system. A mercurial at night, succeeded by a cathartic next morning, is the ordinary practice. Formerly an emetic was given at the commencement of treatment; and that practice, however superseded, was extremely successful, and well adapted to effect a removal of the disease, and restoration of health. These measures frequently require to be repeated, before a cure is effected.

160. SECRETION OF BILE DEFICIENT IN QUALITY. The characters of bile detected in dissections vary from a tarlike appearance in consistence and colour, intimately intermingled with small globular or angular bodies, to a very pale orange colour, and aqueous fluidity. It assumes every intermediate shade of difference between those extremes, it most usually being of a green colour, and of the consistence of a thin syrup. These variations, the different effects produced by the bile on the intestinal tube at various times, and the very dissimilar characters which it gives to the fæcal matter and to the urinary secretion, all lead to the conclusion, that the qualities of this fluid are not always the same; and that it is at times defective in quality as well as deficient in quantity.

161. *Causes.* Whatsoever deranges the hepatic secretion, or combines disproportionate quantities of the constituents in the bile, may occasion this state of disorder. Excesses in the use of diffusible stimuli, errors of diet, imprudent exposure, and want of exercise, are its principal sources.

162. *The Symptoms*, in this affection, will be twofold: Firstly, they will indicate the accumulation of some part of the biliary constituents in the blood. Secondly, the absence of healthy bile in the intestinal tube. The first will be known by a febrile movement, with tendency to engorgement of some particular part; the second will be announced by derangement of the gastro-intestinal functions, and the combined effects will seldom fail to produce, additionally, very severe head-ache.

163. *The progress* of this state produces general ill-health; firstly, from the accumulation of some material in the blood which deranges the nervous system, and which the acini, in a healthy state, remove; secondly, from the absence of healthy bile in the intestinal tube, the muco-intestinal functions becoming vitiated, and the membrane diseased. In other words, the preparation of deteriorated bile will give rise to a combination of the symptoms and consequences of a diminished secretion of bile, and of the partial suppression of this fluid.

164. *The Termination* of this state is in gastro-enteritis, in dysentery, in fever, or in health.

165. *Treatment.* Ipecacuanha, and mercurial purgatives, to stimulate the hepatic secretion, and neutral salines to remove the secretions from the intestinal tube, to prevent accumulation in it, and to preserve a healthy state of the mucous surface, are the chief remedies. The diet, the periods of exercise and repose, and the clothing, should be

duly regulated, and precisely and rigorously observed, according to circumstances and indications. The hot bath is also a very useful auxiliary, in removing the complaint, by determining powerfully to the surface, relieving the viscera, and re-establishing healthy capillary action.

166. ACCUMULATION OF BILE, *or congestion of bile, in the pores, tubes, ducts, and gall-bladder. Causes.* This state may be induced by various agents; the opening of the ductus communis may be closed by local irritation or thickening; it may become constricted by spasm; an excess of mucus may render the bile too viscid and thick, or biliary concretions may obstruct the passage through the ductus communis. Want of exercise and long continued sedentary employment, free living, excesses, intemperance, changes of temperature, exposure to solar influence, and exhalations from animal and vegetable matter in the process of decay, deranging the nervous and capillary functions, are the ordinary remote causes.

167. *Symptoms.* This condition is the necessary consequence of retention of bile; or it is that state continued after a certain time. Loss of appetite, prostration of strength, mental dulness, disinclination for business or amusement, nausea, a sense of fulness in the hepatic region, and tenderness to the touch, constant sleepiness without the natural refreshment from sleep, costiveness, and pain of the head, either in the eyes, forehead, or occiput, or in any other part, or throughout the head, are

generally complained of. A yellowness of the conjunctiva is also observed, and the capillary function becomes impaired as the disease advances.

168. *Progress.* If it continues, a febrile state, and partial engorgement of some great viscus, takes place, as noticed under the head of suppressed biliary secretion. When engorgement of the biliary passages has supervened to a certain extent, if the fluid does not find an exit through the ductus communis, either secretion must become partially suppressed, or, instead of passing into the biliary tubes from the pores, the bile must regurgitate into the acini, and thence into the capillary radicles of the hepatic vein, and the general circulation, and produce jaundice. The several forms of this morbid state are intimately connected with the origin of congestive, jungle, hill, bilious, Siam, Penang, Bulam, and yellow fever, which form the subject of a separate section.

169. *Terminations.* This disorder either passes off by an increased flow of bile, or gives rise to jaundice; or the original condition, however simple, becomes lost in some modification of the congestive fevers (Ch. iv. Sect. 2.), which supervene apparently as a consequence of suppressed biliary secretion.

170. *Treatment.* This derangement is most successfully treated by mercurials. The removal of the disorder that may have taken place in the circulatory and capillary systems falls under the

head of bleeding, evacuants, &c. supposing that congestive fever has not set in; as, in that case, the diagnosis would be different, and so necessarily would be the treatment.

171. EXCESSIVE SECRETION OF BILE. The acini biliarii sometimes secrete and pour forth bile in quantities more or less augmented; as the cutaneous exhalants, under the influence of certain excitants, are observed to pour forth sweat profusely. The biliary acini are in this case preternaturally excited, and there is an increased determination of blood to the interior organs, especially to the liver. (See the causes of impaired, scanty, or partially suppressed secretion of bile.) This state may be produced also by medicinal agents, especially mercurials and chlorine, by the too free use of fruit, and by continued vomiting, however induced.

172. The *Symptoms* are, bilious diarrhœa, and vomiting, profuse sweats, skin mostly cold, tongue moist or furred, pulse quick and undulating, large and soft; prostration of strength, loss of appetite, sense of sinking, faintness and thirst.

173. *Progress.* In ordinary seasons and circumstances this affection ceases spontaneously. Since 1818, it usually, in India, produces the collapse of cholera. Previous to the accession of collapse, opiates and diffusible stimuli arrest its progress. The bilious diarrhœa succeeding to dysentery differs altogether from the state considered here.

174. *Terminations.* Excessive secretion of bile may

terminate either in cholera, collapse, and death; or it may gradually subside, and health be restored.

175. *Treatment.* The danger arises not from the increase of secretion, but from the presence of that secretion in the intestinal tube; hence the first object is to destroy the acrid properties of the bile in the duodenum, or in the stomach, if it should enter that viscus. A dilute solution of sulphuric acid will effect this object. A dilute form of nitrous or nitro-muriatic acid will, perhaps, act more efficaciously, and a small quantity of tinctura opii added to the solution will allay irritation of the gastro-intestinal tube.

176. JAUNDICE. In this condition the biliary fluid is secreted, but instead of passing from the acini into the biliary pores and tubes, it is received into the originating capillaries of the hepatic vein, transferred by that vein from the acini to the cava, and is blended with the circulating fluid, thereby tinging the skin and other parts.

177. *Causes.* Whatsoever determines the course of the biliary secretion from the acini to the hepatic veins (instead of its passing through the biliary pores,) is a cause of this disease. The biliary pores, the acini, and the radicles of the veins, are concerned in the production of this state. The venous radicles and the acini both execute their offices; the function of the biliary pores must therefore be defective. This defect may proceed from a thickened state of the bile; from engorge-

ment or thickening, affecting or pressing on the pores; from an engorged condition of the biliary pores to an extent that does not admit of the reception of additional fluid; or from the influence of the organic nerves distributed to the biliary tubes and pores. I may observe, that the extreme tenuity and minuteness of the biliary pores, contrasted with the very peculiar state of the venous ramifications (§ 67), renders the pores liable to be influenced by a degree of pressure, which would not materially interfere with the hepatic veins.

178. *Symptoms.* The jaundice is at once the effect of this morbid state, and the diagnostic symptom. A series of others may be enumerated, arising from the absence or partial supply of bile in the gastro-intestinal tube, and the presence of that fluid in the blood and in the capillary system; the effects being allied to those resulting from suppressed biliary secretion, when the biliary constituents continue to form parts of the circulating blood, and have not been formed into bile.

179. *Progress.* In the early stages of jaundice there are often no very remarkable symptoms beyond those arising from the absence of bile in the first passages; but if the disease continues unabated beyond a few days, or increases, then the case is serious; the bowels become obstinately constipated, the stomach deranged, fever sets in, and engorgement in one of the great cavities is gradually but surely formed.

180. *Terminations.* This condition terminates in increased biliary excretion, in some other form of disease, or in death.

181. *Treatment.* This consists in the prudent employment of mercurial and other purgatives, aided by sudorifics, diluents, regimen, and the warm bath, according to the symptoms and circumstances indicated by the general and capillary circulation, and by the gastro-intestinal tube, &c.

182. HEPATIC DERANGEMENT, if unchecked in the commencement, usually produces engorgement of the liver, indicated by aggravated symptoms. Whenever engorgement is present, bleeding, generally and locally, should be promptly and freely, but prudently employed, and then blisters are extremely efficacious and useful *.

183. CONGESTION OF BLOOD ON THE LIVER. The pathology of this condition seems to be the following:—The portal vein originates in the capillaries of the abdominal viscera, and terminates by capillaries in the acini biliarii. The portal circulation is peculiar; the conformation and relations of the portal vessels favouring congestion of the abdominal organs, and exercising an extensive con-

* Mr. Annesley's practical views, detailed in the first volume of his quarto work, deserve particular notice. The treatment here recommended for deranged hepatic function, is meant for those affections in their simple and early stage. The effects of remedies are considered apart, the indications of cure being stated under the head of treatment; the means of accomplishing those objects form the subject of the fifth chapter.

troul over the phenomena, and the course of disease. A glance over this conformation will enable us to comprehend how those consequences are produced. The capillary venous tubes of all other parts, except the abdominal circle, progressively enlarge into trunks, hence they are not subject to congestion except from some preternatural cause. On the contrary, the abdomino-portal system, or circle, both originates and terminates by capillaries, being formed by the re-union of intestinal capillaries, which anastomose as they enlarge. The portal vein is also of smaller calibre than the aggregate of the two veins that unite to form it. Hence the current of blood, in passing from the aorta into the hepatic veins, experiences impediments, 1st. from the very minute capillaries distributed to the membranes and mesenteric lamina; 2d. from the lengthened passage; 3d. from the multiplied flexuosities; 4th. from contingent pressure; 5th. from obstructions in the biliary acini impeding the passage of blood through them into the hepatic veins, and causing congestion of the portal system, corresponding to the extent of obstruction. When the blood flows into the hepatic veins, it has no further impediment in its transit to the heart, as the hepatic tubes, by their adhesion to the parenchyma, are held continuously open, are extremely short, and proceed anastomosing and enlarging very rapidly, until they enter the inferior cava. The portal system of the liver, therefore, from the circumstances of its

capillary origin, its collection into one tube, and its capillary distribution and termination, is peculiarly liable to congestion; and, as sanguineous hepatic congestion is (in the estimation of Indian practitioners) a frequent occurrence, it appears reasonable to refer this condition to the portal system of vessels.

184. *The causes of congestion of blood in the liver and in the abdomino-portal vessels.* A congested state of the portal system may result, *Firstly*, from a preternatural thickening and obstruction of the acini biliarii rendering them less pervious. *Secondly*, from an altered state of the crude blood, it having become either less fluid, or impregnated with irritants, that constringe the capillaries of the acini. *Thirdly*, from a combination of these causes. And, *fourthly*, from increased volume of the fluid poured into the liver. A preternatural thickening of the acini, impeding the transit of blood through their capillaries, takes place in irritated, inflammatory, and deranged states of the liver, however induced. An alteration in the crude sanguineous constituents certainly occurs after full meals, and the free use of diffusible * stimuli. The want of exercise, and sedentary habits, promote a gorged state of the biliary apparatus, *i. e.* the secreted bile remains distending the tubes, and circulates slowly, or inadequately. Its continued detention irritates the biliary apparatus, renders

* Dict. des Sciences Med. tom. III. art. *Boisson*, p. 238-9.

it more viscid, and its removal more difficult. Experience proves these facts, in the case even of healthy individuals, who, from correct habits, turn to a course of rich feeding, the free use of wines, and disuse of exercise. In fine, any one of the disordered states above mentioned may induce this pathological condition; or it may be induced by the ordinary causes of hepatic derangement, and, in its turn, it may occasion any one of those forms of deranged function. Considering the intimate connection of the two systems concerned in the liver, (the circulatory and excretory,) it is obvious that one system of vessels cannot be materially deranged without affecting the other; and experience confirms physiological inferences respecting this point. Congestion of blood in the liver either occurs first, and augments other exciting causes of functional derangement; or, those causes first effect a derangement of the excretory system, and then aid in producing or augmenting sanguineous congestion. Whichever state takes precedence, the continued existence of the one will certainly produce the other. The early stage consists, Firstly, of a deranged action of the biliary acici; and, secondly, of disordered hepatic circulation, with congestion of blood in the liver.

185. *The consequences of congestion of blood in the portal system of vessels.* The operation of this state is to be viewed, *Firstly*, In reference to its effects on the liver. *Secondly*, In relation to all those parts from which the portal vessels proceed;

because they participate in the gorged state, and become diseased from congestion of blood in their veins. As it appears of vital importance to have a clear conception of the parts that become embarrassed by congestion of the liver, the portal vessels should be viewed in connexion with their abdominal origins. Having thus ascertained the precise parts that suffer conjointly with, or consequently upon, the liver, the indications of cure, and the cause and course of those various forms of disease that proceed from this state, will become more clear and intelligible. Congestion in this system of vessels will necessarily more or less gorge the veins of the spleen, those of the stomach, the gastro-epiploic, duodenal, pancreatic, and coronary veins, and in part those of the colon and rectum. The superior mesenteric, or great meseraic vein, returns the blood from all remaining parts of the intestines, and from the mesentery, omentum, and peritoneum. Congestion of it, therefore, gorges the capillaries of the omentum and mesentery, and those of the muco-gastro-intestinal, and the peritoneal surfaces throughout. The important points to be remembered from this rapid review, are, *Firstly*, the continuously open state of the hepatic veins. *Secondly*, the extremely minute and complex structure of the biliary acini, through which the blood passes. *Thirdly*, the great liability of the acini to derangement and to obstruction. *Fourthly*, that the portal vessels in the liver are dilated as fluid is propelled into them, and thereby engorged.

*Fifthly*, that the circulation in the capillaries of many of the abdominal viscera becomes impaired and languid, from engorgement of the vena porta. *Sixthly*, that the blood is collected into one tube, forming a large column, interposed between the two capillary extremes. *Seventhly*, that under these circumstances partial congestion may take place in some part of the portal veins, without materially retarding the blood in its passage from the spleen, gastro-intestinal tube, &c. *Eighthly*, that a considerable and general state of engorgement of blood in the liver must necessarily soon become extended to, and cause congestion of the vessels that concur to form the portal veins. *Ninthly*, that congestion of these vessels must necessarily produce a distinct series of morbid actions in those parts to which they are distributed. *Tenthly*, that those morbid actions will be modified according to the structure and functions of the parts principally affected. *Eleventhly*, that the longest vessels, being those extending from the rectum, colon, mesocolon, mesentery, cæcum, and ilium, these are the precise parts most generally and materially affected by all disordered hepatic states. *Twelfthly*, that, in all cases of sanguineous congestion of the portal system, or its abdominal sources, after adequate general bleeding, local depletion is most efficaciously performed by the application of leeches around the anus, over the abdominal parietes and the perineum, as the blood drawn from those parts reduces the quantity about

to be poured directly into these sources of the portal system, whether it be derived from arterial or venous capillaries. *Thirteenthly*, that purgatives are the next most efficacious remedies, as they procure copious discharges of fluid from the intestinal surface. *Fourteenthly*, that mercurials, ipecacuanha, regimen, alteratives and tonics, with appropriate exercise and clothing, and subsequently change of air, or a sea voyage, are also important means of cure.

186. *Symptoms of congestion of blood in the portal system of vessels.* The several parts to which the ramifications of this wide-spreading system are distributed, perform functions peculiar to each, hence an engorged condition of those vessels in any one part will be indicated. *Firstly*, by symptoms that announce deranged function of that part. *Secondly*, by a series of morbid actions marking the progress of disease; but varied according to its intimate structure, its functions, and relations. Thus, congestion of blood in the portal system of the liver, will produce, 1st. A sense of fulness in that region, especially augmented by full meals. 2dly. A soreness, or tenderness, increased greatly by pressure. 3dly. Disorder of some of the hepatic functions. 4thly. Fugitive pains about the head, neck, shoulders, back, and sides. 5thly. Disorders of the digestive function, and of the general circulation. If this state is not removed by evacuants, or a spare regimen, some of the following more aggravated forms of disease succeed. Hepatitis may

supervene, but functional disorder is a very common consequence ; the biliary secretion becoming either increased or diminished, and generally altered. The congestion may also be extended to some other part or parts of the abdomino-portal vessels. In tracing the symptoms which engorgement of those vessels produces in other parts, let us keep the minute structure and functions of these parts clearly in view.

187. Congestion of the splenic veins produces a tumid state of spleen, usually attended with gastro-intestinal derangement, and frequent febrile attacks.

188. Congestion of the gastric veins produces an irritated state of the mucous coat, impairs the quality of the gastric juice, deranges the digestive function ; dyspepsia, borborygmus and intestinal derangement usually supervening.

189. Congestion of the duodenal veins engorges the mucous surface, deranges digestion, impedes the formation and absorption of chyle, and occasions flatulence.

190. Congestion of blood in the pancreas deranges the secretion of that gland, and tends to the production of organic disease of its tissue. I am unacquainted with the distinctive symptoms indicating this state.

191. Congestion of the little mesenteric vein produces a gorged state of the mucous surface of the transverse and descending colon, and of the mucous tissue of the rectum. This state deranges

the natural functions of the part, and occasions costiveness, hœmorrhoids, or diarrhœa, followed by local irritation, which in its turn is succeeded by dysenteric pustules and ulceration.

192. Congestion of the superior mesenteric or great meseraic vein, produces, 1stly, an engorged state of the mucous surface of the jejunum; 2dly, of the ilium; 3dly, of the cæcum; 4thly, of the ascending and descending colon and rectum; 5thly, of the capillary vessels situate in the mesentery and meso-colon; 6thly, of the capillary system in the great and small omentum; 7thly, of the capillaries connected with the peritoneal surface. Congestion occurs most frequently in the intestinal mucous surface, because the vessels are much longer, and their flexuosities are much greater in that tissue: these delicate vessels also suffer from elongation, from corrugation, and from contingent pressure. These states give origin to uncertain and irregular action of the bowels, to costiveness or purging succeeding one another; and to hœmorrhoids. Diarrhœa and costiveness frequently occur from local engorgement, and are often the precursors of irritation and dysenteric ulceration. Slight febrile symptoms mark this state, aggravated according to the extent of congestion, or the degree of irritation.

193. *The progress of congestion of blood in the portal, and in the abdomino-portal system of veins.* A congested state of the portal veins produces abdominal disease, varied according to the struc-

ture and functions of the part or parts chiefly affected by this state. Preternatural pressure by plethora on the biliary acini, will first cause deranged function, and if not soon removed, the disease becomes acute, and hepatitis is established. If the congestion affects chiefly the gastric system, and slightly deranges the hepatic function, dyspepsia is formed. If the gastro-intestinal and hepatic apparatus are both affected to an extent that irritates their nervous plexuses, the circulatory system is stimulated, and the head suffers from the temporary derangement of nervous influence and of the circulation. This general disturbance, after a short course, subsides, and hence is termed Ephemeral bilious fever. When hepatic congestion produces engorgement of the abdomino-portal system, the abdominal nervous plexuses are irritated by the blood forced into, and delayed in them. The quickened and augmented arterial action, far from removing the abdomino-portal obstruction, augments it, and gives rise to what commonly is called bilious fever. The characters of this febrile state are modified by previous conditions, and habits, and by present circumstances. When a similar state of obstruction becomes more extended, and affects the peritoneal surface, (more or less) it produces a determination to, and engorgement of, the cerebral vessels. This state may be termed congestive bilious fever. If the congestion becomes especially established in the

veins distributed through the mesentery to the gastro-intestinal mucous membrane, this turgid state may produce either diarrhœa, by causing increased exhalations from the mucous surface, or acute hepatic dysentery, from irritation of the capillaries distributed to the cæcum, colon, and rectum, passing into acute inflammation, and ultimately terminating in ulceration, or chronic hepatic dysentery, if the system is not disposed to intestinal disease of a more active form. (§ 67. 70. 78. 79. 80.)

194. *Indications of cure.* The first step is to make an exact inquiry into the state of the several functions, and the information afforded will suggest the intentions of cure. Having ascertained the part or parts of the portal system more especially suffering from congestion, the objects are, *firstly*, to remove that congestion; *secondly*, to re-establish a healthy state of the hepatic and gastro-intestinal functions. The *first* object will be attained by general and local bleeding, premising the first freely, and subsequently repeating the latter at intervals of twelve hours, until the pulse, and relief from pain, prove that congestion is removed. The *second* will be effected by counter-irritants or blisters, which will transfer irritation from internal parts to the surface, and by various other means, according to the peculiarities of each case; but regimen, exercise, mercurial alteratives, ipecacuanha, castor oil, and mild aperients, are the most successful remedies.

# CHAPTER IV.

## SECTION I.

### OF THE BILIOUS FORMS OF DYSPEPSY, DIARRHŒA, DYSENTERY AND FEVER.

195. Dyspepsy. The morbid conditions understood by this term are very numerous. It embraces all those cases wherein other diseases, having disordered the gastro-intestinal functions, disappear or become ameliorated, leaving gastro-intestinal derangement as the predominant form of disorder. A very small proportion of these cases originate in primary gastric affections; they ordinarily proceed from derangement of some other organ or part. In fine, dyspepsy of the present day comprehends the straggling cases of every class of disease which, in their chronic stage, lose their ordinary distinctive characters. Thus, cerebral engorgement, pneumonia, congestion in the vessels of any abdominal organ, with many other diseases, as rheumatism, gout, &c. in their chronic form, are mere dyspeptic cases to superficial observers. The invasion, progress, and existing state inferred by exploring the thorax, abdomen, &c., indicate the true source and character of

the complaint. Dyspepsy is either idiopathic or symptomatic; and amongst Europeans in India no organ contributes so largely as the liver to the production of dyspeptic cases.

196. Causes *of dyspepsy originating from the liver.* Whatsoever deranges the hepatic secretion to an extent that produces dyspepsy, is necessarily the original, and hepatic derangement the intermediate, cause of this complaint. Let us turn to the causes* of hepatic functional derangements, and of congestion in the portal system, (§ 80. 81. 137.) for the origin of hepatic dyspepsy.

197. *Modifications of dyspepsy.* This Proteus-like disease rarely presents the same characters in any two cases, nor even in the same case at different periods. This results from the peculiar moral and physical circumstances of each case—age, sex, constitution, habits and mental disposition, are the prominent circumstances that modify and control the symptoms.

198. *Symptoms.* Dyspepsy is announced by a peculiar combination of symptoms in every case, arising from variations in the following causes;

* There are some causes unconnected with my subject, of which the mention indicates the means of cure. Infants suffer indigestion, either from costiveness or over-repletion; children from the same causes, and from indigestible food. Wet nurses suffer from the constitutional effects of nursing, especially when continued too long, or the quantity of milk drawn is beyond the assimilatory powers. Excesses of sexual intercourse. Uterine affections, and mental emotions, &c.

*first*, alimentary matter of varied quantity and qualities in part undigested passing into the duodenum. *Secondly*, the consequences of a fermentation which that undigested state of the alimentary matter produces in the stomach and duodenum; *i. e.* the generation of an extremely acid liquor that occasions heartburn, nausea, and eructations of fœtid gas. *Thirdly*, this mass of indigested substances, moistened by a preternaturally acrid acid, irritates the intestinal mucous membrane. *Fourthly*, those indigested substances in the process of decay during their transit through the intestinal tube, extricate more or less gas, and the distension thus caused, places the minute capillary vessels and nervous filaments in a state of extension, with irritation in one or both, and interferes with the capillary functions. *Fifthly*, gastro-intestinal irritation (§. 3. 9.) produces a febrile tendency and flushes. The nervous relations of the abdominal plexuses in the lower extremities announce this state, by cramps of the toes, soles of the feet and muscles of the legs, (§ 114.) and by a sense of burning, of weight, heaviness, pricking, stinging or creeping of the surface, or by pains of the lower limbs. *Sixthly*, if the points of muco-intestinal irritation are too circumscribed to produce fever, and if they ulcerate, or being more extensive, ulcers form in the ilium, and fever supervenes, sulci are seen on the tongue; which occasionally ulcerate when the intestinal ulcers are in a very

irritable state ; and sometimes ulcers are detected in the mouth, more especially in scorbutic cases. *Seventhly*, the capillaries pertaining to the envelopes of the gastric nervous plexuses, becoming slightly gorged and irritated, the cerebro-spinal nerves that inosculate with those plexuses, indicate disorder by fugitive pains or suffering of their musculo-cutaneous extremities. Hence a variety of pains and uneasy sensations about the head, neck, throat, superior extremities and thorax, are experienced, owing to the inosculations of certain of the pneumogastric nerves with the gastric coronary plexuses. (Vide 7 to 18.) *Eighthly*, the hepatic nervous plexus inosculates with the coronary, the duodenal, and nerves of the pancreas ; hence congestion or irritation in the envelopes of those nerves may produce either dull sensations of uneasiness in those parts, or fugitive pains in the superior relations of the phrenic or pneumogastric nerves. Nervous connections explain those wandering pains of the head, neck, superior extremities and thorax, with occasional pain and sense of constriction or strangulation in the throat, which are sometimes felt. *Ninthly*, dyspepsy also results from an engorged or irritated state of the gastrico-nervous tissues, however induced. *Tenthly*, dyspepsy occurs frequently from the food being objectionable in one or more of its qualities, or from ill-selected time of taking it, or from excess. *Eleventhly*, it is often a consequence of hepatic derangement, or disease that extends to

and affects the gastric nervous system; and in those cases the symptoms and history will clearly indicate a gastro-hepatic affection. *Twelfthly*, the derangements of other parts of the animal system, exercise a certain influence over the gastric function; thus, uterine affections produce dyspepsy, and their occasional and painful concomitant, globus hystericus. *Thirteenth*, mental agency has great control over this function, as nostalgia, anxiety, grief and other depressing passions.

199. *The progress of Dyspepsy.* This condition, however induced, is marked by a deranged and uncertain function of the intestinal canal. The general health becomes bad, the naturally elastic state of both body and mind is changed to a more feeble and languid condition. The clear white and red of European countenances disappear, and are replaced by a sallow or dark complexion, marked in some parts by peculiar brown-coloured patches, and streaks of irregular form. The gums, carunculæ lachrymales, and the tongue, become progressively pale, indicating decreased action, and consequently want of nervous energy in the capillary system. The entire animal economy is in a debilitated condition, predisposing any organ or part to disease from contingent causes; thus, cold, exposure, intemperance, fatigue, &c., that would be harmless to a healthy individual, may in this debilitated state produce evil consequences. This chronic condition of disease rarely occurs to the practitioner in

its simple form, *i. e.* as the pure effect of gastric disorder; it is either the consequence of, or it soon produces and becomes conjoined with, some form of hepatic derangement, or some form of visceral disease. Dyspepsy may be said to terminate, *first*, in other diseases, when the affection of some particular system or organ becomes aggravated to an extent that extinguishes the characters of dyspepsy. *Secondly*, in a valetudinarian state. *Thirdly*, in the recovery of health.

200. *Indications of cure.* As it appears from the foregoing, that in all cases of dyspepsy, the capillary circulation becomes debilitated and disordered, the hepatic and intestinal functions being either originally or secondarily deranged, the indications of cure should be directed, *firstly*, to the removal of the cause, whatsoever that may be. *Secondly*, to promote healthy hepatic and intestinal action, and improve the capillary circulation generally. *Thirdly*, to obviate the morbid states indicated by the progressive symptoms, correcting acidity of stomach by magnesia or alkalies.

201. *Treatment.* In reviewing gastric intestinal and hepatic derangement, we find disordered capillary function predominant in each, however produced. The removal of this state is best effected, *firstly*, by removing partial congestion from every part of the organs affected. (§ 78. 79. 80. 183.) *Secondly*, by re-establishing healthy hepatic and gastro-intestinal functions. (§ 193. 194.)

202. EPHEMERAL BILIOUS FEVER. *Causes.* Want of exercise with free living, or excesses in diet, derange the biliary and gastro-intestinal functions. A disordered state of those functions irritates, or otherwise affects the thoracic and abdominal ganglia and plexuses, (including those of the liver). Then additional excesses, exposure to the sun, fatigue, or mental emotion, frequently produce a febrile movement, accompanied by some symptoms of hepatic, and some of gastro-intestinal derangement. A tendency to this febrile state occurs more frequently than developed febrile action; because the irritated condition subsides, if it is not augmented or called into free action by some new exciting cause; hence exposure to the sun is usually the immediate exciting cause, more especially when a full meal, with beer, wines, or alcohol, has been taken. It occurs, however, but less frequently, from ordinary errors of diet and want of exercise, without exposure to the solar rays. A febrile state simulating this condition, arises from a surfeit, or over-full meal with excess of stimuli; but its course terminates in a shorter period, and its decline is usually marked by vomiting, nausea, alvine dejections, a flow of urine, perspiration, or headache.

203. *Symptoms depending on nervous agency.* Pain of the head, eyes dull and heavy, loss of appetite, pains of the back and extremities, prostration of strength, great listlessness, heaviness of the body and limbs, disinclination to move, dul-

ness of mental faculties, sleeplessness, and sometimes restlessness. Breathing is shorter and less free than ordinary. *Symptoms of the circulating system.* The pulse is large, full, surging, not hard, and from 100 to 120. The vessels of the conjunctiva are injected with blood ; and the face mostly flushed, yet rarely pale. *Symptoms of the gastro-intestinal function.* Bowels costive, some thirst, tongue furred, white, moist or clammy ; sometimes vomiting or nausea. *Symptoms of the skin*, &c. The cutaneous surface is hot and dry, and the palms of the hands and soles of the feet tense, with burning heat. Urine is scanty, and deep-coloured from renal engorgement.

204. *Progress.* This species of fever has the symptoms progressively aggravated for the first twelve or eighteen hours, after which period it usually declines.

205. *Terminations.* In health, by purging, spontaneous or excited ; by vomiting ; by a flow of urine, a profuse perspiration, or by a refreshing sleep. It also sometimes terminates in other complaints, especially in subjects predisposed to another form of hepatic affection, or to other diseases, it serving to develope and augment such complaints ; and the fever adopts, altogether, or in part, the peculiar characters of the superinduced affection.

206. *Treatment.* A dose of calomel, followed by compound powder of jalap or croton oil, after a proper interval, will promote a copious discharge

of the biliary and pancreatic fluids, and cause free exhalations from the mucous surface ; and the intestines, being freely evacuated, the urinary secretion also becomes increased. The ganglionic nervous system is thus relieved, and the vascular action subsides into a moderate, and ultimately into a healthy state. After an attack of this nature, due attention should be paid to diet and exercise, and exposure to solar influence avoided for some time. The gastro-intestinal function should be carefully observed, and regulated by mild remedies, that stimulate the biliary apparatus and the intestinal tube to the healthy discharge of their functions. Such are the pilula hydrargyri, pulv. ipecacuanhæ, pulv. rhei, oleum ricini, &c. The occasional exhibition of an ipecacuan emetic during this mild alterative course is advantageous. A question will occasionally arise, whether venæsection should be performed for this disease or not. The state of the pulse will be the surest, and best guide. When the beat is *hard*, the calibre of the artery decreased, the arterial system depressed ; or when it is large, full, tense, and firm ; or if a great determination to any particular organ or part takes place, blood should be drawn from a large vein, and the amount regulated by the effects. Those indications, however, do not usually occur ; or they are rare in this species of fever. (§ 183.)

207. Common bilious fever. Medical men in India having observed that derangements of the

hepatic functions invariably accompanied a certain fever, and frequently afforded the prominent characters that marked its course, applied to it the term bilious. Common bilious fever occurs frequently in Indian practice, more especially in the very hot weather, when it is sometimes epidemic as well as endemic. This fever occurs either in a simple or complicated form; *i. e.* it is occasionally associated with local affections, and in other cases with exanthematous or other diseases.

208. *Causes.* The bilious temperament predisposes to this disease, and it very generally attacks the young and healthy. Impure air (malaria) especially when moist and heated, hot air with or without moisture, very dry and hot exhalations, exposure to sudden changes of temperature, to solar influence, excesses in the use of fermented, vinous, or spiritous liquors, prolonged want of sleep, inactivity suddenly substituted for active labour or exercise, long fasting, overeating, the use of bad or very fat food, anger, grief, anxiety and regret, are the chief causes, and these act chiefly by deranging the hepatic and gastro-intestinal functions.

209. *Symptoms.* Pains of the head, shoulders, back, loins, and limbs; chills, followed by flushes, or the one without the other; general heaviness and lassitude; indigestion, loss of strength and appetite; tension and sense of heaviness in the belly; nausea, sometimes vomiting, borborygmi,

eructations, fœtid breath, furred and clammy tongue, altered or disagreeable taste, costiveness, sometimes diarrhœa, pale or flushed face, yellowness of the conjunctiva of the eyes; uneasiness, tension and oppression at the epigastrium; oppressed and quickened breathing; large, full, and accelerated, but usually not hard pulse; hot and mostly dry skin, and scanty and dark urine, characterize this disease.

210. *Pathology.* If we refer these symptoms to their ordinary causes (§ 80. 183.) the inference will be, the existence of hepatic and gastro-intestinal functional derangement, occasioning febrile action, with more or less congestion and obstruction of the liver; or, congestion of some other part of the abdomino-portal system of vessels.

211. *Progress.* This depends on the curative means employed. If the disease is left to its own course, the symptoms become progressively aggravated in the ratio that congestion advances, leading to engorgement of the cerebral vessels or some local alteration of organic structure, as ulceration and perforation of the intestinal tube, abscess of the liver, &c. On the stomach and intestines becoming greatly affected, cerebral congestion supervenes, and often terminates in effusion and death.

212. *Treatment.* As the disease depends on a congested state of a particular system of vessels, so necessarily an immediate, efficient, and prudent

reduction of their contents is the primary object. *First*, a free general bleeding unloads the large vessels, and leeches are then used with greater advantage, the repeated application of them being often necessary. Mercurial purgatives should also be employed to promote the hepatic secretion, and be followed by other active purgatives. Antimonials ought to be prescribed, and counter-irritants employed externally to determine the circulation to the surface, and to restore an equal and healthy distribution of blood to all parts of the body. Cold effusion and emetics are occasionally used in the course of treatment with great advantage; and due attention should be given to regimen, repose, ventilation, and mental tranquillity.

213. HEPATIC DIARRHŒA. Four affections come under this title, influenced more or less by hepatic derangement, yet differing in their modes of origin, symptoms and pathology. *Species* 1st, BILIARY DIARRHŒA. This affection consists of the overflow or superabundant excretion of bile, producing increased exhalations from the gastro-intestinal mucous surface, with frequent alvine discharges, with or without vomiting. In this disorder undiluted bile flows over the mucous surface, and, by its acrid stimulating properties, irritates the capillaries, and produces an inflammatory blush in patches scattered over the mucous surface, subject either to disappear or become aggravated. The disease depends upon an alteration of the biliary constituents, &c., or upon an

excess of the biliary fluid, secreted and poured out in a given time.

214. *Species* 2d. DYSPEPTIC DIARRHŒA.—Hepatic derangement having impaired the digestive function, the use of indigestible food, or other injurious materials, produces a morbid fermentation, and a pernicious acid becomes generated in the stomach or duodenum. This acid, in passing over the mucous surface, disorders the capillary vessels. The undigested substances, in their transit through the intestinal tube, emit gas by decomposition; the mucous and serous capillary vessels thus become extended in proportion to the gaseous dilatation of the intestinal tube, and the disorder is thereby augmented. When increased muco-intestinal exhalations occur under these circumstances, the complaint consists, *first*, of hepatic derangement; *secondly*, gastric disorder; *thirdly*, irritation of the intestinal-mucous membrane; which, collectively, form dyspeptic diarrhœa.

215. *Species* 3d. ENTERO-HEPATIC DIARRHŒA.—Errors in diet, cold, excesses, unwholesome food, or unusually stimulating condiments, occasion intestinal irritation with increased exhalations from the mucous surface, and frequent alvine dejections. Irritation and engorgement of the intestinal capillaries soon produce a change in the capillary circulation and functions of the biliary organs. The bile becomes either increased or diminished, and very probably its qualities are also changed.

The dejections are muco-bilious, bilio-feculent, and occasionally blended with pus or blood. The disease consists of muco-intestinal, conjoined with hepatic, engorgement and irritation.

216. *Species* 4th. ACUTE HEPATIC DIARRHŒA.—Frequent, scanty muco-feculent dejections, preceded by tormina, and succeeded by tenesmus, characterize this variety; the dejections speedily changing to muco-sanguineous, and accompanied with more or less of febrile symptoms. This is the aggravated and acute form of the preceding disease, and the precursory stage or invasion of dysentery.

217. *Causes.* The pathological states noticed are, *first*, derangement of the biliary apparatus; *secondly*, congestion and irritation of the hepatic capillary vessels; *thirdly*, congestion and irritation of the gastro-intestinal mucous capillary system; *fourthly*, an irritated state, producing increased action of the gastro-intestinal exhalant vessels and mucous follicles; *fifthly*, congestion of blood in the intestinal extremities of the portal vessels. Some one, two, or more of those states necessarily precede and give origin to diarrhœa, and hence whatsoever excites one or more of those states, is thereby the primary cause of diarrhœa. Errors of diet, improper food, and exposure to injurious states or variations of temperature, are the usual but not the only causes of this disease. When the body is subjected to the remote causes of diarrhœa, the constitution, habit of body, tem-

perament, and the actual state of the several organs, will determine whether any pathological change ensues; and if it does, the extent, and consequently the form, or species of disease, is decided by these conditions. Thus cold, to a certain extent, does no injury to the robust; but exposure of the predisposed to the same degree of cold affects the head in one case, the thoracic viscera in a second, the abdominal viscera in a third, produces rheumatism in a fourth, fever in a fifth, &c.

218. *Symptoms.* The *first species* of diarrhœa is usually accompanied by irritation in the lower part of the ilium, and in consequence it is strongly marked by nervous indications, a soft, weak pulse, varying from 88 to 104, tremulous tongue, cold moist skin, with more or less tendency to sinking and collapse. In the *second species* there is usually some febrile heat, especially in the head, hands, and feet, after meals; marking the progress of the offending materials through the gastro-intestinal tube till they reach the cæcum. The *third species* is an aggravated form of the second, hence the febrile symptoms are more severe, and the tendency to intestinal ulceration is greater. This form is frequently presented to us after the symptoms of acute dysentery cease. The *fourth species* is considered under the title of dysentery.

219. *Consequence.* The prevalence of cholera in India, since 1818, has led medical men to be very cautious in the early treatment of diarrhœa, very numerous cases have occurred, in which

general collapse set in after the first two, three, or four hours; the vital or nervous energies having sunk, and death ensued, as in cases of asphyxia from pulmonary and cerebral congestion. This fatal termination seems to be prevented by the very early and prompt use of opiates usually exhibited together with a dose of calomel. If the diarrhœa continues on the second day, collapse is no longer feared, and the complaint comes under the treatment adapted to its pathology.

220. *Progress.* The advanced stages of this complaint tend, *first*, to ulceration (which is considered under dysentery) of the muco-intestinal coat. *Secondly*, to produce a thickened and fleshy state of the membrane, which then becomes a pus-secreting surface. *Thirdly*, to dispose ulcers of the ilium, cæcum, or colon, to slough. *Fourthly*, in scorbutic cases, a chronic state of inflammation, with increased exhalations and frequent alvine dejections, takes place, which deranges digestion, interrupts the formation of healthy chyle in the usual proportion, and prevents, by the excited action of the exhalants, the absorbents from taking up chyle. Scurvy merits a separate and serious consideration; but it does not fall within the circle of complaints occasioned by hepatic disease.

221. *Indications of cure.* We have seen that the pathology of diarrhœa consists, in its early stage, of congestion and irritation of the muco-intestinal capillary extremities, with irritation, and increased action of the exhalants, and

mucous follicles. Congestion of the portal vessels is frequently conjoined to irritation and congestion of the mucous surface. Medical practice is directed to remove this condition, but great circumspection is required, lest the symptoms mark the invasion of cholera. The severity of the case, the condition of the patient, and the symptoms, will fix the precise limits to which the following indications should be carried. *First*, reduction of the volume of blood circulating in the large vessels, by general bleeding. *Secondly*, reduction of the blood in the congested capillaries, by local bleeding. *Thirdly*, the removal of morbid and offending materials from the gastro-intestinal tube. *Fourthly*, the restoration of the hepatic function to a healthy state. *Fifthly*, the equalization of the circulation, by determining from the muco-intestinal, to the external, surface of the body. *Sixthly*, the transference of irritation from internal parts to the external surface. *Seventhly*, the restoration of the gastro-intestinal function to a healthy state.

222. *Treatment.* These indications are effected by general bleeding—the state of the pulse, stage of disease, the circumstances, age, sex, and general volume of the circulating fluid, being all clearly and relatively considered, in deciding the amount of blood to be drawn ; by the application of leeches or cupping ; by aperients ; by mild mercurials ; by nauseating medicines, as ipecacuanha, and occasionally by an emetic ; by counter-irritants ; and by regimen and diluents

in the first stage of convalescence, followed by mild and digestible farinaceous diet, and the occasional use of tonics, in the second stage, never omitting the timely exhibition of aperients.

223. ACUTE HEPATIC DYSENTERY. The question whether dysentery originates in hepatic disease has been controverted for several years. The mode of conducting this inquiry is simple; let us examine the pathology of dysentery, and take the information thus derived as guides. Pathological researches on all sides prove, that the muco-intestinal coat becomes gorged with blood, and thickened at the invasion of dysentery; and that muco-intestinal vascular engorgement and thickening, are consequences of hepatic disease, as above demonstrated by the peculiar distribution of the portal system (See § 183. 80. 79. 78.). The muco-intestinal venous capillaries are subject to engorgement; *first*, from any impediment to the free return of blood through the acini; *secondly*, from arterial action, which preternaturally increases the volume of blood poured into these capillary veins; and, *thirdly*, from mechanical pressure by fœces, or from gaseous dilatation of the tube.

224. The abdomino-hepatic venous system has peculiar characters, that merit our attention. 1st, the organization of veins permits great increase of their diameters; 2dly, the portal venous system is deprived of valves; 3dly, the enteric veins are subject to the pressure of hardened fœces, and to

disorder from gaseous distension ; 4thly, they run a very long course ; 5thly, they can receive little or no support from the tissue through which they are distributed ; 6thly, their very tortuous disposition offers an impediment to the transit of blood, and renders them more liable to engorgement ; 7thly, the volume of blood in the intero-portal veins is subject to increase by venous absorption of fluids from the gastro-intestinal tube ; 8thly, errors of diet produce congestion and irritation of those vessels ; 9thly, cold occasions a similar effect ; 10thly, bad food, and medicinal agents, often act in a similar manner ; 11thly, an impediment to the free circulation through the acini of the liver, partially arrests the current through the whole circle ; and when the hepatic branches of the portal system become gorged, this condition is progressively extended from the liver to the minute capillaries lodged in the muco-intestinal coat. 12thly, the hepatic extremities of the portal system are well supported by the parenchyma of the liver; but the intero-portal extremities have little or no support. From the foregoing, it appears, *first*, that hepatic disease will occasion dysentery, and experience has shown that they usually co-exist. *Secondly*, that dysentery may occur without pre-existing hepatic disease ; thus a diarrhœa neglected, or treated with irritating purgatives, becomes a true dysentery.

225. The offices performed by the several parts of the gastro-intestinal tube, vary greatly one

from another, and the organization of the mucous tissue is varied, and adapted to the offices of each part. For these reasons the symptoms produced by congestion, irritation, inflammation, or ulceration, in one part of the mucous coat, differ widely from those that result from a similar morbid state, in a different part of that coat: congestion and ulceration in the superior part of the tube are attended by indigestion and pain; their occurrence in the central portion is marked by fever and diarrhœa, and their attack in the cæcum, colon, or rectum, produces dysentery. The mucous membrane of the stomach becomes thickened in some irritable states of dyspepsy, and preternaturally thin and flaccid in others. The mucous coat of the duodenum and jejunum are peculiarly subject to the same changes; and, as these intestines contain a large proportion of the lacteal vessels, it follows that disease of their mucous surface interferes with the assimilatory process. The first third of the ilium contains numerous lacteals, and the mucous coat is thicker; lower down, the lacteals progressively cease, and this coat loses the rugæ, and becomes thin. It passes the chyme to the cæcum progressively, giving off chyle to the lacteals, and superfluous fluid to the absorbents extended to that surface from the entero-portal veins. It is subject to sanguineous congestion, irritation, inflammation, and three species of ulcer. The mucous coat of the lower part sometimes becomes thickened or carneous, and secretes pus.

226. The mucous coat of the cæcum, colon, and rectum, does not contain lacteals, and it has very few absorbents; but it is largely furnished with mucous follicles. When it is attacked with inflammation, the stimulated follicles pour forth mucus, and the irritated capillaries throw out blood; the sub-mucous cellular structure becomes singularly thickened in small circular patches from half to three quarters of an inch in diameter; the part so thickened being dense, and of a yellowish white, from a copious deposit made by the exhalants corresponding to the areolæ. The circulation in the areolæ, thus changed, ceases, and the thickened part, or diseased mucous tissue becomes of a cheesy consistence and appearance. The centre of this part, in the more advanced stage of disease, rises from the muscular coat, or is detached from it, and is afterwards altogether removed, either by ulceration or sloughing. In either case, an open foul ulcer is soon presented to the morbid secretions and fæces, incessantly passing over the diseased surfaces. The remaining parts of the thickened patches soon pass with the dejections, like cheesy lumps, leaving foul ulcers tainted by the morbid substances applied to them. They often resemble pustules from the areolar distribution of vessels to them from the surrounding membrane.

227. *Symptoms.* Frequent muco-sanguineous dejections, preceded by tormina, succeeded by tenesmus, and accompanied by more or less of a febrile state.

228. *Progress.* 1st, frequent muco-sanguineous discharges ; 2dly, the evacuations become coffee-coloured, or more or less dark ; 3dly, they are more frequent ; 4thly, more or less blended with substances, resembling small lumps of cheese ; 5thly, they are often mixed with dark membranous substances, the coffee-coloured evacuations being sometimes very abundant, and, in this case, they are usually succeeded by,—6thly, copious discharges of coagulated blood ; when these latter symptoms occur, the case is hopeless, as the ulceration is then very extensive, and large vessels are destroyed ; 7thly, in some cases, inflammation is extended to the muscular coat, and soon reaches the peritoneal covering,—these changes are distinctly announced by the contracted pulse, and great suffering from pain ; 8thly, in other cases, the fœcal matters constantly passing over the ulcerated surfaces, communicate a sloughing action to them, which spreads very extensively, and destroys nearly the whole of the mucous coat in two or three days. This action has less influence on the muscular coat ; but, during the second or third day, that also is attacked in one or more points, and perforation, or destruction of it soon follows. This process differs from the former, in being attended with little or no pain, and with a sinking soft pulse.

229. *Indications of cure.* 1st, Diminish the general vascular action by copious venesection ; 2dly, relieve the gorged capillaries of the abdominal

system, by the prompt and repeated application of leeches over the hepatic region, the abdominal parietes, and especially around the anus; 3dly, produce nausea by a free dose of ipecac., once or twice daily; 4thly, provide against the consequences of hepatic congestion by one full dose of calomel every night, (say gr. viij or ℈ss.) till the mouth becomes affected, the dose being then carefully decreased; 5thly, cleanse out the intestinal tube daily by one dose of ol. ricini or pulv. rhei; 6thly, relieve the capillaries locally by hot fomentations which should be very frequently applied; 7thly, when the abdominal tenderness and soreness are great, apply hot poultices, provided that bleeding has first been sufficiently used; 8thly, when the peritoneum seems to suffer extensively, foment with tobacco decoction until nausea and giddiness are excited; this application re-establishes the capillary circulation, and gives great relief; 9thly, avoid the use of animal food; 10thly, if there be fixed pain remaining in any part, indicating a more established point of inflammation, effect its removal by a counter-irritant or blister; 11thly, relieve irritation of the rectum by lavements, *very carefully administered*—occasionally with decoc. ipecac., with solution of opium, &c.; 12thly, the use of suppositories is at times advantageous.

230. *Treatment.* After carefully reviewing the foregoing remarks on the pathology of the disease, and the ordinary course of treatment; it only re-

mains to consult the several means recommended hereafter under their respective heads; viz. general bleeding, local bleeding, ipecacuanha, calomel, fomentations, castor oil, rhubarb, lavements, and suppositories.

231. CHRONIC HEPATIC DYSENTERY. *Causes.* This is the ultimate stage of dysentery. (See *Congestion of blood in the liver.*)

232. *Symptoms.* These are dyspepsia; occasional flushes, a slight febrile movement, especially in the evening; and numerous bilio-feculent and muco-sanguineous dejections, without tormina or tenesmus: the pulse is rather large and soft, from 86 to 110; the tongue is thinly covered by a short fur, and moist; the skin is soft, flaccid, and often moist, sometimes hot and dry; the urine is mostly pale, but at times high-coloured; and the bowels are subject to great functional variations from trivial errors in diet, exposure to cold, and from fatigue.

233. *Pathology.* The intestinal ulcers having healed, or nearly so, the mucous surface has its capillary vessels in a passive state of engorgement, from the continued presence of an augmented quantity of blood in that tissue during the course of disease. The morbid irritability and tenderness of the surface produce increased excretion of mucus from the follicles; and the blood is either exhaled by the relaxed vessels, or it exudes from abraded capillaries.

234. *Progress.* Emaciation advances with the

progress of the disease, and the patient sinks either from exhaustion, or from perforation of the intestinal tube. The ordinary course of its advance towards health is by a procrastinated state of valetudinarianism.

235. *Indications of cure.* First, avoid the use of food calculated to increase the muco-intestinal irritation, to cause dyspepsy, or produce irritating fæces; 2dly, avoid increasing local irritation, by exposure to cold, or by fatigue; 3dly, remove gastro-intestinal irritation by repeated bleedings, especially by leeches applied around the anus; 4thly, determine to the external surface by keeping the body enveloped with several folds of flannel; 5thly, check irritation of the rectum by anodyne enemata, not exceeding two ounces in quantity; 6thly, determine to the external surface generally by the hot bath; 7thly, keep the intestines free from fæcal collections by tonic laxatives; 8thly, determine freely to the surface by frequent nauseating doses of ipecacuanha; 9thly, keep the liver slightly stimulated by small doses of pil. hydrarg.; 10thly, when visceral irritation is removed, improve the gastro-intestinal powers, by tonic medicines.

236. *Treatment.* In selecting the remedies to fulfil the indications of cure, every circumstance should be fully and clearly considered; thus bleeding should be less freely employed with the aged, and where the system is reduced by preceding disease, &c. It must be sparingly used in

those cases, because the physical resources are circumscribed, and the assimilatory powers are not energetic as in youth. Ipecacuanha is usually the most successful remedy, given in form of pill frequently throughout the day. The most minute attention is absolutely necessary to the regulation of diet as to quality and quantity. The use of flannels is of infinite advantage.

237. CONGESTIVE BILIOUS FEVER. Experience has proved that bilious fever, in many instances, becomes progressively more severe, until the abdomino-portal engorgement causes disorganization in some point, or cerebral congestion is produced. This tendency to congestion in the abdominal viscera and brain, has suggested the name of the disease. The commencement is sometimes that of a mild quotidian or tertian; but more frequently its invasion is in the remitting form, (See *bilious fever.*). It usually begins with severe pains in the loins and kidneys; at other times with intestinal spasms, accompanied by violent pains.—Pain of the head, fugitive pains of the body and limbs, gastro-intestinal derangement, and thoracic oppression, with or without pain at the epigastrium, are the ordinary precursory symptoms.

238. The precise characters presented in the stage of invasion, and in the progress of this disease are necessarily modified by the sex, age, constitution, previous health, habits, temperament, season, climate, &c., and hence considerable varia-

tions are observed in its ordinary symptoms and issue. The duration and termination are, to a certain extent, subject to the same influences, but they are mostly guided and determined by medical treatment.

239. *Causes.* Exhalations from vegetable substances in the process of decay, volatised into the air by the action of heat on them, when in a moist state, are the principal causes. These constitute the malaria and marsh miasma, brought to professional notice by many distinguished observers. Exhalations from jungles, especially those composed of the bamboo, have been long known to the coast army, as the most fertile source of fatal congestive fevers. The hilly country, extending north along this coast, is productive of the causes of dangerous congestive fever; a regiment of 1,000 having been on more that one occasion reduced to a skeleton by fever, in the course of a few days' service. A residence on the uncultivated hills at Pulo Penang has also subjected individuals to a species of fever very generally fatal.

240. The dews are heavy on the hills, and in forests the vegetation is very rapid and luxuriant, from abundance of dew and solar heat. Leaves, grass, and various plants, are constantly decaying, and afford an entire covering to the earth of decomposing vegetable matter, in many parts several inches deep. A medical committee was assembled at Ceylon, to suggest measures for securing the inhabitants from fever, in newly settled dis-

tricts of unbroken land and jungle. They stated that the exhalations were produced from the decaying matter on the earth's surface. The remedy was therefore obvious; *first*, to destroy as much as possible of the decaying vegetable substances, by igniting them in the very dry season. *Secondly*, to cut down and remove the wood and jungle. *Thirdly*, to plough up the surface repeatedly, and bring it under cultivation.—This advice was in every view the most judicious that could be given. His Excellency Sir E. Barnes, adopted it in a most judicious and spirited manner, by constructing carriage-roads and bridges, and establishing posts and villages for the protection and encouragement of settlers in every part of the island, which effected the object anticipated, by fixing a settled population over the island, (See *Causes of common bilious fever.*)

241. *Symptoms.* This disease varies greatly, according to individual health, constitution and age. It also varies still more with the part which is the principal and immediate seat of engorgement. In some instances it commences with the ordinary characters of a mild intermittent, in others, with those of a remittent, and again, in other cases, with great violence from the onset. The two first forms are insidious, and usually give rise to the most severe, obstinate, and fatal changes. It may be suspected that the circumstance of the milder forms, proving more fatal than that which is originally more severe, depends on the latter being actively treated, whilst the others are only opposed by

mild measures at the commencement. The pulse varies much, sometimes it is full and tense,—again, less tense, but rebounding; in other cases, it is small or compressed, and the heart's movements greatly embarrassed. The tongue is clammy, and only slightly furred in the commencement. The skin varies much in temperature, owing to the succession of flushes and slight chills. Pains in the head, neck, shoulders, back, and loins, occur always; pains in the extremities mostly. Thirst varies according to the degree of fever.

242. *Pathology.* This disease results from the combination of two distinct conditions of disease; these are, *First*, congestion of blood in the gastro-intestinal capillaries and irritation of that surface. *Secondly*, congestion of blood in the liver, and eventually in the lungs. The analysis of symptoms, the course of disease, the effects of remedies, and the result of morbid examinations, all concur to prove that this is the pathology of congestive bilious fever.

243. *Progress.* The unvaried tendency of this disease to the production of congestion in either the cranial, thoracic, or abdominal cavity, warrants the designation of congestive. When the congestion occurs, especially in the abdominal viscera, the disease may continue a considerable period, especially if the remedies employed are only sufficient to check, but are not adequate to remove it. When congestion supervenes in the lungs, their function becomes greatly embarrassed; and, if prompt relief be not afforded, the brain or its

envelopes also become affected, and death soon ensues.

244. *Indications of cure.* 1*st*, reduce the volume of blood, and relieve the vascular system; 2dly, unload the capillary vessels suffering engorgement by repeated local bleeding; 3dly, transfer irritation to the surface, and promote an equal distribution of blood, by blisters, diaphoretics, &c.; 4thly, evacuate the biliary apparatus by calomel; 5thly, keep the intestinal tube free from accumulation, by purgatives, ; 6thly, soothe gastro-intestinal irritation by neutral salines; 7thly, relieve the brain from augmented heat, by shaving the head and applying cold; 8thly, remove the preternatural heat of the entire body by cold ablution, &c.; 9thly, relieve the cerebral vessels from congestion, by leeches over the sutures, the forehead and base of the skull; 10thly, when febrile movement is removed, restore tone to the nervous and to the capillary system by the use of quinine.

245. *Treatment.* General and local bleeding are the first and most important agents. The head should be shaved in the beginning; and cold applications will then have greater effect. The utility of stimulating the biliary apparatus by calomel, is generally known and admitted, and so are the beneficial effects of purgatives. The neutral salts recommended by Hillary,* have been

* Nitrat. pot. ℈j. Muriat. Ammon. gr. xij.
Aq. pur. ʒij. f. h. ter die sum.

the most successful in my practice. The symptoms of this disease are very deceitful when the congestion is directed to the cranial cavity, and great care is necessary to avoid fatal errors in the cases first treated. Experience, in treating this complaint, (as it does in all others,) makes us acquainted with its history; but, it is on our first meeting with it, encircled with its combination of peculiar characters, and associated in every instance, more or less, with circumstances which conceal its true nature and increase its danger, that great discrimination and promptitude in the treatment are most necessary. The soft, and little accelerated pulse of natural calibre, will not warrant the omission of general and local bleeding. The giddiness, tendency to syncope, vomiting, and injected conjunctiva, indicate cerebral congestion, which requires very prompt, general, and local depletion, followed by counter-irritants to arrest its progress.

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## SECTION II.

### OF CONGESTIVE NERVO-BILIOUS FEVERS AND CHRONIC HEPATITIS.

246. CONGESTIVE NERVO-BILIOUS FEVER.—YELLOW FEVER. *Causes.* Its origin is attributed generally to malaria, or noxious exhalations from vegetable and animal matter in the progress of

decay. At Penang, it is usually attributed to a residence on the unbroken ground of the hills; persons there are frequently seized with it on descending to the valley. It occurs also on the plains when the wet season sets in, and moistens the stratum of decaying vegetable matter that occupies the surface of the ground. It is the most dangerous and fatal form of fever known; and therefore its history should occupy our particular attention; because it is only from an exact knowledge of its characters, that health can be secured from it. This fever is precisely the same as that commonly called yellow fever, in the West Indies, according to Hillary, Hunter, Gregory, Chalmers, Chisholm, Rouppe, &c., from whose valuable works I quote freely for the advantage of my readers.

247. Hillary practised in Barbadoes, from April, 1752, till the middle of May, 1758, and published an abridged Journal of his practice in 1759, from which the following extracts are taken; and it is worthy of remark, that Barbadoes is in nearly the latitude of Madras.

248. "The inhabitants of Barbadoes who live temperately, and are prudent in the use of the six non-naturals, if they have tolerable good natural constitutions, live to as great an age as the Europeans. Some have died there lately who were above a hundred years old; but those who live irregularly, and are too free in the use of vinous and spiritous liquors, generally hasten their end

more expeditiously than they who live in the same manner in Europe."—(*Introduction.* page ii.)

249. "*Of the putrid bilious fever, commonly called the yellow fever.* This disease is most commonly known by the name of the yellow fever, from a yellowness, like the jaundice, which diffuses itself all over the body of the sick, towards the latter end. The French call it La Maladie de Siam, from its being frequent in the kingdom of Siam, in the East Indies, which is situated between the tropics, near the same latitude with the West India Islands. They also call it La Fievre Matelotte, because strangers and sea-faring people are the most obnoxious to it; and the Spaniards call it Vomito Preto, or the Black Vomiting, from one of its dangerous symptoms."

250. "This fever very rarely, or never, is infectious or contagious, not even to those who attend the sick, except a chance time, when it is in its most putrid, malignant state, at the latter end of the disease, or soon after the death of the patient, when the season is very hot; and that this fever is accompanied with the symptoms of some other malignant fever which is then epidemical and contagious, as happened once at Antigua, and once or twice in this island; and the same may probably have happened in some other places: but I never could observe any one instance where I could say that one person was infected by, or received this fever from another person who had it; neither have I seen two people sick in this fever, in the

same house, or near the same time, unless they were brought into the same house when they had the fever upon them before they came. From whence we may conclude, that it has nothing of a contagious or pestilential nature in it; and that it is a very different fever, in all respects, as it will more fully appear hereafter."

251. "It is remarkable that this fever most commonly seizes strangers, especially those who come from a colder, or more temperate climate, to this much warmer; and most readily those who use vinous or spiritous liquors too freely; and still more readily those who labour hard, or use too violent exercise, and are, at the same time, exposed to the influence of the scorching rays of the sun in the daytime, and soon after expose themselves, too suddenly, to the cool dews, and damp air of the night, and especially if they drink spiritous liquors too freely at the same time; hence the poor unthinking sailors too frequently become a prey to this too often fatal disease."

252. "It does not appear from the most accurate observations of the variations of the weather, or any difference of the seasons which I have been able to make for several years past, that this fever is any wise caused, or much influenced, by them: For I have seen it at all times, and in all seasons of the year, in the coolest, as well as in the hottest time of the year; except that I have always observed that the symptoms of this (as well as most other fevers,) are generally more acute, and the

fever usually higher, in a very hot season, especially if it was preceded by warm, moist weather, than it usually is when it is more cool."

253. "This fever most commonly seizes the patient, at the first, with a faintness, then a sickness at the stomach, and mostly with a giddiness in the head, soon after with a small chilliness and horror, very rarely with a rigor, which is soon followed by a violent heat, and high fever, attended with *acute, darting pains in the head and back; a flushing in the face, with an inflammation, redness, and a burning heat in the eyes; great anxiety and oppression, about the præcordia; these, and the burning heat and pain in the eyes, are the pathognomic symptoms of this fever*, especially when accompanied with *sickness at the stomach, with violent retchings, and bilious yellow vomitings, and great anxiety, with frequent sighing*. The pulse is generally now very quick, high, soft, and sometimes throbbing, never hard; in some it is very quick, soft, low, and oppressed; a quick, full, and sometimes a difficult respiration: the skin very hot, and sometimes dry, though more frequently moist. Blood, taken from the patient, even at the first beginning of the disease, is often of an exceeding florid, red colour, much rarefied and thin, and without the least appearance of sizeness, and the crassamentum, when it has stood till it is cold, will scarce cohere, but fluctuates; the serum is very yellow; the biliary constituents either remain in the blood, or being assimilated, they are

returned into the circulation: most of the above-mentioned symptoms continually increase, and are much aggravated; the retching and vomiting become almost incessant, the anxiety great, and sighing frequent, great restlessness, continual tossing, no ease in any posture, little or no sleep, and that disturbed, uneasy, and without any refreshment to the sick; and when they are fainting, they turn yellow about the face and neck, instead of turning pale, and, as the fainting goes off, they recover their natural colour again. These symptoms generally continue to the third day, though sometimes not longer than the first or second day, in others to the end of the fourth day; the first shows the quicker dissolution of the blood, and greater malignity of the disease, the last, the contrary, or the less degree of it; which the improper manner of treating the disease sometimes hastens and increases, or the proper method retards. This may be called the first stadium of the disease, and most commonly ends on the third day."

254. "Blood taken from the sick on the second or third day, is much more dissolved, the serum more yellow, and the crassamentum fluid, loose, scarce cohering, but undulates like sizy water when shaken, and sometimes has dark blackish spots on its surface, showing a strong gangrescent diathesis."

255. "About the third day, the pulse, which was quick and full before, now generally sinks

greatly, and becomes very low, though sometimes it remains very quick, yet, in others, it is not much quicker than when the patient is in health, but is always low; the vomiting grows poraceous, and almost incessant, if not so before, and the patient begins to be comatous, attended with interrupted delirium. The thirst is in some great, in others not much; the pulse still low and quick, attended with cold clammy sweats, and sometimes with deliqua. The eyes, which were inflamed and red before, and began to be of a more duskish colour, now turn yellow; this yellowness also soon appears round the mouth, eyes, temples, and neck, and soon after diffuses itself all over the body. This total yellowness is so far from being always an encouraging prognostic, as Dr. Town says, that it most commonly, on the contrary, proves a mortal symptom, as when it comes soon on, it shows a greater colliquation and dissolution of the blood, and a gangrenescent state of the fluids. I grant that this yellow suffusion of bile upon the surface of the body has, at a chance time (though very seldom) proved critical; but then it did not come on till the eighth or ninth day, nor appear till the coma, and all the other bad symptoms began to abate, and as the yellowness increases, they all decrease;—but this very rarely happens. But, this yellowness is most commonly quite the reverse, especially when it comes soon on, and is not only symptomatical, as it arises from the colliquated, putrid, dissolved,

and gangrescent state of the blood; but it too often ushers in all the last and most fatal symptoms of the disease, viz. a deep coma, a low vermicular and intermitting pulse, great hœmorrhages from various parts of the body, a delirium with a laborious and interrupted respiration, great anxiety, deep sighing, great restlessness, and subsultus tendinum, great coldness of the extreme parts first, and then all over the body, a faltering of the speech, tremors, convulsions, and death. So that from the first appearance of this symptomatical yellowness, we may say, the patient is in the last stage of the disease, how soon soever it may come on, though in some it has not come on till the eighth or ninth day, and then is usually critical, but this very rarely happens.

256. "It has also been observed that in some sanguine, strong constitutions, when they have not been bled to a sufficient quantity in the first, second, or third days of the disease, to restrain its violence, the pulse has continued full, strong, and rapid, but never hard, the face flushed, eyes inflamed, the tongue dry, with great thirst and heat, till the second or last stage of the fever is come on, when the pulse has suddenly sunk, and death has soon after ensued. Yet, in others, who seemed to have plethorick habits, the tongue has been moist all along, though they have been delirious most of the time, and the heat of their skin, and the strength and quickness of their pulse, has continued, after the first stage of the disease was

over, pretty near to that of their natural state in health, till within a few hours of their death ; and when they have had a coma on them, one who is not well acquainted with this fever, would, from their pulse, heat, breathing, and other symptoms, have taken them to be in a natural sleep. Others, when the pulse has begun to sink, and the fatal period seemed to be just approaching, to the great surprise of all present, the patient has recovered his senses, sat up and talked pretty cheerfully for an hour or two, and in the midst of this seeming security, has been suddenly seized with strong convulsions, and died immediately."

257. " I mentioned hœmorrhages before, for in the latter stage of this fever, the blood is so attenuated and dissolved, that we frequently see it flowing, not only out of the nose and mouth but from the eyes, and even through the very pores of the skin ; also great quantities of black, half-baked, or half-mortified blood, is frequently voided both by vomiting and by stool, with great quantities of yellow and blackish putrid bile, by the same ways ; and the urine, which was before of a high ictericious colour, is now almost black, and is frequently mixed with a considerable quantity of half-dissolved blood. The pulse, which was much sunk before, now becomes very low, unequal, and intermitting ; the breathing difficult and laborious, and the anxiety becomes inexpressible, and an oppression, with a burning heat, about the præcordia comes on, though the extremities are

cold, and often are covered with clammy sweats; a constant delirium, and then a total loss of reason, and the outward senses, with livid spots in many parts of the body, especially about the præcordia, and sometimes gangrenes in other parts of the body, which are soon followed by death.

258. "And soon after death, the body appears much fuller of livid, large, blackish mortified spots, particularly about the præcordia and hypochondres, especially the right, which parts seem even from the first seizure to be the principal seat of this terrible disease. And upon opening the bodies of those who die of it, we generally find the gall-bladder and biliary ducts turgid, and filled with a putrid blackish bile; and the liver, and stomach, and adjoining parts, full of livid blackish mortified spots, and sometimes gangrenes, in those, as also in several other parts of the body. And the whole corpse soon putrifies after death, and can be kept but a few hours above ground.

259. "From an attentive consideration of all the symptoms which attend this disease, and a strict examination of the putrid state, and dissolved gangrenescent condition in which we find the blood of those who labour under it, as well as the half-putrified and mortified state in which the body is found immediately after their death: whether this fever proceeds from infectious miasmata, or it arises from the great heat of the air, and water, and the putrefaction of our fluids, &c. from thence, and is thereby *indigenous* to those

countries which are situated within the torrid zone ; or whatever is its *procatartic cause ;* it evidently appears from all the symptoms which attend it, as well as from their putrid effects, that a bilious putrifying diatheses, is actually introduced into the blood and all the circulating fluids of the body, whereby not only the first and second concoctions, or the chylifaction and sanguification of the blood are so disturbed, altered, and changed, that all the humours, and particularly the bile, are by the rapid motion of the blood, and greatly increased heat of the body, so inquinated with a putrid bilious acrimony, which, in a little time, so attenuates and dissolves the texture of the blood, that it runs off by the various excretory passages and the pores; but also *errores loci fluidorum* are produced, whence the brain is affected, and all animal functions so disturbed and altered, and the texture of the blood is so dissolved, that all the humours of the body are almost changed into a putrescent lethiferous ichor, (if not timely prevented,) which must inevitably end in death.

260. " That the bile has a great, if not much the greatest share, in producing this fever, and this putrid gangrenescent state of the blood, I think, is too evident to be doubted, notwithstanding what a late ingenious author* has said to the contrary ; for it is well known that the bile will putrify, both much sooner, and to a higher degree

* " Dr. Warren on this Fever."

of acrimony, than any other humour in all the human body, and also will dissolve the texture of the blood much sooner: and we not only observe that a great quantity of deep yellow, and almost black, putrescent, acrid bile, is constantly discharged both upwards and downwards, even from the first beginning of this disease, and the suffusion of it all over the body afterwards, confirms the same; and we also find upon opening the bodies of those who die of it, that the gall-bladder, and its ducts, are always found turgid, with a porraceous, blackish, putrescent bile; and we likewise observe, that the hypochondres, especially the right, and the adjoining præcordia, are the most affected throughout the whole time of the disease, which is the seat of the liver and gall-bladder; insomuch that the same author says, '*it seems to be the seat and throne of this disease:*' and I have always observed, that the sick cannot bear the least pressure of one's hand upon the parts where the gall-bladder and biliary ducts, and the liver are situated.

261. "No doubt but when the blood is once inquinated by this putrescent bilious humour, that the great relaxation of the solids, and the great diminution of the momentum of the fluids, subsequent to, and arising from thence, and which generally comes on in the third day, or soon after, with the second state of the disease, does greatly contribute to produce the putrescent diathesis, and increase that gangrenescent disposition of the

fluids and solids, which always attends the latter stage of this disease.

262. "From all the above-mentioned symptoms, and from the nature, disposition, and state of the humours, which are consequential to them, we must endeavour to deduce our indications and intentions of cure, since we have none of the ancients to follow, or to direct us, nor yet to appeal to, as none of them has ever mentioned, or probably ever seen this disease; neither have I seen any modern author, except the above-quoted author, from whom I must beg leave to dissent, because I cannot think as he does, wherefore I drew up the following intentions of cure which are :—

263. "*First. To moderate the too great and rapid motion of the fluids, and abate the too great heat and violence of the fever, in the two first days of the disease, as safely and as much as we can.*

264. "*Secondly. To evacuate and carry out of the body as much of that putrid bile, and those putrid humours, as expeditiously and as safely as we possibly can.*

265. "*Thirdly. To put a stop to the putrescent disposition of the fluids, and prevent the gangrenes from coming on, by suitable antiseptics.*

266. "For it is observed that most, if not all who die of this disease, generally have, and die of mortifications, either internally or externally, or both."—(*Hillary on Diseases, &c.* pp. 144—156.)

267. Dr. John Hunter served in Jamaica as inspector of hospitals, in 1781—1783, and his observations on very inter-tropical diseases are valuable.

268. "*Of the symptoms of the remittent fever.*—Persons at all times of life, from infancy to old age, are subject to the remittent fever. It attacks, however, men oftener than women; young children till they reach their third or fourth year, are not so liable to it as afterwards, and old people are likewise less subject to it. This probably is not owing so much to there being any thing either in any age or sex that resists the fever, as to persons of the above description being less exposed to the causes of it. It is most violent and most fatal, in those who are lately arrived in the island, and they are, at their first coming, more subject to it than afterwards.

269. "The usual manner in which it shows itself, is as follows:—There is uneasiness with languor, followed by a sense of chilliness, or cold shiverings, which are soon succeeded by great heat, particularly in the palms of the hands, and forehead; head-ache, great loss of strength, sickness at stomach, and frequently violent vomiting. Phlegm, or what was eaten at the last meal unchanged, is first brought up, and afterwards bile, yellow or greenish. The pulse is quick, and at first small; it soon becomes full, and is seldom hard. There is not unfrequently much pain in the small of the back, or a sense of

soreness in some of the limbs, which is sometimes diffused all over the body, as if it had been bruised. Restlessness, great anxiety, oppression at the breast, and frequent sighings are common symptoms, and sometimes rise to such a height, that the sick appear to labour greatly in their breathing. There is not, however, any difficulty in distinguishing those symptoms from laborious respiration, depending upon a local affection of the lungs. In the latter, the difficulty of breathing is uniform, whereas in the former, both the expirations and inspirations will, for two or three times together, be natural and easy, and immediately after become laborious and unequal, and so on alternately. The vomiting is sometimes constant and violent, especially in the worst kind of the disease; and the blood being frequently in a dissolved state, is forced into the stomach, and thrown up, forming what has been called, by the Spaniards, the *black vomit*. The blood is said sometimes to tinge the urine and saliva, and even to issue from the pores of the skin, none of which appearances I have ever seen, though in the most unhealthy parts of tropical climates, when diseases are aggravated by the fatigue and hardships attending troops on actual service, they are reported to occur, and not unfrequently. As the heat increases, the face gets flushed, the senses are more affected, and the patient often becomes either wild and delirious, or drowsy and lethargic. These symptoms, after a time, are succeeded by

a sweat, which is often profuse, and gradually procures an abatement of the fever.

270. "The length of the fit varies considerably. It sometimes terminates in six or seven hours, though its duration is more commonly from fifteen to twenty hours. In some instances, it extends even to thirty-six and forty-eight hours; and I saw one example of it continuing three complete days, without any marks of remission. The several stages of the fit, known under the names of the cold, the hot, and the sweating, vary likewise considerably in their duration. The cold stage is generally very slight, and often there is none at all, which I believe, in some measure, is owing to the heat of the climate, for, I observed that the rigors and shiverings were more considerable in the cold than in the hot months. I have, however, in a few instances, seen the cold fit last above half an hour, with severe rigors all over the body. The hot stage constitutes by much the longest part of the paroxysm, and is generally terminated by a sweat. This is not, however, always the case, for the fever sometimes remits gradually, without any sensible increase in the perspiration; nor is every sweat that occurs, during the hot fit, even though profuse, critical as to a remission; for a great perspiration will sometimes continue one or more hours, and go off without at all relieving the symptoms.

271. "The tongue is at first white, and if the fever be violent, and consist of two or three

fits, it grows brown and dry, and even becomes chopt. The thirst is commonly great, though in some cases it is not increased. The urine is little changed by the fever, being always high-coloured in warm climates. With the flushing of the face, the eye often becomes muddy, and even red, as if inflamed, and this appearance keeps pace with the progress of the paroxysm, the redness being greatest when the fever is highest, and gradually decreasing as the remission takes place. Hitherto the difference between the fever of this island, and those occurring in other countries, is not very considerable; but the sudden aggravation of the symptoms, as appears in an immediate and almost total loss of strength, a great degree of stupor, and even total insensibility, followed by convulsive startings of the tendons, and death, marks an extreme degree of violence, such as is rarely observed in the fevers of other countries at so early a period; for all those symptoms will sometimes happen during the first paroxysm, and even in the space of twelve hours. One of the worst symptoms, which frequently occurs, is incessant retching and vomiting, with great pain at the pit of the stomach. It not only harasses and weakens the patient, but, by rendering it impossible to make use of any medicine, either for the immediate relief of the fever, or to prevent a subsequent paroxysm, is attended with the most imminent danger.

272. "The remissions vary much in their

duration; some do not last longer than one or two hours, though more commonly they continue ten or fifteen, and sometimes thirty, and even thirty-six hours. The fever, in some cases, assumes the quotidian type, and has an exacerbation every day at nearly the same hour, but generally it observes no regularity in the times, either of access or remission. The remissions are more or less complete, sometimes they amount almost to an intermission, though much more generally there is only an abatement of the symptoms. The pulse becomes slower, the skin cooler, and the head-ache, restlessness, and sickness diminish, or go entirely off. Yet it sometimes happens that the remission is not so strongly marked, and is only to be distinguished by an abatement of the head-ache, and restlessness, with some diminution of the quickness of the pulse, and of the heat of the skin. In judging of the heat of the skin, the feel of the sick person's hand is not to be trusted to; for, the perspiration rising freely in vapour from every pore, gives a coolness to the hand, which would lead to an erroneous opinion. The feel of the cheek, and particularly the forehead, is what best marks the degree of febrile heat.

273. "The sleep, during the remission, is disturbed, and procures but little refreshment.

274. "The second fit is always more severe than the first, if nothing has been done to check the progress of the fever. It is commonly without any cold stage, or even sense of chilliness. All

the symptoms run higher ; the skin is hotter, the pulse quicker, the head-ache greater, the senses more confused, the thirst often intense, and a delirium or coma comes on more quickly and with greater violence, and sometimes terminate in convulsions and death.

275. " As the delirium approaches, the eyes look wild, the voice becomes quick, and it changes from the natural tone to a sharper ; there is also extreme eagerness in every motion, with an incessant tumbling, and change of posture. Wild imaginations of impending danger, of dreaded evils, or of important business, calling for immediate execution, seize the unhappy sufferers, and impel them to efforts and exertions equally violent and sudden. Restraint, though necessary, renders them outrageous, they tremble all over, and are shook with momentary convulsions. From this state of excessive agitation, in which the recollection of persons and of things is equally confounded, the sick gradually sink into a *stupor*. Articulation becomes difficult, the voice falters, and instead of speech there is only a muttering ; they cannot be roused to give an answer, and the convulsive tremors and startings still continue. With all these symptoms, and with the pulse beating upwards of one hundred and thirty times in a minute, the fever will sometimes remit, the patient recovers his senses, and if advantage be taken of the remission, life may often be preserved.

276. "The sick sometimes sink into a lethargic state, without any previous delirium. They are roused with difficulty, and can only give an answer to the simplest questions, after which they immediately fall again into a state of insensibility. They can give no account of their feelings, or of the manner in which they were seized, and in general have not the smallest recollection, not even as of a dream, of any person, or thing that has been before them, while in that situation.

277. "It is, however, to be observed, that though both delirium and coma are frequent occurrences, they are not essential to the fever, which often exists in all its violence, and proves quickly fatal, without the senses being materially affected. There is, indeed, a way in which the fever terminates fatally, and that often, without raising even a suspicion of danger. The violence of the fit begins gradually to abate, the skin grows cooler, the pulse slower, and the senses, if disordered, become more clear and distinct. These are flattering symptoms, and in such a situation, danger is scarcely apprehended, yet, if the strength be gone, if the countenance be languid and sunk, if there be a total indifference to food or nourishment, even though not rejected, and an aversion to every exertion, even the smallest either of the mind or body, and if the pulse at the same time that it becomes slower, is also weaker, though the patient complain of nothing, he is fast

approaching to his end, and dies in a few hours; his pulse, all the time, indicating no danger, till excited by the pangs of death. When the recollection is tolerably distinct, which it often is, the patient is frequently the first to give notice of the approaching danger, from certain sensations of internal weakness which he feels. When such a termination happens, it is commonly after the second or third fit, particularly when the disease is very violent, and affects those who are lately arrived in the island.

278. "When the fever is thus severe, a symptom often occurs, which has given a name to the disease, as if a distinct one; I mean a yellowness of the eyes and skin, from which it has been called the YELLOW FEVER. This happens chiefly to new comers, their fevers being the worst; but it is not confined to them, for it appears sometimes in the natives, and in those who have resided several years in the island. It is produced by the addition of a jaundice to the other symptoms of the fever. I call it jaundice, because in no respect did the yellowness appear to differ from that which usually accompanies that disease. It is first to be observed in the eyes, and next tinges the neck and shoulders, and afterwards the whole body. The urine is also of a very deep colour, and stains linen rag yellow, like that of a person in the jaundice. There appeared no reason for suspecting a dissolution of the blood to be the cause of the yellowness, for it happened fre-

quently when no marks of such dissolution were to be found; and when they were present, they were not necessarily accompanied with a yellowness of the skin. They never, indeed, occurred to me together, from which I would not infer that they never are combined, but only that they are not connected as cause and effect. The fever was always violent, and generally accompanied with great pain at the pit of the stomach, extending over the epigastric region, and with severe retchings. It was characterized by the usual exacerbations and remissions, and had no peculiar symptom, except the yellowness, to intitle it to be considered as a distinct disease.

279. "This change of colour in the skin, though most common in the fevers of the West Indies, is not confined to them, being frequently observed in other warm climates. There are instances of jaundice accompanying the fits of intermittent fevers in England, and I have seen two examples of yellowness or jaundice in the hospital or jail fever*. The yellowness in the yellow fever appears sometimes towards the end of the first fit, though more commonly after the second or third; and the unexpected fatal termination of the fever, mentioned above, happens both when this symptom is presented, and when it is not. I will not attempt to give any explanation of it at present,

"Haller, *Opera Minora*, Vol. iii. p. 374, describes an epidemic fever in which the body turned yellow."

meaning to confine myself to a plain narration of facts, and to reserve for another place whatever relates to matter of opinion or conjecture.

280. "If the patient should survive even a third or a fourth fit, he remains almost totally deprived of strength, and frequently has still other evils awaiting him, as an attack of dysentery, which often proves fatal to such as have been previously reduced by the fever. It ought, indeed, to be observed, that it is no uncommon thing for the bowels to be affected with griping or purging, accompanied with dysenteric stools, during the fever. This combination of dysentery and fever would seem to depend upon something in the season, for in one year it shall be very common, and not so in another. At all times, however, the fever, if neglected, or ill-treated, is apt to terminate in dysentery, especially in soldiers.

281. "Convalescents are subject to relapses, which happen often in this fever, and are no less dangerous than the first attack. They are most frequent during the sickly season, and are readily produced by fatigue, exposure to the heat of the sun, or any irregularity. Sometimes they recur at various intervals, as six or seven days, fifteen or sixteen, or twenty-five and thirty days; and this for a long time together, but without any great exactness in their periods, and each return commonly consists of one, two, or more fits of the fever. Under such circumstances, the disease often produces dropsy, and enlargements and

indurations of the liver or spleen, which in many instances terminate in death.

282. "The violence of the symptoms, and degree of danger, such as above described, take place chiefly in those who are but lately arrived in tropical climates, and during the most sickly season of the year. In the natives, and those who have resided some time in the island, the fever is by no means so formidable, being neither so violent in its onset, nor so rapid in its progress. It often begins in slight feverish fits, one or two of which shall pass, and the patient pay little regard to them; yet a third or fourth shall not be much short of the violence of symptoms already described. It sometimes begins as a regular intermittent, and is changed into a remittent, by the fits gradually getting longer, and running into one another.

283. "Though the fever be more gradual in its approaches in the natives and old inhabitants, yet, when it rises to a great height, they are longer in recovering their strength, and in getting the better of the other ill-consequences of the disease, than even new comers. They are likewise more liable to relapses at various intervals, as two or three weeks, or as many months; but they are not so violent as in new comers. They consist usually of one or two fits of fever, accompanied with sickness, retching, and frequently a copious discharge of bile, from whence such patients are commonly said to be bilious, the bile being supposed to be the cause

of the disease. The attacks are generally preceded by loss of appetite, indigestion, and flatulence in the stomach and bowels. In the intervals, they sometimes enjoy tolerable health, even for years together; more commonly, however, repeated attacks gradually weaken the powers of digestion in the stomach, and occasion a remarkable loss of flesh and strength. The complexion grows pale, sallow, and even of a lemon-colour, and the whites of the eyes are clearer than common. In this situation, one fit more violent than the others, shall perhaps put an end at the same time to the patient's life and disease. Such is the usual manner in which the disease proves fatal in the natives, and old inhabitants; yet, both in them and in new comers, it often admits of a speedy cure after two or three fits, and the patient soon recovers completely his ordinary health.

284. "It is worth remarking, that the fever sometimes appears in a very slight way, with languor, loss of appetite, some degree of headache, disturbed sleep, and whiteness of the tongue, the patient being able all the while to go about his usual employment. In symptoms so moderate, the presence of a fever is hardly acknowledged, though the readiness with which they rise into a severe disease, on the least irregularity, or any anxiety or distress of mind, leaves no doubt of the nature." (Pp. 63—77.)

285. Dr. Chalmers practised in South Carolina, between lat. 31° and 35°, a variable moist climate, from 1750 till 1760, and describes a form of fever rendered peculiar, apparently from an association with scurvy.

286. "*Of the putrid bilious fever.* When the weather is very warm and wet withal, the putrid bilious fever sometimes appears here in the summer, and with such symptoms of a confirmed putrefaction, as to differ but little sometimes from the *pestilential yellow fever.* In the former fever, some patients incessantly throw up bile of an eruginous colour; others have frequently and excessively large dusky-coloured serous discharges downwards, which smell very offensively; these two evacuations, often proceeding together, at the same time, and in the same patient. About the fourth or fifth day of the disease, the humours which pass by vomiting, have a putrid scent. But the icteritious appearances in the eyes and skin, more especially about the neck and breast, are not so strongly marked on those who have a *diarrhœa.*—The prostration of strength is sudden and great, and the breathing anxious and redoubled in this fever; the belly also being much inflated if it is not sufficiently loose; and when the stools are large and watery, so rapidly do the secretions proceed, that the humours may plainly be heard rushing along the course of the intestines, with such a murmuring noise, as waters in shallow rivulets make in passing through pebbles.—In

either case, the tongue is white, parched, and dry, or rough and black, as if it were scorched, unless where hæmorrhages attend, for then blood is constantly spurted out, so that were the tongue, gums, and insides of the cheeks to be wiped clean, the blood would immediately ooze out, this fluid then having such a cadaverous smell as carcases emit when in the first stage of putrefaction, and blood likewise frequently issues from the nostrils. At this period of the disease, the patient complains but little of sickness or pain, though he be sometimes pretty sensible ; but for the most part, a fatuity attends, so that in giving answers to whatever is asked of him, his replies will be blended with notions that are quite foreign to the purpose. Though few will recover from such a state, yet our endeavours for their relief must not be neglected.

287. " Much rain having fallen throughout the summer of the year 1770, the winds commonly blowing from the west or south-west, and the weather so warm, that the mercury often rose to the 96th degree of the thermometer, the putrid bilious fever appeared in August, and continued till the month of October following. During this season, some were suddenly attacked with a severe rigor at once ; but, for the most part, the patients had alternate chills and flushings, sickness at the stomach, a disordered pulse, head-aches, and an irksome lassitude for some days, when a violent shivering introduced the fever, with excessive

pains in the loins, and all over the body, to which the symptoms recounted above, succeeded by degrees, if they were not prevented. The fever, however, was not at all times equally severe ; for it had remissions at particular hours, and often the intermissions were tolerably distinct, though a great weakness and languor continued, and the patients also were then bathed with clammy sweats, the tongue likewise being still black, parched, and dry, even during the best intermissions.

288. " The vomitings that happen on their own accord at the beginning of the disorder, ought to be promoted with repeated draughts of warm water, till it returns clear, unless the patient be too much fatigued before this point is gained, as was the case sometimes, owing to the excessive secretion of the bile. If the belly is bound after the stomach is cleared as above, it should be cautiously loosened with manna and sal-catharticum dissolved in a weak decoction of serpentaria, and as soon as an opportunity offers, the Peruvian bark, with the serpentaria, made in a decoction with water, should be frequently given in the remission or intermission. But as *this fever* ought to be checked as soon as possible, though the patient takes two or three spoonfuls of the above decoction every hour, double the quantity must likewise be injected by way of clysters every second hour, and whenever the patient can bear the bark in substance, three or four drachms of *its* fine powder, should be added to six or eight

ounces of the mixture which the patient takes. But, whichever way this decoction is used, it ought to be made warm with aromatic oils, and acidulated with alum or spirit of vitriol.

289. "When the stools are frequent, watery, and large, they ought to be checked immediately if possible. For this purpose I commonly directed a pretty strong decoction of serpentaria and cort. quercus to be made with water, to six ounces of which, either forty drops of the acid spirit of vitriol, or one drachm of alum, and ten or twelve drops of laudanum being added, one spoonful of the mixture was ordered to be given every half-hour, till the purging abated. And whenever an opportunity offered, the cortex and serpentaria were administered in the ways we have already mentioned. However, laudanum is by no means to be given when the patient is greatly exhausted, the warmest cordials and antiseptics being then necessary, though all may avail but little.

290. "As soon as the icteritious colour appears, as a proof that the fluids are tending towards a putrid dissolution, or rather that this has already commenced, the mineral acids must be used more freely, so that between morning and evening, two drachms of alum should be dissolved in so much of the decoction as is designed for four clysters, and one drachm of it ought also to be added to six ounces of the mixture that is swallowed, at which rate the patient sometimes took six drachms of this mineral styptic in the space of twenty-

four hours, when his condition allowed the medicines to be continued throughout the day and night; nor was this course remitted for some days after the fever ceased, and even afterwards the bark was taken every second hour for the space of a week, more especially if the weather proved warm.—For, as in such a season the heat and moisture of the air counteract the virtues of the bark, by relaxing the solids, and attenuating the fluids, the use of that medicine ought again to be resumed, at the end of another week.—For, indeed, this course ought to be pursued in all summer and autumnal intermittents, the rule being, to take the above quantity of the febrifuge at least once every other week, till strength is fully regained, and, in the mean time, excesses and irregularities of every sort ought to be avoided, though the diet and drink should be nourishing and cordial. But these things have been mentioned before.

291. "In the bilious fever we now speak of, the use of wine is indispensably necessary, nor can the quantity of it be assigned; for the sighing and redoubled respiration, the excessive languor, muttering low sort of delirium, and want of heat in the extreme parts, together with a clamminess on the backs of the hands, or more general cold sweats, plainly point out the great want of excitement in the vital and animal functions.—Red port wine may therefore be given; punch, and other spiritous and vinous fermented liquors of the

greatest strength, ought to be liberally allowed in these cases, *with this only proviso*, that the head be not too much affected thereby.

292. "I should have mentioned in a more proper place, that, though in the remission and intermissions, the tongue continued black and crusty, yet without regarding this symptom of a spasm acting violently on some parts, the cortex must still be administered, the great aim here being to preserve the body from that corruption, towards which it is rapidly verging on such occasions.

293. "The floor of the chamber in which the patient lies, ought now and then to be sprinkled with vinegar, and a free air admitted when the weather is sultry. It will likewise be necessary to dispose the crusts with which the tongue and gums are covered to a more speedy separation, by the patient's keeping some sage-tea, moderately acidulated with vinegar, or a little gruel mixed with wine, for a while in his mouth often, and spurting it out again. Nor needs he to be confined to the house after he is able to take an airing in a chaise, though the yellow colour of his skin hath not yet disappeared; for if bile contribute to this suffusion, it will gradually be separated anew from the blood; but in the mean time, care must be taken to keep the belly loose, that the gall-bladder may be constantly discharging its contents in a moderate manner, whereby the secretion of the bile from the fluids will be more freely promoted. But, if the yellow colour of the skin was owing to

too great an attenuation of the blood, exercise, and a free air, will contribute much to its acquiring a better consistence." (Pp. 163—167.)

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294. Dr. Rush gives the following abstract:— "At Philadelphia, in the year 1762, in the months of August, September, October, November, and December, the bilious yellow fever prevailed after a *very hot summer*, and spread like a plague, carrying off daily for some time upwards of twenty persons.

295. "The patients were generally seized with rigors, which were succeeded with a violent fever, and pains in the head and back. The pulse was full, and sometimes irregular. The eyes were inflamed, and had a yellowish cast, and a vomiting almost always attended.

296. "The third, fifth, and seventh days were mostly critical, and the disease generally terminated on one of them, in life or death.

297. "An eruption on the third or seventh day over the body proved salutary.

298. "An excessive heat and burning about the region of the liver, with cold extremities, portended death to be at hand."—(*Rush on Yellow Fever*, p. 13.)

299. The remedies used were bleeding, purging, cool air, cold drinks, cold applications, and regimen.

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300. Dr. Chisholm served many years with the army in the West Indies, and his name is high on the list of distinguished contributors to the history of disease. He observes :—

301. " In whatever manner the yellow remittent fever approaches, its symptoms and progress, when formed, are uniform, and more or less rapid and violent, according to the circumstances of temperament, assimilation to climate, and the activity and power of the predisposing and exciting causes. When the fever is formed, it is characterized by a violent pain extending to every part of the head, pains in the lower extremities, stretching the whole length of the thighs and legs, and although severely felt at the calves, never confined exclusively to that part ; pains in the lumbar region, frequently of a violence exciting inconceivable torture ; an oppression at the scrobiculus cordis, attended with great anxiety, and frequently a sense of fulness, distension and obtuse pain in the right hypochondrium. It is also distinguished by an uncommon redness and flushing of the face, by such a turgidity of the blood-vessels of the eyes, as gives them a very highly inflamed appearance, and occasions very uneasy sensations on the admission of light, and, finally, by a singular expression of countenance, which conveys the idea of incipient alienation of mind.

302. " The heat of the surface, and the state of the pulse, are, in a great measure, regulated by the exacerbations and remissions, the periods of

which are not, however, by any means certain and fixed. During the former, the surface feels excessively hot, generally of a degree varying from 102 to 112 of Farenheit, dry and parched; and the pulse is generally full and rebounding, varying from 100 to 140 strokes in the minute. During the remission, the surface is restored to nearly its natural temperature, and the skin acquires some degree of softness and moisture; the pulse also becomes considerably slower. It is to be observed, however, that as the disease advances towards a fatal termination, more especially the heat of the surface, during the exacerbation, becomes pungent, and leaves a most unpleasant sensation on the fingers after the touch; and the pulse, with its former quickness, is also feeble, tremulous and intermittent.

303. "During the remission, at this period, instead of the natural temperature, the skin acquires a most unpleasant coldness, and feels as if bathed in a clammy fluid, whilst great internal heat is remarkably perceptible at the præcordia. The exacerbations and remissions are then, too, more frequent, less distinct, and the former more particularly, of shorter duration, that is, the vital powers lose so much of their energy, as to produce but feeble excitement, and nature, overpowered, is incapable of resisting the approaching dissolution of the system. Notwithstanding this state of the body, hæmorrhage is rather an uncommon phenomenon, in yellow remittent fever, and in-

stead of vibices and blotches, resembling the suffusion after a severe blow, the whole surface acquires a deep yellow colour, and numerous patechial eruptions are thrown out. The period at which this discoloration of the surface takes place, determines, with wonderful precision, the future event. If this happens on the second, third, fourth, or fifth days, the most fatal prognostic may be founded on it; if, on the contrary, it does not appear till the seventh, the apprehensions of a fatal termination are considerably lessened, or may be altogether removed.

304. "Thirst and absence of constipation may be justly considered as distinguishing symptoms, no period, except perhaps towards the close of life, being exempt from the former, and the bowels being open at all times, unless restrained by medicine. In fact, diarrhœa is frequently a most dangerous circumstance of the yellow remittent fever, and often prevents a sufficient retention of the only remedy which has been found adequate to arrest the progress of the disease. The exacerbations, I have said, in the advanced state of the disease, when no favourable change has as yet been perceived, are more frequent, but of shorter duration;—they are then, too, divested of those pains which distinguish the preceding periods, and are marked with wild, sometimes furious, delirium, and exertions of what has been happily called morbid strength. The balls of the eyes, which were, hitherto, red and inflamed, now assume a very

different aspect ; an exudation of coagulable lymph giving them the appearance, in many instances, of one uniform gelatinous mass of a greyish colour. But the irritability of the iris seems, at no period of the yellow remittent fever, to be suspended, having never observed permanent dilatation of the pupils.

305. " The remissions in the advanced state, are further distinguished by coma, sighing, a flowing of tears, faintings, subsultus tendinum, hiccup ; —but, during this state, when the powers of life seem thus prostrate, the voice does not appear to undergo a similar change, being strong, full, and as sonorous as in health. The vomiting, which is one of the most alarming and dangerous of the symptoms of this fever, although not peculiar to it, is sometimes concomitant with the accession of the first exacerbation, and increases as the fever proceeds ; but, in general, although in almost every instance there is a certain degree of nausea present from the beginning, yet vomiting does not come on, and become a dangerous symptom, until about the third day. From that period, unless signs of a favourable change should take place, it becomes every instant more urgent, and at length is accompanied with what has been improperly considered as the diagnostic of yellow, remittent fever, a discharge of a black or brownish coloured fluid, of the consistence of coffee grounds.

306. " Before the black vomiting comes on, the discharged fluid is sometimes bilious, and has the

bitter taste and the yellow or greenish colour of bile; and is frequently in consistence ropy and glary. From the excessive pain at the stomach, which accompanies this vomiting, it is presumable that an inflammatory state of that organ, terminating in rupture of the more minute blood-vessels, and in gangrene, is the principal cause of the symptom, and gives the black colour to the fluid discharged. In the progress of the disease, the tongue, fauces, and gums, undergo morbid changes, but undistinguishable by peculiarity. A suppression of urine, attended with pain above the pubes, almost always happens late in the disease; but no uncommon morbid change in the state of the bladder or kidneys has been remarked on dissection. The urine, as well as the perspired fluid, are deeply tinctured with the yellow colour. Death takes places in this fever, generally without violent or convulsive agitations of the body; and at that awful crisis there is more frequently a placidity of countenance and a tranquillity resembling sleep, in which the patient expires: — a termination the more singular, as the preceding periods exhibit an uncommon anxiety, and perturbation of mind." Pages 34, 35, 36.

307. The remedies are, early bleeding, purgatives, mercury to excite ptyalism, mild opiates to arrest retching, cold affusion, cool air, neutral salines, cinchona, wine.

308. *Symptoms of congestive nervo-bilious fever as they are usually observed in the East Indies.* After slight chills or rigors (in some cases only discovered by inquiry,) febrile heat occurs with partial and irregular remissions. The pulse is soft, not large, from 98 to 130. The tongue is at first but little affected; it afterwards successively becomes clammy, furred, then red, sulcated, and ultimately dark and dry. The skin is at times hot; the hands and feet cold, and in other cases the surface is cold with profuse sweats; the head is always hot. The cold surface or extremities with occasional fainting or convulsive fits at the commencement, is diagnostic of this disease in its severe form. When the surface is cold with profuse sweats, the skin does not turn yellow; nor does it in every case where there is heat, but yellowness occurs only in those latter cases. Pain of the head is never wanting, and the patient often says, "'tis heavy as if filled with lead:" there is a sense of burning heat at the epigastrium, with constant retching, vomiting, and thirst. As in cholera, when the skin is cold and pouring forth cold sweat from every pore, so here, when the skin is precisely in the same state, the patient complains of burning and heat of the surface, and force alone will prevent him from throwing off the bed-clothes. There are intense restlessness and jactitation, the conjunctiva is injected, and the eye, from bright, soon becomes heavy like that of a person who has taken a quantity of wine. The bowels are always costive,

especially in the earlier stages. The putrid symptoms, that mark the disease in the West Indies, &c., do not occur in the East.

309. *Pathology.* It appears, at least from my dissections, and from a physiological analysis of the symptoms, that this fever is formed by an association of several morbid states. 1st, Inflammation of the interior surface of the arteries. 2dly, Cerebral congestion. 3dly, Congestion and irritation of the envelopes of the ganglionic system. 4thly, Congestion and irritation of the inferior twenty-four inches of mucous membrane lining the ilium. 5thly, Gaseous distension of the ascending and right arch of the colon that presses on, displaces, and folds the stomach to the left. 6thly, Hepatic congestion. 7thly, In some countries, a putrid state of the fluids. The inflammation of the arteries, and congestion of the cerebrum, of the liver, ganglionic system, and the lower part of the ilium, are all branches from the same stem,—that is, the congestion of the ganglionic system taking place, it follows that the movements of the heart, and the circulation in the capillary vessels, should become deranged, because they are under the control of those nerves. The very intimate connection between the pulmonary and cardiac plexuses, and their extension to the stomach and solar plexus, explain why malaria, acting on the lungs, exerts an immediate influence upon the pulmonary, cardiac, gastric, and abdominal plexuses.

310. *Progress.* This necessarily varies with the

treatment. In the first case that came under my care, the patient retained his ordinary appearance and manner so perfectly that, on the third day, I believed he was doing well ; the other gentlemen in consultation,* had previously seen the disease often, they pronounced it hopeless, and were right. The next two cases were also fatal. In all three, early bleeding was neglected, early advice not having been taken. Purgatives and calomel apparently had not time to effect salutary changes. Sinking, vomiting, and burning at the epigastrium were not relieved by blisters. Costiveness, twitchings, slight convulsive fits or faintings occurred and hurried them off; the disease always terminating by cerebral effusion. In one case, which was attended by heat of the head and trunk, but cold hands, the body became yellow, and there was a very near approach to the black vomit. Indeed, it was most probably that to which a more experienced individual than myself would have given that name. On the contrary, very early general and local bleeding have usually arrested the disease, and mercurials, purgatives, &c., restored the vascular, to the control of the nervous, system. Counter-irritants then produce their full effect, and contribute powerfully to cause an entire remission of the febrile action, by removing local irritation to the surface, and equalizing

* Dr. George Alexander, Supernumerary Surgeon at Penang. Dr. Henderson, Surgeon of the Penang Establishment.

the distribution of blood to the various organs and tissues. If active remedies are deferred till the end of the second day, the case will be very unmanageable under the best course of subsequent treatment.

311. The tendency of the disease to terminate rapidly by cerebral effusion renders the most prompt and efficient measures necessary; and unfortunately it mostly occurs that, the stage of invasion being peculiarly mild, without premonitory signs of any violence or apparent danger, the patient sinks and dies in a few hours with little or no indication of suffering, and, except to the experienced, without evincing dangerous symptoms. One individual died at table, playing chess, having insisted that, being cool, he could not have fever, and that he only felt weak. Another gentleman died the third day, waiting for his supper. Usually, however, there is a short comatose period, effusion taking place between the cerebral convolutions. I apprehend that in those cases of very sudden death, when the termination is not produced by sloughing or gangrene of some abdominal viscus, effusion takes place chiefly about the base of the brain.

312. The supervention of jaundice is a contingency less important perhaps than has been supposed, and does not always accompany the disease; it is owing simply to the passage of bile into the general circulation. The black vomit is considered to be grumous blood exhaled from the

mucous coat when its vessels are in an extreme state of engorgement and relaxation at the same time. This evacuation indicates a fatal termination, but it is not confined to this disease. The Melæna, or Morbus Niger, was known to Hippocrates, and is familiar to physicians in the present day. Sero-sanguineous fluids are also exhaled from the intestinal surface in dysentery. The exact mode of termination must altogether depend on the viscus to which the determination of blood is directed with the greatest force, or, on the seat and functions of the organ which first becomes disorganized by the process and progress of engorgement. The inflammation of the interior surface of the arteries, of the mucous surface in the lower part of the ilium, and the engorgement of the ganglionic system and viscera, should occupy our undivided attention, and all means calculated to effect a removal of these morbid conditions should be promptly and energetically used. Moreover, it should be clearly understood, that the common bilious fever, by being neglected, frequently becomes a true congestive bilious fever; and again, that this form of fever, in being neglected, or inadequately treated, becomes aggravated, and forms the congestive nervo-bilious fever.

313. *Indications of Cure.* 1st, Reduce the column of blood in the great system of vessels by free general bleeding. 2dly, Relieve the engorged capillaries by local bleeding. 3dly, Determine to the surface, and equalize the circulation by

counter-irritants. 4thly, Employ the cold or warm affusion for the same purpose, as febrile heat or cold of the surface may indicate. 5thly, Relieve gastric irritability by opiates. 6thly, Keep the gastro-intestinal tube free from feculent accumulations. 7thly, Employ calomel freely, to stimulate the liver and to excite ptyalism. 8thly, Keep the gastro-intestinal mucous coat cool and clean by Hillary's neutral saline. 9thly, Relieve the cerebrum from its excess of caloric by shaving the head, and using cold applications constantly. 10thly, Unload the cerebral capillaries by the repeated application of leeches over the sutures, the forehead, and base of the skull. 11thly, If pain of the back is very severe, apply leeches along the spine. 12thly, When remission admits, prescribe quinine, to prevent a recurrence of fever.

314. *Treatment.* In the outset, the head should be shaved, as extensive advantage results from keeping the head cold, which cannot otherwise be so well effected. The rapid tendency of the disease to terminate in cerebral engorgement and death, warrants the prompt employment of the most energetic remedies. If general bleeding has been omitted at first, its subsequent use hastens death; after the first stage, or twenty-four hours, leeches should be largely used. In the case of an athletic European, thirty leeches should be applied around the base of the head and over the sutures, fifteen down the spine, ten to the epigastrium, and five to the anus. Blisters should then be used—

one between the shoulders and one to the epigastrium, the second to be applied when the first is removed. A free dose of calomel ought also to be given, once or twice a day, with or without opium. Half the above number of leeches should be repeated after ten hours, if the pulse, or febrile heat, indicate their use, and strong sinapisms applied to the lower extremities, if cerebral engorgement threatens delirium or coma. In milder cases of congestion, hot mustard baths to the lower extremities are useful. Cold applications to the head, after shaving it in the earliest stage, should never be omitted. General cold affusion is very seldom required in this disease. Mercurial purgatives cannot, with safety, be omitted. The danger subsides when ptyalism occurs, but, unless depletion enables the vascular and absorbent systems to act freely, mercurials will not produce this effect.

315. When a perfect remission occurs, and warrants the use of quinine, it should be used, whether ptyalism has occurred or not. Hillary's neutral saline should be employed, at least three times a day. Leeches, blisters, and sinapisms, ought to be repeated whilst congestion indicates their use, and by no means be discontinued because they have been once or twice inefficaciously applied. On the contrary, they are to be perseveringly repeated, and without loss of time, until the great object—remission of fever, and relief from visceral congestion—is effected. It appears, from all that has been stated as to this very dan-

gerous disease, that its symptoms vary considerably. It follows that the treatment also should vary in a corresponding manner: nevertheless, however it may be modified by constitutional characters, sex, age, circumstances, and climate, the malady terminates either by effusion, ulceration, or gangrene; and all the efforts of science should be directed to prevent these occurrences, and to restore the system to a healthy state. This object can be accomplished only by the remedies already enumerated; and the most discriminating judgment is necessary in selecting them, in regulating their use, and in prescribing them in the succession most appropriate to particular circumstances.

316. MERCURIAL ERETHISM.—*Causes.* The use of mercurial remedies, chiefly calomel.

317. *Symptoms.* Irritability of the stomach and vomiting; great prostration of strength; oppression and sinking, with restlessness and jactitation, characterize this affection. The pulse is from 120 to140, very soft, rather large, and sometimes intermitting. The tongue is furred, white, clammy. The skin is at times covered with profuse sweats, or is occasionally hot and dry. A sense of faintness, and occasionally fainting fits supervene. The patient is bedridden.

318. *Pathology.* The stomach has its mucous coat engorged and irritated, and the envelopes of the ganglionic system are in the same state, occasioning determination of blood from the surface to the interior organs, and great tendency to cerebral engorgement, coma, effusion, and death.

319. *Progress.* If the mercurials are continued, death takes place between forty-eight and sixty hours from the period of invasion by cerebral effusion and coma. But if they are discontinued, and good wines and jellies freely and prudently prescribed, ptyalism will soon set in, and recovery ensues. This morbid condition takes place when the use of mercurials is persevered in, under a peculiar state of the system that will not admit of early ptyalism; and that state seems to be vascular engorgement.

320. *Indications of Cure.* Support the system by tonic stimuli, especially good wines and animal jellies. Subsequently derive the circulation from the cerebrum, or any other viscus that may become engorged, by the use of blisters. Keep the skin open by wearing flannels.

321. *Treatment.* Champagne, burgundy, mild perry, and cider, seem to have answered best in my practice; because with their use no purgatives were necessary throughout the period of treatment. A single small tumbler of good wine arrests the deadly sickness, and the continued use of it, for eight or ten days, will generally suffice. Blisters, leeches, and purgatives, however, may be afterwards necessary. In every case, the mercurials are to be altogether discontinued, wines used, and the head shaved. Very free ptyalism may be expected in a few days.

322. ACUTE INFLAMMATION OF THE HEPATIC ENVELOPES. This takes place frequently by the

extension of disease from the parenchyma to the surface; and when it occurs, acute and severe pain of the part is felt, similar to that which attends other peritoneal inflammations. If this inflammation, however, is observed, unaccompanied by disease of the glandular tissue, the curative indications are comprised in local and general bleeding, sedative evacuants and counter-irritants: in fine, if the membranes only become interested, the disease is a species of peritonitis, and is to be treated accordingly. I therefore pass to disease of the liver.

323. ACUTE HEPATITIS. Causes, Vide Chap. II. Sect. 1.

324. *Symptoms.* Vide Chap. II. Sect. 2.

325. *Pathology.* Vide 77 to 80, inclusive.

326. *Terminations.* Vide Chap. II. Sect. 3.

327. *Progress of acute Inflammation of the Hepatic Parenchyma.* In this condition of disease, the series of changes are similar to those that succeed to inflammation in other deep-seated parts, modified, however, by the nature of its nerves, of its tissue, and the peculiarity of its structure and relations. Increase of volume and of heat, and some tenderness to the touch, are present in hepatitis; but the liver being supplied with nerves from the organic system, the acute pain which the formation of abscess occasions in parts supplied with cerebral, or spinal nerves, is in its case referred to the extremities of the cerebral and spinal nerves connected with those of the liver by inoscu-

lation. The more any part is supplied with sanguineous capillaries, the more it is subject to engorgement and inflammation, and the more certain is the suppurative process to follow in either case. In an inflamed state of any part, the quantity of blood in it is increased, and the circulation is slower; the swollen state of the liver shows that the acini are partially obstructed, the blood impeded, and that the absorbent vessels do not act freely, or do so but partially. If the circulation becomes remarkably slow in any part of the hepatic tissue, then that part must remain in a gorged state, and more or less impervious to the blood which continues to be poured into the portal vessels. This blood passes off, in part, through adjoining vessels, but a quantity of it must remain confined in the vessels leading to the impervious points. In the case of a wound, or any solution of continuity, the processes necessary to re-establishment of union are either simple adhesion or suppuration. It seems plain, therefore, that, in hepatic, as in other abscesses, the impediment to the circulation operates in a similar manner to a solution of continuity, and produces the same result, viz. suppuration.

328. *Indications of Cure.* 1st, Diminish the circulating volume of blood promptly; 2dly, relieve the local inflammation and engorgement, by bleeding, from the adjoining capillaries; 3dly, keep the bowels freely open; 4thly, determine to the surface, equalize the destribution of the circu-

lating blood to all parts, and apply a blister over the liver; 5thly, affect the system by mercurials, and produce ptyalism promptly; 6thly, avoid all circumstances tending to reproduce hepatic engorgement or irritation.

329. *Treatment.* (Vide Chap. V.) General bleeding should be repeated once or twice, according to the severity of the symptoms, and the resources of the body. Local bleeding is the next agent in importance. The second general bleeding should, generally, be less than the first; sometimes it is unnecessary, yet, occasionally, a third bleeding is requisite. If the first is from a free incision, and blood is drawn till deliquium supervenes; and if, at the termination of eight or ten hours, the pulse continues low, instead of a second general bleeding, leeches may be applied over the hepatic region. After general and local bleeding, the use of calomel should be commenced without loss of time. When the leech bites cease bleeding, a large blister is usually applied over the most painful part, but great care should be taken that the pulse is sufficiently reduced, by vascular depletions, before a blister is employed. The regimen and management of convalescence should be strictly attended to, as hepatic diseases frequently relapse.

330. CHRONIC HEPATITIS. After acute hepatitis, congestion of blood in the liver, or hepatic obstructions, have run their course, either healthy action is restored, or the acute symptoms of the early

stage abate, and the patient experiences a fluctuating valetudinarian state, marked by debility and dyspepsy. In this condition of disease, the hepatic function is depraved ; there are many obscure and some distinct symptoms of hepatitis ; and the gastro-intestinal functions rarely continue in a natural state for more than a few days without treatment. The symptoms, attendant on those affections vary with their pathology. The individual frequently continues in a weakly state for many years, and sometimes during life, owing to the disease merging into, what is termed, dyspepsy, in other words, a complex state of disorder.

331. *Causes.* As chronic succeeds to previous forms of hepatic disease, the causes of the preceding complaints will show the origin of chronic hepatitis.

332. *Symptoms* and *Pathology.* The symptoms vary with the stage of the disease, and the pathological condition. Acute hepatitis inefficiently or improperly treated usually terminates in suppuration, one or more abscesses forming. These abscesses may be large or small ; they may occupy parts near the convex surface or the centre of the gland, or the inferior surface, the extreme right or the left, or the anterior or the posterior margin of the viscus. If they occupy the centre, they will be announced by hectic fever and sweats, with tendency to diarrhœa and dysentery, accompanied by great prostration of strength and dyspepsy. Pains simulating rheumatism are oc-

casional concomitants when the abscesses occupy parts adjoining the inferior surface; because the solar and lumbo-abdominal plexuses and ganglia are then more frequently affected in consequence. (Par. 113. Symp. 36, 37. Par. 114. Symp. 38, 39, 40, 41. Par. 115 to 122.) Abscesses may open into the stomach, the duodenum, or the colon on the right, and recovery takes place. If they open into the peritoneal cavity death ensues. When they are situate near the inferior surface, they invariably excite an irritable and irregular state of the gastro-intestinal tube. Abscesses of the anterior margin, or of the extreme right or left usually form adhesions to the abdominal parietes, and the pus either perforates them, or passes by the hepatic veins into the circulation. Sometimes it is removed by opening the abscess, and in other cases it is insinuated between some parts of the abdominal parietes, and passes downward to the groin, the scrotum, or superior part of the thigh. When the abscess occupies the posterior margin: *first*, it escapes into the hepatic veins; *secondly*, it opens into the peritoneal cavity; *thirdly*, it perforates the abdominal parietes and sometimes passes downwards between the lumbar muscles, whence an outlet may be given it by incision; *fourthly*, it perforates the diaphragm.

333. When abscesses are placed in the centre of the gland, the pus either passes through the hepatic veins, or remains and excites occasional or

partial accessions of inflammation and fever; the original cyst being enlarged by ulceration and suppuration, which advance in some cases slowly, in others rapidly. It has been said that the hepatic tissue is not decreased by the occurrence of abscess; and that the pus forces, by its increase, the opposite surfaces asunder. Two facts are opposed to this view: *first*, where the liver has suppurated very extensively, the weight of its remaining tissue has been reduced to one-third, and even one-fourth, nay less. *Second*, the area of the abscesses that form and extend rapidly, are found traversed by the debris of vessels and nerves some inches in length. When abscesses are situate in the convex surface, besides the ordinary symptoms of hectic, the irritation and pressure of the diaphragm, thereby occasioned, invariably interfere more or less with the pulmonary functions. These cases terminate:—*first*, by the removal of pus through the hepatic veins; *secondly*, by perforation of the diaphragm, and passage of the matter into the thoracic cavity; *thirdly*, by insinuation of the pus between the hepatic envelope and the parenchyma, the membranes sloughing from the destruction of their capillary connexions with the organ.

334. *Progress.* The soft hepatic enlargement, decrease of pain, accession of hectic and profuse sweats, sleeplessness, soft pulse, red beef-steak tongue and general debility, evince the existence of hepatic abscess. The consecutive changes are to be carefully kept in view, to guide the selec-

tion of measures best adapted to oppose their progress, and conduct the disease to a happy termination. This leads to the study of changes consequent upon the formation of hepatic abscess. *First*, The abscess may continue to enlarge when the gastro-intestinal tube is overloaded, and the blood-vessels are congested: rigors and febrile movement announce this state. *Secondly*, The abscess continues to enlarge when the hepatic capillary system is in a gorged state; this is manifested by fulness of the pulse, and local soreness. This enlargement may proceed, 1st, to connect one abscess with another; 2dly, to insinuate and form pus between the hepatic envelope and parenchyma; 3dly, to perforate the diaphragm; 4thly, to perforate the general peritoneal cavity; 5thly, to perforate the stomach, duodenum, or colon; 6thly, to perforate the abdominal parietes partially, insinuating pus between some parts of their tissues; 7thly, to perforate the parietes, and reach the surface. *Thirdly*, The number of the acini which are destroyed or become impervious in *hepatic abscess*, decreases in an equal ratio the volume of blood that passes through them to the cava, and when the passage is thus impeded in a considerable degree, the portal trunk cannot circulate its blood, and it therefore is engorged; this morbid condition extending to the vessels coming from the other abdominal viscera. The usual effects observed are, gastro-intestinal engorgement, diarrhœa, dysentery, and ulceration of the

bowels. *Fourthly*, Severe and acute pains, in periodical paroxysms, mostly of the inferior extremities, sometimes of the superior, occasionally of the trunk, and at times variously affecting either two or all three of these, frequently mark this state of disease. Those pains simulate rheumatism, and appear to depend on the degree of irritation extended from the hepatic nerves to the solar and lumbo-abdominal plexuses and ganglia, and communicated, by their inosculations, to the spinal nerves, and referred to their extremities. *Fifthly*, When the circulating fluid is reduced so far as to secure the portal circle from an approach to fulness, and when the vessels of the liver are evacuated by local depletion, low regimen, and the restricted use of fluids; the swelling of the liver subsides, the purulent matter passes into the hepatic veins, and general circulation, and is transmitted to all parts of the body; that which circulates to the kidneys is excreted with the urine from the blood; and that which reaches the brain produces more or less constitutional disturbance, and even death. The effects that I observed were excessive collapse, prostration of strength, cold sweats, and coma.

335. *Indications of cure and treatment. First*, If depletion has not previously been sufficiently practised, the volume of blood should be diminished, especially if the pulse indicates either partial or general plethora. *Secondly*, If there is fulness, soreness, or pain in the liver, empty the

abdominal circle of vessels by the repeated and free use of leeches. *Thirdly*, Derive irritation from the interior to the external surface, by the repeated use of blisters, and effect a due distribution of the blood to all parts. *Fourthly*, Empty the entero-portal and abdominal capillary vessels by leeches applied around the anus and over the abdomen. *Fifthly*, Determine, in a permanent manner, irritation from the liver to the surface, by setons and rubefacients. *Sixthly*, In cases of great debility, with a dry skin, swelling and pain of the liver, promote the capillary circulation by hot poultices over that organ. *Seventhly*, Promote the healthy and continued action of the biliary apparatus by alterative doses of mercurials. *Eighthly*, Avoid abdominal irritation by keeping the bowels freely open. *Ninthly*, Should symptoms of acute hepatitis supervene, resort to depletion, counter-irritants, and mercurials—even to ptyalism, which will occasionally supervene in these chronic cases. *Tenthly*, Determine to the surface, and improve the capillary circulation and functions of the intestinal mucous membrane by the free and repeated use of ipecacuanha. *Eleventhly*, Avoid excesses, and gastric irritation by the prudent regulation of diet. *Twelfthly*, Do not let the vital powers sink too much by a too restricted regimen; but regulate the ingesta according to the wants of the system. *Thirteenthly*, Employ those neutral salines usually most efficacious in promoting the absorption of pus from the liver,

and facilitating its excretion with the urine. *Fourteenthly*, When a projecting soft part announces the approach of pus to the surface, make an incision in it till the coverings are thinned, so that the contained pus is retained merely by a thin covering that raises a partial elevation at the bottom of the wound; a poultice is then the best application. *Fifteenthly*, When the abscess has perforated the diaphragm, and the pus occupies either side, pressing the lung to the spine, the symptoms connected with the respiration, percussion, and auscultation, will indicate the state of disease; and if the patient desires an opening to be made into the thorax to remove the pus from that cavity, it may be performed. *Sixteenthly*, In some instances, the lung forms adhesions to the diaphragm, and if hepatic abscess then perforates the diaphragm, the pus passes directly into the pulmonary tissue, and thence into the air tubes, and free, purulent expectoration ensues. Some of those cases recover perfectly; in other instances pulmonary vomicæ form, and the case terminates fatally. When hepatic disease is extended to the chest, the sufferings caused by the affection of the thoracic viscera, should be promptly relieved by such general and local remedies as are indicated by the symptoms. The tonic remedies usually prescribed in chronic hepatic cases to improve the digestive powers augment, or do not relieve, the hepatic disease.

## CHAPTER V.

### A PHYSIOLOGICAL REVIEW OF THE PRINCIPAL REMEDIES USED IN THE TREATMENT OF HEPATIC DISEASES.

336. *These are*—1. *General and local bleeding.* 2. *Counter-irritants.* 3. *Mercury, considered as a purgative of the liver, and a stimulant of the lymphatic or absorbent system.* 4. *Warm bath.* 5. *Fomentations, Cataplasms.* 6. *Refrigerant drinks.* 7. *Neutral salines.* 8. *Purgatives.* 9. *Croton oil.* 10. *Diuretics.* 11. *Sudorifics.* 12. *Sedatives.* 13. *Frictions.* 14. *Equestrian, or other exercise.* 15. *Sea voyage.* 16. *Change of air.* 17. *Regimen.* 18. *Change to a cold climate.*

337. BLEEDING FROM LARGE VEINS relieves the imperfect movements of the heart arising from a turgid state of the vessels, by reducing the quantity of circulating fluid. The heart soon afterwards becomes unembarrassed, and acts naturally, and the veins imbibe the fluid more freely, from the vicinity of their extremities. The attraction of the capillary veins conjointly with a similar action of the absorbents, (aided by a reduction of the quantity of fluid poured into the part,) frequently re-

moves local engorgement or incipient inflammation. The circulating column of blood is then distributed in just and due proportion to all parts; healthy capillary action and organic function are restored; and health is ultimately thus re-established.

338. This is the most simple, and, perhaps, unusual termination of hepatic engorgement, congestion, or inflammation; and is to be expected only from prudent treatment, subsequently to general and local bleeding. In hepatitis, or even in minor states of hepatic disease, general depletion only prepares the system, for the safe and more advantageous employment of means calculated to unload the capillaries, and remove local irritation and excitement. To effect this object, venesection should be freely, and, if necessary, repeatedly employed in the earliest stage of the disease, until the pulse is tranquillised, and becomes soft, and until the stinging heat of the skin subsides.

339. Local bleeding is effected by leeches or cupping. Bleeding from the capillary system is to be considered as respects two distinct and different conditions of disease. *First*, Its use in the earlier stages of congestion or inflammation. *Secondly*, Its effects, in the after or chronic stages of those affections, wherein a passive state of congestion exists, and returns of partial inflammatory action supervene from time to time. After the general circulation has been relieved, the capillary vessels, in the vicinity of the part affected,

are to be freely evacuated by leeches or cupping; and this procedure has a very powerful effect in removing inflammation. *First*, It relieves the nerves of the part from the irritation to which they are subjected by capillary injection. *Secondly*, It removes local congestion and partial obstruction of the capillary vessels, which otherwise would tend to produce suppuration. *Thirdly*, It favours the afflux of blood from an inflamed or congested part, and determines it to the surface, through those vessels from which blood has been abstracted. This is illustrated by the spot of ecchymosis that usually forms around a leech-bite, especially on the abdominal parietes; and which frequently continues to increase and darken till the third day.

340. The application of leeches to the anus day after day is useful, while the symptoms announce the remains of inflammation or congestion in the liver, (or in any part of the abdomino-portal circle), and the general circulation shows, that the patient can lose blood with advantage. Prudent perseverance in thus relieving the capillary system from time to time, prevents an accession of that extensive vascular engorgement or obstruction, which ordinarily leads to hepatic suppuration, or to a fatal termination from fever. The vascular system, thus daily relieved from some part of its morbid condition, acquires tone and tendency to re-assume a healthy action, and to aid the efforts of nature and art, in re-establishing an equal distribution of blood. One, two, or three,

applications of leeches may not effect the desired object; nay, sometimes the pulse increases in strength and frequency after these bleedings. In such cases the number of leeches should be increased and their use persevered in, with the assurance that the greatest advantages will be obtained by them.

341. COUNTER-IRRITANTS, include blisters, setons, rubefacients, tartar emetic ointments, sinapisms, hot poultices and fomentations. Of these the cantharides blister is the most efficacious and most extensively employed. *First*, It stimulates the circulation powerfully, and tends, by exciting the capillary system and organic nerves of the part, to restore an equal distribution of blood to all parts. *Secondly*, It stimulates the entire capillary system. *Thirdly*, It draws a sero-albuminous fluid from the dermoid capillaries. *Fourthly*, It relieves internal congestion and irritation, and it determines to the surface of the body. *Fifthly*, When, instead of healing, suppuration is established in a blistered surface, the whole system becomes lowered according to the extent of superficies thus placed in a state of suppuration. *Sixthly*, Repeated applications of a blister, in chronic and in acute hepatic cases, after due depletion, produce the greatest benefit.

342. SETONS and ISSUES are very useful counter-irritants in chronic cases. They establish a free derivation, as it were, from an opposite point of the organic circle; hence the engorgement and

irritation existing in the seat of disease gradually cease, as irritation and discharge are developed by these means in an external part.

343. MUSTARD POULTICES and FOMENTATIONS are very powerful rubefacients; and are often employed to effect revulsion. The former is generally applied to the lower extremities to determine from some internal organ. When any of the abdominal viscera is affected by inflammatory disease, consequent upon hepatic or other preceding acute affection, then mustard may be advantageously employed as a rubefacient, either over the abdominal cavity, or to the lower extremities according to the symptoms. As the stimulant operation of mustard on the skin is extended to the entire system, it should be employed, as well as blisters, with prudence, especially to the abdomen; for, in hepatitis, before sufficient depletion has been effected, either of these would, by stimulating prematurely, tend to promote the formation of abscess. A few spoonsful of mustard-powder, and as many of vinegar, are often added, with great advantage, to the hot foot-bath used for heaviness, pain, or aching of the head. In this case the feet should be immersed until the stinging pain of the mustard is felt; and then they will appear reddened.

344. TARTAR EMETIC OINTMENT, produces a series of papular eruptions and blotches of the surface to which it has been used; and this determination of irritation to an external part, has been proved by experience to relieve or remove en-

gorged, obstructed, irritated, and inflamed states from internal or adjoining parts.

345. HOT-SALT OR SAND, and FOMENTATIONS, frequently repeated, are temporary rubefacients, producing not only rubefacient effects for the time, but also exciting a gentle diaphoresis of the parts, which soon extends over the surface, and soothes local irritation even of the liver. It is, however, in the chronic stages of hepatic disease that these remedies are useful; *i.e.*, either after suppuration, and when there remain a distressing soreness, and perpetual restlessness, or when a similar state is experienced from chronic inflammation, with or without either enlargement or decrease of volume. In these cases, the frequent repetition and constant alternation of fomentations and cataplasms, at the highest temperature they can be borne, soothe restlessness, tension, and agony, and restore the patient to comparative ease, by determining to the surface, and relieving nervous irritation. It must be obvious that their use is contra-indicated in acute hepatitis, as they would directly promote the formation of abscess.

346. CALOMEL produces five distinct changes of animal function, which have become familiar from daily observation. *First*, It occasions an augmented secretion, and an increased discharge of bile; *secondly*, it purges the gastro-intestinal tube; *thirdly*, it produces ptyalism with swollen gums; *fourthly*, it causes a greatly increased action of the absorbent system; *fifthly*, it affects the circulation

and changes the pulse from small and hard to soft and large. Daily experience has established the fact that calomel promotes the hepatic secretion; and the certainty of its action in removing biliary torpor or derangement, is admitted on all sides. The ordinary purgative dose is from three to ten grains at bed-time, or in more urgent cases from ten grains to a scruple, according to the character and urgency of the disease. As a gastro-intestinal purge, it is in constant use, but its most advantageous purgative effects, result from its employment the night preceding the use of some other purgative. Does it undergo a chemical change before it effects the purpose? It seems rational to believe, either that the calomel combines with a free acid in the stomach, and in this state is taken up by the absorbents, poured into the thoracic duct, and blended with the circulating blood; or, that it is taken up by the abdominal veins, and passes by the portal vessels through the liver, into the general circulation, where it affects the nervous systems, and stimulates the mucous follicles and exhalant vessels. The digestive organs, being thus excited by this mineral, pour out their fluids more profusely than usual.

347. *During ptyalism*, the gums swell, and their dental margins ulcerate; the functions of the absorbent vessels and exhalants are increased, and becomes soft. When ptyalism is induced before hepatic abscess has formed; and when the pulse is changed to large and soft, hepatic inflammation

will be discussed, and suppuration prevented, if the mercurial action be kept up for about twenty days, and the mercurials then cautiously discontinued, the dose being gradually diminished. The agency of this mineral, in removing hepatic inflammation depends on its stimulating the circulatory, the absorbent, glandular, and capillary systems. But how does it thus influence these several series of vessels? By its stimulant action on the ganglionic system which governs all these vessels and glands. The absorbent vessels, being very plentifully distributed throughout the liver, remove the surplus materials which produced or aggravated congestion; the tumid condition that tended to obstruct the vascular function of the part ceases, and a pervious state of its capillaries is re-established. When ptyalism takes place from mercury, the system is considered to be saturated with it; this mineral, having been carried into the circulation, stimulates the capillaries generally, and those of the salivary glands, and of the liver especially.

348. Mercurials, administered after hepatic abscess has taken place may, and often do, occasion an irritated soreness of the mouth; but ordinarily they do not produce ptyalism, nor the mercurial fœtor. Yet this latter sometimes occurs without the former. These two states together are unerringly indicative of the full mercurial effect having been produced on the system. We do not know why a patient afflicted with hepatic abscess, can-

not be brought under salivation, whilst the mouth nevertheless becomes sore, tender, and irritated, but the fact is so.

349. The use of mercurials occasionally produces four injurious effects; *first*, it causes *Erythema* on some constitutions; *secondly*, *Erethismus*,* or mercurial fever, with or without vomiting; *thirdly*, irritation of the gastro-intestinal canal, accompanied by tormina and purging, and which, treated by irritating purgatives, or by additional mercurials, becomes a real dysentery; *fourthly*, it operates on some as a poison, deranges the heart's action, and induces faintings and sinking. When any of these deleterious effects occur, it is obvious that this mineral has acted injuriously on the ganglionic system, and especially on the nervous extremities, distributed to the heart and arteries. The remedy is simple. Discontinue the mercury in every case. In *Erythema*, which is very rare in India, hot-baths, sulphureous and saline aperients, or sulphureous vapour baths, suffice. In *Erethismus*, the liberal use of good wine is absolutely necessary, to which animal jellies may be freely added. Where intestinal irritation occurs, warm bath, flannels, subsequently leeches to the

* The characters of this affection are: Pulse large, soft, and rapid, 120 to 150; faintness, tendency to delirium; skin hot, either moist or dry, and at other times accompanied by profuse sweats; irritability of stomach and frequent vomiting; tongue excited and clammy; constant jactitation; sleeplessness; and great prostration of strength.

anus, frequent small doses of ipecacuanha, and occasional opiates, usually remove the symptoms.

350. Mercurials alter the relative quantities of certain constituents that compose the blood; and hence the blood drawn from an individual affected by, or recently under the influence of, mercury, presents more or less of a gelatinous substance or layer on the surface of the coagulum. This substance varies from transparent to opaque, and from a pale, or nearly colourless hue, to a greenish yellow, nearly resembling pus. The affection of the system by mercury seems to be influenced by certain states of the animal economy. *First*, In the early stage of hepatic abscess the system rarely becomes affected. *Secondly*, In plethora, the frame resists the effects of mercury, and the kidneys are inactive. *Thirdly*, When mercury has been lately used, it is more difficult to affect the system than in the first instance. *Fourthly*, There is an idiosyncrasy that resists the mercurial influence. *Fifthly*, Very free exposure to air carries off this mineral in the exhalations from the pulmonary organs, and from the cutaneous surface, and in this case its operation on the system is decreased. *Sixthly*, Cold air and cold baths check its influence. *Seventhly*, The use of wines and of diffusible stimuli retards its operation. *Eighthly*, Purgatives are supposed to carry off mercurials, leaving less in the system. *Ninthly*, Sulphur is considered, in an especial degree, calculated to arrest the effects of mercurials, by combining with them, and faci-

litating their excretion by the bowels, the lungs, and the skin.

351. *Mercurial ptyalism* is promoted, *first*, by general bleeding. *Secondly*, by low regimen. *Thirdly*, by large draughts of warm fluids. *Fourthly*, by the warm bath. *Fifthly*, by close rooms. *Sixthly*, by the use of flannels. Calomel, taken into the stomach, unites with the free acid in the stomach; and a part of the solution thereby formed with the secretions, appears to stimulate the intestinal mucous membrane, thereby increasing the action of the bowels. Another part of this solution is carried into the circulating blood by one or two channels:—1st, It may be taken up by the absorbents, carried into the thoracic duct, and thence into the left sub-clavian vein and general circulation. 2dly, It may be taken up by capillary veins on the gastro-intestinal surface, and carried with the blood through the portal vessels and hepatic veins into the general current of the circulation. If we adopt the opinion that the mercurial solution passes through the hepatic acini in its course into the general mass of blood, the singularly stimulant properties it exercises over the biliary apparatus are thereby readily explained. This mineral stimulates the ganglionic system of nerves, and hence its effects are observed on vessels and glands, according as they are more or less supplied by these nerves. Thus, the absorbent and capillary vessels, the conglomerate glands, and the smaller arteries, are remarkably excited by its influence;

the latter vessels most probably being affected by the increased action produced in the capillaries of their coats, or as they are termed the *vasa vasorum*

352. However future experience may decide the manner in which mercurials enter into, and act on, the system, we have the testimony of all the best authors for the last half century to prove its effects in certain forms of disease. When ptyalism is excited, in cases of hepatitis, previous to the formation of abscess, experience informs us that if the affection is prudently maintained about twenty-one days, and the remedy gradually discontinued, the hepatic inflammation terminates by resolution, and the patient is cured. When ptyalism is produced in dysenteric cases, tarry dark bile usually begins to flow largely, the blood and mucus disappear from the dejections, the pain ceases, the stools resume their colour, and the case terminates in recovery, provided mercurials, laxatives, and regimen, are prudently employed. In the most dangerous forms of bilious fever, if ptyalism is excited, the fever abates from the period of that occurrence. This is, in some degree, accounted for by the fact, that a great number of cases, heretofore termed bilious remittents, really were hepatic affections conjoined with cerebral congestion, to an extent that obscured the diagnosis. Inert states of the hepatic function are promptly relieved by mercurials; but bleeding should precede their use, if sanguineous engorgement is

indicated. Inert states of the kidneys are very effectually treated by mercurials and the warm bath, after prudent depletion, general or local. Ulcers of the intestines commence healing immediately after mercurial ptyalism becomes established.

353. Warm Bath, from 95 to 105 of Fahrenheit, or Reaumur, $27\frac{1}{2}$ to $32\frac{1}{2}$. *First*, It promotes the effect of mercurials. *Secondly*, It is contra-indicated by acute pain of the liver, small hard pulse, and stinging heat of the skin. *Thirdly*, It is used with most advantage before sun-rise, or after sun-set. *Fourthly*, The patient should get out when he finds perspiration breaking out over the head; be well and quickly rubbed; and covered warmly in bed. A free perspiration will then flow for fifteen or twenty minutes, which should be encouraged by the covering here recommended. When the perspiration has terminated, the individual feels the moistened coverings become cold. Then he should be removed to a dry clean bed. *Fifthly*, It is sometimes used with advantage after blood-letting, generally and locally, and either before or after blisters. *Sixthly*, It determines the blood, powerfully, from the interior organs to the external surface; accelerates the circulation, for, perhaps, an hour; and subsequently equalizes the distribution of blood.

354. When an individual is immersed in a hot bath, the extraordinary stimulus of free caloric powerfully determines the blood to the surface of the body, as we may plainly observe by the rosy

hue the skin assumes. The bath having been taken, the system undergoes certain changes in passing to its former state. 1st, The surface surrenders the excess of free caloric acquired in the bath. 2ndly, The capillaries of the skin are relieved from the surplus fluid carried into them. 3rdly. The vascular excitement gradually subsides. If the body, after a hot bath, is exposed to a cool atmosphere, it parts with its excess of caloric so suddenly, that there is no perspiration; but if it is covered, the cutaneous exhalants pour out perspiration copiously, after which, the heart's motions become tranquil.

355. *The Nitro-muriatic* acid bath*, is very extensively and advantageously used to remove a torpid state of the liver, and to stimulate and perfect its secretions. This remedy excites the capil-

* This solution is formed thus:—Mix four ounces of Nitric Acid with eight of water in a common bottle, and then add four ounces of Muriatic Acid. An ounce and a half of this solution, added to a gallon of water, will suffice for a bath; the parts usually subjected to its influence are the lower extremities; but when applied as a wash or lotion over the abdomen, it is more powerful. The strength of the bath should be such as to occasion a prickling sensation, and a blush of the skin, after bathing for twenty minutes or half an hour; some use it for forty minutes. It is employed warm, the parts being either immersed in, or sponged with it. After some days' use, symptoms, indicating an accumulation of bile, supervene, which require the bath to be intermitted, and a mercurial to be given at night, and a purgative in the morning. After a day or two, it should be recommenced, and the patient's symptoms attended to as before.

lary system of the surface over which it is applied, and some of it is doubtless carried into the circulation by the absorbents. The vessels, thus called into increased action, stimulate the ganglionic system; this system (if the remedy operates) exciting all the capillaries of the body into a state of increased action, more especially those connected with the portal circulation.

356. This remedy is not employed in acute inflammation, as it would directly promote the process of suppuration. It is especially adapted to torpid states of the liver, not associated with obstructions, irritation, or inflammation. Where obstructions of the liver exist, it is doubtful, or even dangerous; their removal should, therefore, precede its use. Its effects on hepatic secretion become more powerful as the tone of the capillary circulation is restored. It should not be discontinued suddenly, but very gradually, as by diluting the solution more and more, and by prolonging the intervals between its use.

357. The bile continues to re-accumulate for some time after the employment of nitro-muriatic acid bath, to a greater extent than is observed even where mercury has been used, with this difference, that in the former case there is, generally, a febrile state which attracts attention. In the mercurial case on the contrary: the symptoms are slow bowels, costiveness, or the reverse, marking a deficiency, or an overflow of bile, and at times an accumulation of it. Occasional purgatives or

laxatives should be used, with regular exercise after it is discontinued. The nitro-muriatic acid bath should not be daily employed for a longer period than about six weeks at a time. It should then be discontinued for a few weeks, and again recommenced after an interval of about five weeks. Its long continued use excites a disagreeable febrile state, depending, most probably, on its stimulant effects, on some obstructed or slightly engorged part. Alterative mercurials may be exhibited advantageously in the intervals between its use.

358. Refrigerant and diluent drinks, taken abundantly, pass through the portal vessels and liver into the general circulation. The experience of ages has shown their great utility in all acute diseases, especially in those cases where the use of nutritious substances is partially discontinued. The body is in those left to defray its current expenses, or supply its waste by the absorption, assimilation, and rejection of its own stores; in other words, from the adipose deposit made in the cellular tissue of several parts. The absorbents, by their increased action, rapidly remove partial engorgements of the liver, or of any other part; and increased or undue determinations to particular organs are replaced by an equal distribution of the circulating blood.

359. Neutral Salines. Two species of medicine pass under this designation; they differ as to their effects and the objects for which they are employed; one is cathartic, and the other refrige-

rant and febrifuge. The consideration of the first species falls under that of purgatives. Neutral salines, employed with a view to their febrifuge effects, act similarly to refrigerants. They are more powerful than simple diluents, for several reasons. *First*, They coagulate and detach the mucus (which in febrile conditions is peculiarly viscid) that adheres to the digestive mucous surface, and thus cleanse the openings or mouths of its glands, follicles, and vessels, thereby enabling them to resume their natural functions. *Secondly*, They have a salutary influence on the nervous extremities distributed to this surface. *Thirdly*, The congested condition of the net-work of vessels, that contributes to form the mucous surface, is relieved. *Fourthly*, The neutral salines replace those discharged from the body by its excretions ; and as they promote capillary action, they are thus conducive to the re-establishment and maintenance of the healthy movements of the vascular system. *Fifthly*, Alkaline carbonates and acids, taken into the stomach, effervesce in uniting, and form a neutral saline solution, which affords additional advantages. The effervescence and extrication of gas in the stomach present three new points for attention. 1st, The alkaline solution, swallowed separately, coagulates, at least partially, the mucus adherent to, and deterges, the mucous surface—effects which, perhaps, would not have been otherwise accomplished. 2ndly, The addition of the acid solution to the alkaline, and the actual

process of effervescence in the stomach, are grateful to the nervous extremities so largely distributed to the mucous coat of that organ. This practice is the most successful in cases of great gastric irritability. *Thirdly*, Extrication of the gas distends the stomach for a few minutes, but it soon contracts on its contents, and expels a great part of them. The most usual mode of taking the effervescing draught is to pour the acid on the alkaline solution, and swallow the fluid instantly; thus effervescence takes place in the mouth, pharynx, œsophagus, and stomach, the good effects being, in great measure, lost.

360. PURGATIVES act on the common gall and pancreatic ducts, on the follicles and exhalants opening on the gastro-intestinal mucous surface, and on the muscular tissue composing the middle coat of the digestive tube. The doctrine of exhalants, opening on the intestinal mucous membrane, was maintained by Bichat *. Pellitory root, ipeca-

* "Se fait-il une exhalation sur les surfaces muqueuses? L'analogie de la peau semble l'indiquer; car il est bien prouvé que la sueur n'est point une transudation par les pores inorganiques de la surface cutanée, mais bien une véritable transmission par des vaisseaux d'une nature particulière et continus au système artériel." P. 53.

"Comme d'une part les vaisseaux sanguins rampent presque à nu sur les membranes muqueuses, et que d'une autre part ces vaisseaux sont toujours l'origine des exhalans, il est évident que ceux-ci, pour arriver à leurs surfaces, ont peu de trajet à parcourir: ce sont des pores plutôt que des vaisseaux distincts. Voilà pourquoi sans doute le sang a tant de tendance à s'échap-

cuanha, &c., excite a temporary flow of saliva. Purgatives stimulate the follicles and exhalants of the intestinal surface, to pour out their respective fluids in augmented quantities, and they excite an increased peristaltic motion for the speedy ejection of the intestinal contents. Fluids taken whilst the gastro-intestinal tube is under the action of those agents, will not be taken up by the veins in the ordinary manner, but will be wholly, or in part ejected. The purgative agency may be viewed thus: *First*, There is an augmentation of mucous secretion; *secondly*, an increase of aqua-serous fluid; *thirdly*, a discharge of hepatic and pancreatic juice; *fourthly*, increased peristaltic motion; *fifthly*, the evacuation of the intestinal contents; *sixthly*, the condition in which the entire animal economy is placed by the production of greatly increased excretions from the bowels, and by an accelerated and more energetic series of actions in the muscular fibres of the intestines. The dejections are termed feculent, bilious, mucous, and serous, or aquaserous, as any one or other of these materials, apparently, predominates over the others.

per par les exhalans; pourquoi, par conséquent, les hémorrhagies sans rupture sont si fréquentes sur le système muqueux; pourquoi cette affection peut même être classée dans les maladies de ce système, &c. &c. Aucun autre, par la disposition des artères, n'offre aux exhalans un aussi court trajet à parcourir entre leur origine et leur terminaison. Souvent même, comme je l'ai dit, on fait suinter sur le cadavre le sang de ces vaisseaux à travers leurs exhalans." *Bichat, Anatomie Génerale,* Tome iv. p. 55.

361. Some purgatives act more especially on one part of the intestinal canal, others upon another part, and the dejections vary in character according to the part on which the purgative substance exerts its principal influence. *Calomel* produces bilious dejections. *Rhubarb* is said to stimulate the duodenum, and to increase the quantity of mucus. *Hydragogues* elicit serous exhalations from the mucous membrane of the small intestines. *Sulphur* acts on the colon. *Aloes* on the rectum. *Croton oil*, I believe, acts on the biliary apparatus, the entire gastro-intestinal surface, and on the kidneys. Purgative substances do not escape altogether through the gastro-intestinal tube; on the contrary, some, at least, are absorbed, pass into the circulation, and are excreted by the kidneys, by the skin or mammæ. Thus, one or two hours after taking rhubarb, the high-coloured urine indicates its presence in that fluid, and sometimes the cutaneous perspiration smells of this substance. Sulphur or senna given to a wet nurse, affects the infant whom she nurses seven or eight hours after it is taken. The oleum terebinthinæ, either administered by itself or with ol. ricini, passes off, in part, by the kidneys, and communicates a violet smell to the urine in a very few hours. These substances, however, are not detected in the blood, although they must have been carried into it before they could have passed off, as they do, from cutaneous and pulmonary exhalants, and from the kidneys.

362. Now, as to the employment of purgatives in hepatic disease, we may conclude, *first*, That the treatment of either acute or chronic hepatic disease could not be safely conducted by purgatives alone; *secondly*, that their use may frequently prevent liver disease; *thirdly*, that, properly regulated, they are usefully associated in the treatment requisite to remove offensive excretions, and to procure increased exhalations from the abdominal circle, and thereby, that they are adapted to diminish the morbidly increased actions of the hepatic vascular system, and turn the determination of blood from the suffering part.

363. Croton oil. This article was first prepared by myself in 1815, and in 1817 I introduced it to European practice. I was led to examine what part of the nut contained the purgative principle, by the barbarous * preparations in ordinary

* *Croton Tiglium.* These seeds, which were formerly known in Europe under the name of Grana Molucca, are of a convex shape on one side, and bluntly angular on the other, are reckoned by the Vityans amongst their drastic purges, and are frequently prescribed by them in maniacal cases, or on other occasions when powerful cathartics are required. Their operation is rendered much less violent when the seeds are cleared from the thin filament in which each is closely enveloped; then as far as one of the seeds may be given as a dose. The Malay name of the fruit is Bari. The plant is the Cadel Avavācu of the Hort. Mal.

A fixed oil is prepared from the seeds of the Nirválum, called Nirválum unnay, which is considered as a valuable external application in rheumatic affections. *Ainslie's Mat. Med.*, First Ed. p. 95.

Again, Dr. Ainslie gives us, in Part iii. p. 292—294, of his

use, and I soon found that the purgative principle resided in the oil. I was at that time unacquainted

first edition, the following information. " For the following account, remarks, &c., regarding the Nirválum cottay or purging Croton nut, (Croton tiglium) and its use in medicine, I am indebted to Dr. D. White, superintending surgeon in Guzerat.

" Take the seeds of Croton, (Grana tiglia,) which, after having been each enveloped by a small ball of fresh ' Merda Bubali,' about the size of a sparrow's egg, put upon some burning charcoal, till the Merda Bubali is burnt dry; then, removing them and taking off the shells from the seeds, pound the ' *Nuclei,*' and divide into pills, viz. two out of each grain of the mass; two, or at most three of which are sufficient for one dose to an able-bodied man: half a drachm of honey to two drachms of the mass proves a good and convenient medium for uniting it.

" The advantage derived from the above-mentioned process is, that in the first place it facilitates the removal of the shell; secondly, it renders the nucleus more fit for pounding; and thirdly, the gentle torrefaction it undergoes, corrects, in a great degree, its natural acrimony."

" *Remarks.* One pill of the above proportion is sure of producing one or two stools, sometimes three; this according to Idiosyncrasy. Here, we generally prescribe one on going to bed, and the ensuing morning repeat one or two, *pro re natâ.* It will be seen, that attention to the detail of administration, will succeed in rendering the grana tiglia purgative in any degree. These effects we are not so much master of with the European imported purgatives.

" An excess in the dose acts also by vomiting, especially in foul stomachs. It is a powerful evacuant of the bile, and, by the Malays, is administered successfully as a Hydragogue; a small bit of ripe plantain is the best vehicle for the pills.

" The powdered seeds, without being torrified, when scattered on stagnant waters, are also used for killing fish: hence its Malay name, ' Bori,' which they apply to all fruits with such qualities. The

with the works of Rhumphius and of Bontius, nor was I aware that croton oil had been previously

" The root formerly, at Amboyna and Batavia, was found to be a specific for dropsy: as much of its shavings or raspings as the finger and thumb will lift to be taken, every morning, in a little wine or arrack.

" With regard to its nomenclature, we should adhere to the botanical appellation, which will be continued if ever it is adopted into the Pharmacopœia, the genus, being styled ' croton,' and the species ' grana tiglia.' (Willd. sp. pl.) The Malabar, Canarese, and Sanscrit names, express, aptly enough, its quality of liquifying the contents of the intestines. The former, viz. Nirphalum, (corrupted Nérvalum,) or fruit, causing water; the two latter Jephăla, signifying the same. I suppose that the Bazar Jamul-Gota is an awkward translation of the latter.

" On breaking the shells, after torrefaction, great care must be taken to throw away all those kernels that are naturally decayed, or by chance may have been too much burnt. This part of the operation a surgeon should always inspect himself.

" The preparation detailed above, was received from a Vaidya (native doctor) in Malabar. In addition to this I have learned three other modes, viz.—

" First. An intelligent Jogui from Banares tells me, that in his country they boil the seeds soft, in milk, stripping them first of the shells; after which they pound them, forming the mass by means of lime juice, at the rate of one pill from each seed; two of these pills make an ordinary dose."

" Secondly. A mode in Guzerat is still more simple, and consists merely in pounding the kernels without any previous operation, and forming, by means of honey, from each nucleus, two pills; one of which generally suffices for a drastic purge, at the same time directing a gill of warm water to be taken immediately after swallowing the pill. In this preparation the inherent acrimony of the kernel makes up for the smallness of the dose, and the water drank above it insures, they say, its speedy operation downwards.

used as a purgative, until I read the before-mentioned works in 1822, at Paris. A full dose pro-

" Thirdly. The following directions from a learned and experienced Persee Vaidya at Surat, though I have not yet proved their propriety by experimental trial, appear to be founded on the most rational views.

" In the first place, after having taken the shells off the seeds, tie the kernels in a small piece of cloth, like a bag, then put this into as much cow-dung water as will cover the bag, and let it boil; secondly, when boiled, split the kernels in two, and take a small leaf (filament) from them, which is said to be poisonous, and which causes a griping and rumbling in the belly; and thirdly, pound the whole into a mass, to which add two parts of kat-ha, (catechu,) i. e. to one drachm of croton, two drachms of kat-ha, and divide into pills, of two grains each, two of which are sufficient for one dose; the addition of the kat-ha is said to correct its acrimony altogether, and to prevent any griping, &c. from taking place. (Signed) D. WHITE."

For the further account of the purging croton nut, I am indebted to Mr. T. Marshall, Assistant Surgeon of the Bombay Establishment.

" As far as the employment of the croton, (Grana tiglia,) prepared as directed by Dr. White, (see preceding account,) in about an hundred instances, authorizes me to speak of its powers, I give the following remarks as the result of my observation. The cases were all European soldiers."

" Two pills, (in each, half a grain of the mass,) given to a man of ordinary habits, and undebilitated frame, produce a full purgation, such as is necessary, according to the usual practice, in the commencement of fever: I estimate this dose as equal in power to half a drachm of jalap, (as it comes to India,) or to six grains of calomel, and an ounce of Epsom salts.

" In a very short time after taking the pills, perhaps in half an hour, the patient is sensible of a rumbling motion in his bowels; which often, in another half hour, is followed by a

duces violent purgative effects. It empties the abdominal circle so largely, in doses from one to

stool; this rumbling continues during the whole of the operation; the stools are invariably watery and copious. In about one case in ten, the medicine produces griping; and in about one or two in thirty, nausea; but it is very probable that similar effects would have arisen, in those cases, from the operation of any purgative medicine of equal power."

"If the patient be weakly, and debilitated by former ill health, one pill will frequently produce effects similar to those above noted; but in a stout and tolerably healthy subject, the operation of one pill is very different,—much less rapid; seldom affording a stool in less than six, eight, or perhaps ten hours; the stools may be neither numerous nor watery; but the griping is, perhaps, of more frequent occurrence than when two are taken.

"In a case of general torpor and coma, I succeeded in producing numerous (though not very watery) stools, by three pills: but, in a case where the torpor of the bowels had been for some time a marked feature of the fever, Mr. Surgeon Palmer gave five pills without effecting very copious motions.

"The chief advantage of this purge appears to be the smallness of the bulk necessary to obtain the desired effect. In the two cases above mentioned, it would have been nearly impossible to get the patient to swallow a sufficient quantity of almost any other purgative. None of the drastic purges are more certain; none so rapid in their action; and none, I think, so little annoying by griping or nausea.

"I found the dose of one grain very successful in cases of diseased spleen, where the patients were obliged to have their bowels daily emptied, an omission of this precaution being almost inevitably followed by a paroxysm of fever: by managing the exhibition of the medicine, so as to ensure its operation an hour or two before the time of the expected attack, it was almost certainly obviated.

"To the field surgeon, it is no unimportant recommendation

five and six drops, that a great sinking, or tendency to faint, is frequently experienced. This arises from two causes, *first*, the very extensive determination to the mucous surface, which abstracts the ordinary capillary, supplies from the ganglionic system and nervous plexuses of the abdomen and of the thorax; *secondly*, by this sudden and great determination to the intestinal mucous surface, the abdominal circle of vessels are deprived precisely of that volume which is poured out on the mucous surface. The liver receives an equally diminished supply of blood; a reduced quantity is returned to the right side of the heart, and when oxygenated in the lungs, it is returned to, and sent from, the left cavities to supply all parts except the lungs. The sudden decrease of blood supplied to the heart, occasioned by these preternatural exhalations, produces languor and faintness. The reduction of volume, usually distributed to the brain and nervous tissues, occasions the vital powers to sink; but if

of this medicine, that five hundred doses of it may be contained in a small wafer-box, and purchased for half a rupee.

(Signed) "THOMAS MARSHALL,
"Assistant Surgeon,
"Doing duty with the European Regt. of
"Bombay Infantry."

"Barachie, near Surat, October 28th, 1812."

—Vide *Ainslie's Mat. Med.* First edition.

black blood is sent to the brain, it acts as a direct sedative poison, and decreases, or eventually destroys, the powers of life. May we not consider that, in the case of croton, some part of the medicine is absorbed into the blood, and thus presented to the cerebral and nervous tissue? Croton oil, tartar emetic, and several other active medicines introduced into the veins, produce their well known effects on the system.

364. In the "Recherches sur L'Ol. Croton Tiglii, par W. E. E. Conwell, A.B." (Paris, 1823, p. 18.) the following experiments are detailed :—

"Cinq gouttes furent injectées dans la veine jugulaire d'un autre chien. Au bout de quelques minutes il vomit abondamment une salive écumeuse, devint triste et engourdi. Douze minutes après l'injection, il eut une évacuation de matières fécales et de mucosités. Deux heures après il fut trouvé mort, après avoir eu encore une évacuation très-muqueuse, teinte de sang.

*Ouverture.* "L'œsophage était sain, la membrane muqueuse de l'estomac, celles des intestins grêles, particulièrement celle du duodénum et quelques parties du gros intestin, étaient enflammées au plus haut degré, comme dans la cinquième expérience. Le *canal cholédoque* sembla parfaitement *sain* et tout-à-fait *étranger* à l'inflammation du duodénum.

365. "La vésicule biliaire était vide, les membranes muqueuses des autres organes n'étaient pas enflammées. La vessie contenait un peu d'urine ;

la membrane interne des veines, même celle de la veine jugulaire, était parfaitement saine, et ne présentait aucune trace d'inflammation. Les poumons présentaient quelques points engorgés.— Voulant soumettre à l'observation la théorie des auteurs qui pensent que les purgatifs agissent par une irritation directe mécanique sur la membrane musculaire des intestins, nous avons fait quelques expériences dans cette vue. Le raisonnement seul porte déjà à croire que cette hypothèse n'est pas admissible ; car, si l'action des purgatifs consistait dans l'irritation mécanique des intestins, on ne concevrait pas comment des mucosités (qui, dans l'état naturel, sont en petite quantité dans les cavités digestives) seraient rendues en quantités si considérables.

366.. " Mais, voulant soumettre à l'expérience cette théorie toute vraisemblable qu'elle est, nous avons pratiqué sur un chien la ligature de la veine-porte. Après quoi, ayant injecté douze gouttes de l'huile dans l'intestin grêle, nous avons abandonné l'animal à lui-même. Presque immédiatement après l'injection il rendit une petite quantité de matières fécales, mais sans mucosités. Les douleurs de l'opération, l'irritation mécanique de la tunique musculeuse peuvent bien expliquer cet effet ; mais l'absence d'une purgation réelle dans un cas où son transport dans la circulation était prévenu par la ligature de la veine-porte nous porte à croire que ce transport est nécessaire pour que la purgation ait lieu.———

———" Il n'est pas nécessaire de dire que ces expériences ont été répétées plusieurs fois, et toujours avec le même résultat.

367. " M. *Magendie* m'a fait l'honneur de répéter cette expérience avec un résultat semblable, et aussi de faire des expériences en l'injectant dans la veine jugulaire. Je le prie d'accepter mes remercîmens pour la bonté qu'il m'a montrée sur ces sujets.———

——— " Nous avons aussi vérifié ce que nous avons dit précédemment de l'application en friction de cette huile aux environs de l'ombilic chez l'homme. Quatre gouttes appliquées de cette manière ont déterminé la purgation : une légère éruption suivit l'emploi de cette méthode.

368. " Une jeune fille de quinze ans, ayant flairé pendant quatre minutes l'huile de croton, a été purgée quatre fois abondamment. Il faut observer qu'elle l'a respirée d'une bouteille de seize onces à moitié pleine, et conséquemment d'une surface étendue. Cinq gouttes, étant introduites par frictions sur le bras, ont produit des nausées, la sueur, et une augmentation d'urine très-prononcée.

369. " Des expériences ci-dessus nous pouvons conclure que l'huile de croton ne produit pas plus d'irritation que les autres purgatifs drastiques, et qu'elle ne produit pas une inflammation (sinon quand elle est donnée à dose trop forte) qui doive nous détourner de son emploi.

370. " Que son action n'est pas bornée à une partie du canal digestif, qu'elle ne l'irrite pas pro-

gressivement en parcourant sa longueur ; mais au contraire l'action rapide que produit une petite dose, l'étendue de l'inflammation, quand on en administre trop, nous porte à la regarder comme un stimulant de presque toute la membrane muqueuse et musculaire intestinale.

" Que son action n'est pas produite par l'irritation directe de l'enveloppe musculaire ; mais, au contraire, qu'elle agit par l'action d'être absorbée et portée par la circulation sur le système nerveux, dont l'action intermédiaire la porte sur le canal intestinal ; car la petite dose placée sur la langue ne peut agir elle-même directement sur le canal intestinal ; de plus, l'injection dans la veine et l'application à l'extérieur ou aux membranes muqueuses du nez et des poumons produisent les mêmes effets que lorsqu'elle est introduite dans l'estomac.

371. " Donc il me paraît que l'huile, ou plutôt le principe qu'elle contient, étant introduite dans les corps vivans et mêlée dans la circulation, elle produira toujours à peu près les mêmes effets purgatifs comme fait le mercure.—Voici une note que M. *Magendie* m'a fait l'honneur de m'écrire sur ce sujet.

372. " M. le Docteur *Conwell* m'ayant remis l'année dernière une certaine quantité d'huile de croton tiglium, j'ai dû commencer par en essayer les effets sur des animaux. Je me suis d'abord assuré que cette huile est purgative à une dose infiniment petite, une goutte, une demi-goutte, par

exemple. A dose plus élevée, cette huile devient fortement drastique ; elle détermine une violente inflammation du canal intestinal, accompagnée de vomissemens répétés et de déjections continuelles. Injectée dans les veines, elle excite aussi, suivant la dose, soit la simple purgation, soit l'inflammation du canal intestinal, soit même la mort des animaux.

373. " Eclairé par ces effets, je n'ai pas hésité à employer de l'huile de croton tiglium comme médicament ; j'en ai donné, à l'Hôtel-Dieu à Paris, à plusieurs malades, hommes ou femmes, confiés à mes soins : les résultats ont été on ne peut plus satisfaisans. Une ou deux gouttes mêlées à une demi-once de sirop ont purgé doucement et abondamment environ quinze malades placés dans diverses circonstances. Les effets ont paru si avantageux, que plusieurs élèves de l'hôpital ont désiré essayer cette huile sur eux-mêmes, et plusieurs s'en sont servis avec avantage, et m'ont témoigné leur satisfaction. J'ai employé plusieurs fois dans ma pratique particulière l'huile de croton tiglium, et j'en ai toujours été très-satisfait. Je regarde donc cette substance comme une heureuse acquisition pour la matière médicale, si son emploi est dirigé avec prudence et discernement. " MAGENDIE."

" 12 *Janvier*, 1824."

374. Let us turn for a moment to the phenomena of Cholera Asphyxia, as many call it. Co-

pious watery purging, and profuse cold sweating, with or without cramps, burning at the epigastrium, and vomiting, mark this disease; but the first diagnostic symptoms to be depended on, are coldness of the tongue, and mucous membrane of the rectum, vomiting, and more especially purging of an opaque or limpid colourless fluid, want of bile in the dejections; and sinking of the pulse. Placing the finger on the patient's tongue, it feels quite cold before the temperature of the surface sinks; and that coldness contrasts strongly with the heated breath. Extensive and intimate connections subsist between the pneumogastric and the great sympathetic nerve. They concur in forming those numerous abdominal plexuses and ganglia whose irradiations and filaments communicate vital power to the extensive vascular circles of the abdominal organs, as well as to the heart and the lungs. The nervous powers, by a deranged action, occasion excessive exhalations from the gastro-intestinal surface; their due influence is also interrupted, and hence animal heat, in part, ceases to be developed.

375. The morbid determination of nervous influence to the muscular system, producing cramps, is an illustration of its transmission and agency. Coldness of the tongue and mucous membrane of the rectum indicates the cessation of healthy action in the mucous surface. Copious exhalations flow from all the mucous tissues; the mucous membrane of the eyes, the nose, and the intestinal

tube pouring forth their fluids continuously. In health, the pulmonary exhalations preserve the gaseous form, whilst passing from the lungs, by the increased temperature communicated from the oxygenation of the blood *.

376. But, as the pulmonary mucous surface loses its temperature, (probably in the same ratio with the tissue of the tongue and the gastro-intestinal surface,) the exhalations assume a fluid form. This occurs when the blood ceases to receive the due supply of oxygen, and the mucous surface becomes progressively unfitted for the discharge of its functions. The increase of moisture in the air-cells excludes, in part, the entrance of air, and the progressive decrease of oxygen in the blood, and corresponding reduction of the vital powers, permit an additional portion of the blood sent to

* "Tant qu'on n'aura pas des notions plus positives sur la formation de l'acide carbonique, et sur la disparition de l'oxigène, il sera difficile de se rendre raison de l'élévation de température qu'éprouve le sang en traversant ces organes. Cependant, comme il est très-probable que l'oxigène se combine avec le carbone du sang, et comme toute formation de ce genre est accompagnée d'un dégagement considérable de calorique, il devient probable aussi que c'est là la source de la chaleur plus grande du sang artériel. En supposant même que l'oxigène soit absorbé et passe dans les veines pulmonaires, et qu'il se combine ensuite directement avec le sang, on pourrait encore concevoir l'élévation de température du sang ; car toute combinaison de l'oxigène avec un corps combustible est accompagnée de dégagement de chaleur." *Magendie's Précis Elémentaire de Physiologie*, Tome ii. p. 294.

the lungs to stagnate in their tissue, and the heart's energies consequently sink. The cerebral, spinal, ganglionic, and nervous tissues progressively lose their energies from the decrease or absence of oxygen in the blood; then congestion of venous blood increases in those tissues and in the lungs, and soon terminates life.

377. It appears hence, *First*, That in the very earliest stage of cholera, bleeding would be certainly useful, and that, at a later period, its utility is doubtful, or it is injurious. *Secondly*, That diffusible stimuli and opiates are very useful. *Thirdly*, That cantharides blisters, (one to the back and one to the pit of the stomach at the same time,) and sinapisms, at times, to the lower extremities, are most beneficial. *Fourthly*, That so far as respects the application of remedial agents to the lungs, the patient should be urged to the exertion of voluntary breathing to prevent, or rather to delay the accession of asphyxia. *Fifthly*, That inspiring gaseous fluids, and the use of galvanism and electricity, may yet be found useful. Actual cautery, on each side of the spine, is amongst the most powerful of all stimuli, but after the cerebral and pulmonary tissues become gorged thoroughly with black blood, and the disease has made certain progress, there can be little reason for hope.

378. Diuretics, or agents, which influence the renal excretion, are of three kinds: *First*, Physical agents. *Secondly*, Moral causes, as fear, or other emotions, influence the kidneys, the urinary

bladder, and the intestinal tube. *Thirdly*, Substances having a conditional medicinal power of stimulating and augmenting renal action. The physical causes are: 1st. Cold, or exposure to reduced temperature, which operates by decreasing the external and pulmonary exhalations, determining an increased volume of blood to the interior organs, and consequently to the kidneys. 2ndly, Stimulating the vital energies of the body, and, consequently, promoting the internal excretions. 3rdly, Aqueous drinks, which, by increasing the circulating volume, causes an augmented quantity of fluid to pass to the renal glands; the blood being sent to them for the removal of surplus fluid*, and of other offensive materials.

* "When the venous blood becomes loaded with inflammable matter, which cannot be discharged from the lungs, principally in consequence of the high temperature to which the animal is exposed, and when, from certain causes, one of which appears to be the increase of cutaneous perspiration, this excess of inflammable matter is not employed in the deposition of fat, the liver would appear to be the organ by which it is removed. In ordinary cases, the quantity discharged is small, probably no more than what is sufficient to preserve the liver in its healthy state, and to perform the secondary objects to which the function is subservient; but when, from a conjunction of circumstances, there is an excess of inflammable matter, its accumulation is prevented by an increased discharge of bile.

"Another very important secretion, which may be classed under the head of the resinous bodies, is the urea, or that substance which constitutes the peculiar or specific ingredient in the urine. The urea does not indeed possess the characters of

379. Fluid carried into the stomach is taken up by the venous extremities mostly in the stomach,

a resin in so remarkable a degree as the biliary matter, but it approaches more nearly to this class than to any of the rest. It ought, probably, to be regarded still more than bile, in the light of an excrementitious substance, for, although it may serve other secondary purposes in the economy, there seems sufficient reason to believe that its primary use is to discharge from the system a quantity of matter which is noxious, or at least superfluous. There is this peculiarity in the chemical nature of the urea, that it contains a very large proportion of nitrogen, so as to make it appear that the kidney is the outlet provided in the constitution, by which any excess of nitrogen is removed, or its accumulation prevented.

" The quantity of nitrogen, which is discharged in the form of urea, is so considerable, even in animals, whose food does not essentially contain this element, that we are led to inquire, in the first place, how it is introduced into the system; and, secondly, what purpose can be served by its introduction, when it appears to be discharged again, almost as rapidly as it is received. While it was thought that the stomach was the only channel through which nitrogen was introduced, there was great difficulty in accounting for the quantity of it, which was obtained by the graminivorous animals; but this difficulty is at least diminished, if not removed, upon the supposition that nitrogen may be absorbed by the lungs. And, with respect to the second question, it may be sufficient, in this place, to reply, that, from the great importance of the fibrin, as the source and origin of the muscles, and the seat of contractility, it was of the first importance to have a supply of nitrogen for its preparation; and, that to insure a sufficiency of it in every case of emergency, there must necessarily be, in most instances, an excess of it, which excess is carried off by the kidney.

" The apparatus, by which the urea is secreted, is of comparatively small size, but is complicated and elaborate in its

carried into the abdominal circle of vessels, poured by the portal veins into the liver, and there the

structure, containing all the parts that are ever found in the composition of a gland. The kidney, like the liver, may be classed among the compensating organs, or among those which, independently of any useful office which they may habitually perform, have their actions occasionally increased for the purpose of supplying the deficiencies of other parts. Thus, when a larger quantity of fluid is received into the stomach than can be imbibed by the absorbents, the residue is carried off by the kidney; and, in like manner, if the usual discharge from the lungs or the skin is prevented from taking place, we frequently observe that the kidney supplies the place of these organs. Besides the urea, the urine contains several other substances, and particularly a great variety of salts, both earthy and neutral, which will belong to the next class of secretions.

"With respect to the relation which the urea bears to the other parts of the blood, before we can form any decisive conclusion on this point, it will be necessary to determine how far we are to admit of the speculations of Berzelius, and of the conclusion which Prevost and Dumas deduced from their experiments.

"The object which they had in view was to ascertain the nature of the changes which are effected in the blood by secretion, and for this purpose they removed the kidneys from a living animal. The operation was not productive of any immediate injury to the functions, but in a few days, various morbid symptoms arose, which seem to indicate an inflammatory state of the system. The blood was carefully examined after death, and was found to contain a much greater quantity than ordinary of the animal matter which enters into the composition of the serosity, and by subjecting this substance to the action of various re-agents, and also by reducing it to its ultimate elements, it appeared that it exactly resembled urea, so as to lead the authors to conclude that the urea of the blood is identical with that of the urine." *Bostock's Physiology*, vol. ii. p. 370—376.

acini having secreted the bile from the venous blood, the hepatic veins receive the blood from the acini, and thence conduct it to the inferior cava, which pours it into the right side of the heart. Thence the blood is sent to the lungs, changed from venous to arterial, and returned to the left side of the heart. It is then distributed to all parts of the body. The emulgent arteries supply blood to the kidneys, which excrete the urine, holding several nocuous substances in solution. Thus the circulating column of fluid is constantly checked in its amount, and its constituents are, as it were, analysed and purified by the conjoint labours of the liver, the kidneys, and the lungs, aided by the dermoid and the mucous tissues.

380. Medicinal agents will augment the secretion of urine, according to the ratio in which certain conditions co-exist at the period of their use. *First*, The kidneys must be in a healthy state, at least sufficiently so for the discharge of their function. *Secondly*, A surplus volume of fluid beyond that which the entire circle of circulation requires, must be presented to them. *Thirdly*, The cutaneous perspiration, and the exhalations on the gastro-intestinal* mucous surfaces, must be moderate. The reverse of those conditions would necessarily diminish the amount of function succeeding to the employment of diuretics.

* In cholera there is little or no urine secreted.

381. The quantity of urine excreted, when in bed, has been ascertained to exceed that of the perspiration by one-fourth. That which is passed some hours after a meal, is more charged with salts, &c., than that which results, between meals, from aqueous draughts; hence the one is called urine of coction, the other aqueous urine; and it is chiefly from the former that medical observations are made. Nitre may be detected in the urine half an hour after it is taken; many odorous substances become evident as soon, and some earlier. Resins, volatile oils, and turpentine, give urine the odour of violets. Rhubarb changes its colour to red. Asparagus renders it fœtid. Balsam of copaiba changes its acrid taste to bitter, and the smell is retained.

382. Great fear has produced copious discharges of colourless urine. It is sweet, limpid, and superabundant in diabetes. It deposits a lactiform sediment, occasionally, with women in child-bed, and is of a dark deep red colour in many inflammatory diseases. In biliary diseases it is often strongly stained with bile. Urine of crisis deposits a great deal of sediment, on cooling, in white scales or powder, and in severe fevers, pink-white crystals form on the sides of the glass. Nervous urine is colourless. Blackish, or very dark urine, (as if mixed with burnt coffee,) after the employment of active treatment for hepatitis, is of bad presage. The urine is generally scanty and high-coloured in the early stages of hepatitis; and

the kidneys are frequently painful from engorgement; the repeated application of leeches over the loins being required to relieve these symptoms.

383. After the formation of hepatic abscess, as the swelling of the inflamed parts subsides, the hepatic veins, which had been compressed, dilate, and the pus escapes into the openings of these vessels leading from the cyst, passes into the circulation, and is thrown off into the renal excretion, as evinced by the purulent state of this fluid. In cases of effusion in any part, the urine will indicate the period of its removal by a milky state, often observed in children, and sometimes in grown persons, especially after a severe cold. The colour of the urine is very extensively influenced and changed by the presence of bile: green, orange, saffron colour, and light shades of yellow, result from the admixture. When pus is present, the urine is turbid, milky, and opaque, until the pus becomes deposited, and then it assumes some shade of yellow, orange, or green; a few days before the appearance of pus, the urine resembles decoction of cinchona. In cases of severe cold, the period of recovery, with children, in cold climates, is marked by milky urine.

384. Sudorifics are agents, that under certain conditions increase the cutaneous exhalations. The skin affords three excretions: insensible perspiration, a sebacious fluid, and sweat or sensible perspiration; the first and last being modified forms of the same—being fluid in the one state,

and gaseous in the other. The fluid state only is considered here. Certain physical, moral, and medicinal agents excite this discharge; *first*, mental agitation, or pain; *secondly*, exercise. *thirdly*, heat; *fourthly*, gastro-intestinal derangement; *fifthly*, medicines which possess a peculiar power to determine the fluids, largely, to the external capillary exhalants. The full effect of this class of remedies is only obtained when the surface of the body is kept covered, and warm diluent drinks are freely employed.

385. SEDATIVES are means by which undue vascular action becomes reduced, the circulating movements tranquillized, and the consequent inconveniences of excessive vascular action are thereby relieved. They are chiefly the following: 1st, Abstraction of blood. 2ndly, Depletion by purgatives. 3rdly, Topical applications. 4thly, Low regimen. 5thly, Neutral salines. 6thly, Counter-irritants or cantharides vesications. 7thly, Warm baths. 8thly, Cataplasms. 9thly, Stimulating liniments, frictions, champooing. 10thly, Digitalis.

386. HOT CATAPLASMS, changed repeatedly, as their loss of temperature requires, elicit a constant perspiration, and relieve the nervous filaments of the adjoining parts from the uneasiness and tension which the vicissitudes of atmospheric temperature augment, by checking perspiration, and thereby increasing local congestion and irritation.

387. STIMULATING LINIMENTS. Due allowance

may be made for the effects occasioned by some parts of the liniment being forced into the absorbents. The most powerful remedy of this kind within my knowledge, is the Ol. menth. pip., which never failed when used as an embrocation, diluted with other materials, to relieve rheumatism. The friction with which all remedies of this class are applied, contributes much to the relief and cure of those cases, and perhaps in many instances it effects more than the medicine, as the mechanical excitement of the dermoid capillaries, promoting the circulation through the vessels of the part, must necessarily be followed by beneficial effects.

388. Champooing relieves restlessness, induces sleep, and produces a tranquillizing effect on the whole system. These effects seem due to the continued series of gentle violence, alternately applied and removed from the body. The nerves, the blood-vessels, and even the mind, participate in the relief conferred by this simple operation.

389. Digitalis usually reduces the frequency of arterial action, provided that the circulating volume of blood is not in excess, and that the circulation is not particularly deranged by engorgement, inflammation, or obstructions. This effect is produced by means of the nervous system, but in cases of plethora, of inflammation, obstructions, or congestion, the sedative effect is not obtained from its use. When depletion has been sufficiently effected, then more reliance may be placed upon this agent.

390. Local friction very obviously exerts great influence over the dermoid circulation, and on the fluid contained in the capillaries and minute cells that compose its delicate structure.

391. Equestrian or other exercise, employed moderately, is entitled to marked regard, as a preventive of disease, and equally or more so, as being well adapted to promote convalescence from hepatic disease, and to remove torpid states of the biliary functions: in short, gentle exercise on horseback is useful in all cases, where the strength is equal to bear it without exhaustion or fatigue, provided there are no symptoms of acute disease present, which contra-indicate its use. The advantages will be obvious, on recollecting the relative position of the liver, (§ 1, 2, 3, 4. 78, 79, 80.) its boundaries and relations, and the influence that a series of motions are calculated to exert over its functions, by promoting the discharge of its secretion through the biliary tubes, and eliciting the ejection of bile from the gall bladder.

392. A sea voyage embraces an extended series of advantages. *First*, It communicates a constant succession of movements advantageous to healthy hepatic action, uninterruptedly, day and night, without subjecting the enfeebled frame at any time to languor from exhaustion or fatigue; which necessarily ensues more or less from all other modes of exercise. *Secondly*, A great change of air is experienced, or rather, a continued and rapid series of changes. *Thirdly*, A change is effected

from the ordinary occupations, habits, and scenes. *Fourthly*, The regularity usually observed by good company at sea, in respect to the hours of repose and early rising, is extremely conducive to the restoration of general health, and especially so in cases of Hepatic disease and Dyspepsia. *Fifthly*, The absence of all business or occupation, and the trifling away of time in calculations on progress, &c. keep the mind relaxed, which tends to restore health. *Sixthly*, The regular walk on deck, taken when a sitting posture long continued becomes unpleasant, promotes vascular action, and tends to the improvement of delicate health.

393. Change of air has in all ages been lauded for the striking advantages it confers on deranged health. In looking rationally at this question, however, be it remembered, that the change, to be very advantageous, must generally embrace many others besides that of air: change of scene, of occupation, discourse, associations, amusements, food, dress, exercise, and modes of passing leisure time; all these, with change of air, must operate very powerfully in the restoration of health.

394. Regimen. A restricted use of nutritious solids and fluids, is one of the most powerful means we possess of effecting a salutary change in the animal functions; and although it is often the last resorted to, yet it is the first pointed out by nature. An individual in full health uses a certain quantity of solids and fluids daily; but when illness attacks

him, he cannot do so, nutriment becomes loathsome, and is no longer digested if taken, but becomes a source of irritation and febrile action.

395. In cases of lingering or tedious illness, if health becomes only to a certain extent restored, or there is a long continued state of valetudinarianism, what is to be done? Force a condition of health by good cheer? That may do in cachectic and certain other cases; but where the case is doubtful, i. e. the diagnosis unknown, it is the less safe course, and it would be certain destruction in a case of hepatic disease. Fix the precise amount of solids and fluids for each meal, at one half or one third of the usual quantity taken previously, regulate the hours of repose, exercise, and amusements, i. e. decrease the first, and increase the two last.

396. By this course, the gastro-intestinal tube, and its related organs, are relieved from the labour of preparing, assimilating, and discharging, an unnecessary quantity of nutriment; the excess of fat deposited in various parts of the cellular tissue becomes absorbed: thus engorged and obstructed parts are placed under contribution, and the impeding materials or parts pass away by absorption. The congested tubes, again rendered pervious, reassume their ordinary functions. If the restricted diet be perseveringly pursued for several months, the body loses its excess of fluids and fatty matter, becomes what is termed lean, and, in fact, the

cellular tissue throughout the system is unloaded, and the volume of circulating fluids is decreased.

397. CHANGE FROM A WARM TO A COLD CLIMATE. Experience has made the debilitating effects of long continued inter-tropical residence too generally known in the present day; and the tendency to the production of hepatic disease thereby generated is admitted by all. The vital energies decline, the skin tarnishes, the muscular fibre loses its tone, and the blood-vessels become dense, firm, and unyielding, as if the individual had attained more advanced age. The calibre of the venous system of vessels enlarges; the skin exhales a greater quantity of perspiration; the fluids consumed in one day greatly exceed the amount used in cold climates; and the pulse, on the slightest exciting causes, is accelerated to a febrile state, and ranges above a hundred.

398. Increase of temperature expands atmospheric air, consequently, the volume inhaled at ninety degrees, and that inhaled at forty-five, must necessarily contain very different quantities of oxygen gas; and thus differing in temperature, it also differs in its constituents; hence the one and the other will produce very different effects on the whole system; the one being stimulant and reviving to the vital energies, the other depressing them. In other words, the blood in one case is properly supplied with oxygen, in the other, it is not, and consequently, an excess of carbonic acid remains

in the blood, to the injury of health. Europeans in India are well aware, that the longer their stay is protracted, the more acutely and severely are the depressing and relaxing effects of the weather felt. Hence, every succeeding season is more severe than its precursor on the old residents.

399. In early life, the season of hope, the buoyancy of the youthful mind, acting conjointly with the unimpaired contractility of fibre, muscular and vascular, enables the individual to return anew to his series of daily labours; and the body seems scarcely to suffer from the combination of destructive causes unceasingly arrayed against it, and silently working its destruction,—from excessive heat, excess of diet, exposure to the sun and to insalubrious winds, fatigue, want of repose, intemperance, disregard of the gastro-intestinal function, irregular habits, excess in the use of fluids, and too frequently, dissolute habits. Yet, for a time, the mind and frame of youth withstand the assault of this hostile phalanx; but with advanced life, youthful elasticity is exchanged for rigidity of fibre, and buoyancy of mind for that tendency to doubt, which experience and disappointments necessarily imprint on age.

400. Then, the infirmities of declining life are prematurely introduced, by affections resulting either from previous habits, from the long-continued effects of heat, or from a combination of the causes just enumerated. Happily, under those circumstances, a climate more genial and cold

usually restores health. In the progress of this measure, numerous advantages accrue ;—*First*, the benefits of a sea voyage ; *secondly*, the society of relations in Europe ; *thirdly*, the disappearance of an habitual thirst, and a return to the moderate use of fluids ; *fourthly*, regular exercise ; *fifthly*, agreeable occupation ; and last, but not least, the effects of a cold climate on the corporeal systems, and on the mental faculties.

# PART II.

## SECTION I.

### ABRIDGED CASES OF HEPATIC DYSPEPSY.

(1.) ÆTAT. 55.—Forty years in India. Married, middle stature, dark, healthy appearance, habitually prone to excesses. Admitted with tremors, vomiting and purging, which commenced four days since, occasioned by fourteen days of unvaried intemperance. Pulse 104, natural calibre, soft; constant nausea and vomiting, nothing remains on the stomach. Tongue clammy, furred, and excited; skin natural; borborygmi; urine scanty, natural; cannot eat. R. acid. nitric. et muriat āā ʒss. Tinct. opii ʒij. aquæ oryzæ lbij. Sumat ℥ij. 4$^{is}$ horis.—2d day. Better.—3d day. Vomiting continues. Bowels regular. Pulse 100, small, and compressed. Twenty-six leeches to the pit of the stomach and anus. Emplast. canth. scrob. cord. Fotus frequenter. Omit. mist. acid. nitro-muriaticum. Sum. mist. nitro-ammoniat. ℥j. 2$^{is}$ horis.—6th day. Better.—7th day. Bilious vomiting returned. Pulse 90, large, and soft. A mild saline purgative. The neutral saline mixture, and chicken soup continued.—8th, 9th, and 10th days. Better, yet weak, and vomits occasionally. Con.—11th day. Easy, but vomits at times; pulse small, and soft; skin cool; tongue furred, dark brown. Emplast. cantharid. scrob. cordis. Wine and sago; red wine 4 oz.—12th to 15th days. Used beer and port wine, with other cordial stimulants

and remedies, but he gradually became worse, and expired on that day.

*Examination* twelve hours after death. At the base of the brain all the capillaries are strongly injected, especially over the pons and medulla oblongata, and so are the vessels of the pia mater, between the cerebral convolutions, and those of the cerebellum; slight effusion between the cerebral convolutions. The pia mater of the cord is thickened, and its vessels red from the superior part to the centre: the inferior part has its vessels dilated, and blue from engorgement. The equinal nerves are injected. The mucous membrane of the great air tubes is red, but this appearance ceases in the smaller branches. There are considerable effusion into the air cells and tubes, and extensive adhesions between the pulmonary and thoracic pleura, yet the lungs are tolerably collapsed. The heart is loaded with fat; the left ventricle thickened and empty; the left auricle dilated; the right cavities dilated and empty. A small coagulum, the greenish yellow colour of pus, adheres to the tricuspid valves, and extends into the auricle. The vasa vasorum of the aorta and carotids are strongly injected; the lining of the aorta is like mucous membrane. *Abdomen.*—The tongue is flaccid and livid; the œsophagus internally dark. Mucous membrane of the stomach is flaccid, and of the dark greenish blue that indicates the early stage of decomposition. It is marked by a series of red points, and held before the light, its great and capillary vessels are minutely injected; no rugæ. The mucous membrane of the duodenum and jejunum presents nearly similar characters, and the capillary injection is extended nearly throughout the ilium. A few honeycomb ulcers are observed pale and elevated; the last seventeen inches of the ilium has its vessels strongly injected; the cæcum and colon are stained with bile. The liver is of the usual colour, but firm. The external coats are readily detached; dark areolæ surround the ramifica-

tions of the vena porta and artery, but not those of the hepatic vein. The gall bladder, ducts, and pores are full of bile; two ounces and a half of dirty green aqueous bile in the gall bladder. The spleen is flaccid; the kidneys tumid, and their tissue dark from engorgement. The pancreas is excessively indurated, and its capillaries gorged: the omentum is loaded with fat, like that of a drunkard.

*Observation.*—From the appearance detailed in this dissection the diagnosis should have been, "partial abdominal and cerebral congestion from excessive use of stimuli." The *indications of cure* are, First, To remove congestion and irritation. Secondly, To equalize the distribution of blood. Thirdly, To reproduce healthy vascular action. The means used to effect these objects must vary according to the constitutional powers and resources. When depletion is contemplated, the age, sex, temperament, volume of the body, previous diseases, usual health and habits, should be collectively and carefully considered, because they regulate its extent. On the other hand, scrutinize and ascertain the extent of congestion and irritation, because remedies should be accurately apportioned to existing evils. In healthy young subjects, mild cordials, occasional laxatives, and care, speedily effect the cure. As the constitutional powers progressively decline with age, the danger increases, as may be seen in the present case.

The *first indication* might be thus effected, First, Shave the head, and apply cold. Secondly, Provided the pulse is very full and firm, prescribe a small general bleeding, which can be repeated according to the symptoms; but where the pulse does not indicate its necessity, it should be omitted. Thirdly, Apply leeches behind the ears and at the base of the scull, to unload the cerebral capillaries, and subsequently around the anus, to relieve the abdominal circle. Fourthly, A warm bath (2d or 3d day) will determine the blood to the surface, relieve the internal system of vessels,

and promote capillary action. Fifthly, Prescribe mercurials occasionally to stimulate the hepatic function. Sixthly, The occasional use of cordials, opium, and æther, is usually successful, especially with the young and healthy. The *second indication* of cure is powerfully promoted by the foregoing remedies. In addition, blisters between the shoulders and at the pit of the stomach, with champooing, and subsequently sinapisms to the feet and legs will effectually withdraw the determination and irritation from the cavities, and equalize the distribution of blood. The *third indication* is to be effected by care generally, and attention to the functions of the skin, and the gastro-intestinal tube. Avoid exposure to draughts of air, unhealthy winds, and solar heat: remain in a room properly ventilated; wear flannels; and keep the bowels free, by an occasional enema and mild laxatives. Repose, quiet, cool, air, effervescing draughts, severe regimen, and subsequently the use of broth and soups, regulated until a mild nutritious diet becomes advisable, are further requisite. When congestion and irritation are sufficiently removed by those means, the only remaining disease will be debility of the stomach, and prostration of strength: mild tonics, gentle exercise occasionally, change of scene, attention to diet, and the gastro-intestinal function, are then the best remedies.

(2.) Ætat. 44.—Nineteen years in India. Tall, muscular, and healthy, yet an habitual drunkard, and only once previously in hospital from pain in the chest. Nausea, giddiness, and pain at the pit of the stomach, with loss of appetite these last three days. Pulse 80, soft. Tongue furred brown, skin warm, bowels costive; has been recently drinking to great excess for several days. Ipecac. ℈j. statim. Calomel gr. v. cum antimon. tart. gr. ss. Ol. ricini ʒvj. et ol. terebinth. rect. ʒij. mane.—2d day. Pain at the epigastrium, and a little hardness of the pulse. General

bleeding; a blister, and calomel ℈ss.—3d day. Better; a purgative.—4th day. Better; effervescing salines.—5th day. Palpitations constant and troublesome. Pulse 104, natural, soft. Hirudin. xvj. lateri sinistro, et xij. lateri dextro. Quarter before 10, P. M., called to, and found him in articulo mortis: he expired in a few minutes. The death was equally unexpected and sudden. A few minutes previously he had been conversing freely with his comrades on his domestic affairs.

*Examination (in presence of George Adams, Esq., superintendent surgeon)* twelve hours after death. The body is not emaciated, nor preternatural in appearance. The vessels of the pia mater dipping between the convolutions, and of those parts enveloping the base of the brain, and medulla oblongata, are engorged with blood. Fluid is contained in the spinal theca; and the vessels on the lower part of the cord, especially on the posterior surface, are gorged with blood. *Thorax.*—The pulmonary pleura adheres firmly to the costal, and to that of the diaphragm, especially on the right; both lungs, especially the right, are distended with blood, and the surfaces of sections resemble livid muscular tissue. Mucous membrane of the trachea and air tubes red; its capillaries engorged, and the air cells and bronchial tubes are filled with red spumous fluid. The heart is flaccid and thin; the right ventricle natural; right auricle dilated. Interior of the aorta red, and so is that of the innominata and carotids. From the cœliac to the bifurcation of the iliacs the surface presents a series of white elevations and depressions, as if it had been ulcerated, healed, and as if now consisting of a large, uneven, and irregularly contracted scar.—*Abdomen.* Mucous membrane of the stomach, at first thin and pale, then becomes dark throughout the large curvature, and again it is pale; mucous coat is easily removed by scraping. Passing the pylorus, the mucous membrane is a pale livid tint, corrugated,

and that of the ilium has honeycomb ulcers. The interior of the cæcum and large intestines is stained with bile. The liver is natural in size, adheres very extensively to the diaphragm, especially on the right; is mottled, pale, and dark purple, indurated and firm. A large scar on the convex centre of the right lobe, and there the tissue is extremely firm. Sections are pale throughout, and do not emit blood; spleen of the natural size, but gorged. Kidneys small, dark, and gorged.

*Observation.*—The diagnosis of this case was hepatic congestion, with gastro-intestinal irritation. The preceding case has annexed to it a view of the general principles that should govern the practice. The bleeding was employed from the fear of hepatic disease. After death, I thought it had been injurious. It appears to me that local bleeding only was indicated in this case; and, perhaps, blisters, cordials, and laxatives, with the warm bath, keeping the head cool, might have produced a very different result. These cases often terminate *fatally and unexpectedly, like cases* of nervo-bilious fever.

(3.) Ætat. 25.—Two years in India. Came under my care after sixteen days' treatment for dyspepsy from intemperance. Pain in the chest and epigastrium; nausea, vomits his food; general debility. Pulse 90, soft. Tongue and skin natural; bowels irregular and loose; has been blistered repeatedly. Ipecacuan. ʒj. omni mane sine bibendo.—6th day. Medicine not always retained; pain of the right side relieved by a blister.—7th day. Purging and vomiting; relieved by an opiate.—8th day. Pulse 94, intermitting every third beat; restlessness and anxiety. Venæsectio ad ℥xij.—9th day better. Pulse regular 104, soft. Tongue clammy, skin moist, abdomen tense and painful. Calomel gr. x., opii gr. j. horâ somni. Ol. ricini ℥ss. mane; hirud. xl. abdom.—10th day. Restlessness, frequent muco-san-

guineous dejections.—11th day. No improvement.—12th day. Slight strangury, tenesmus; pulse 102, large and soft. Tongue clammy; skin moist; dejections copious, yellow and contain a little blood. Suppositoria. Pil. hydrarg. gr. x. horâ somni. Ol. ricini ℥ss. mane. Port wine ℥iv.—13th day. No improvement, extremities cold, tendency to sinking.—19th day. The tongue became extremely red, the dejections changed from yellow to green, and then became coffee-like. The pulse continued soft throughout. Wine, opiates, blisters, ol. ricini and pil. hydrarg. were used fruitlessly.

*Observation.*—The body was not examined, owing to very constant occupation in attending cholera patients. This case was gastro-intestinal, resulting from hepatic, disease.

(4.) Ætat. 23.—Eight months in India. Muscular, fair, pale. Pain in the top of the head, giddiness on sudden motion; weakness of the eyes and nausea, eructations, want of appetite, foul taste, borborygmi; sleepless nights; thirst; bowels open. Pulse 94, very large, round and full, not hard. Tongue furred, with red margins; skin natural. Venæsectio ad deliquium. Calomel ℈ss. Pulv. rhei ℈ij. cras.—2d day. Little change. Ipecac. ℈ij. omni mane, sine bibendo.—3d day. Pain of the head, otherwise well. Venæsectio ad deliquium. Blood black, tarry, sizy, and cupped. Con. ipecac.—4th day. Better. Emplast. cantharid. inter scap.; con. rem.—5th day. Improving. Con.—10th day. Continued the remedies with advantage.—11th day. Pain still felt at the top of the head from the anterior to the posterior fontanel, augmented by pressure. Con. rem.—hirud. viij. p. d. omni die.—21st day. Discharged.

*Observation.*—This is a well marked case of hepatic congestion, producing dyspepsy, and the premonitory symptoms

of hepatitis: that condition was promptly removed by depletive measures.

*Readmitted* six weeks afterwards, with loss of appetite, prostration of strength, looseness of the bowels, and pain in the head. Pulse 110, round; skin moist; tongue furred, moist. Venesectio ad ℥xxx. et ol. mane.—2d day. A little better. Hirud. xx. temporibus. Calomel gr. x. et ol. mane.—3d day. Con.—Emplast. cantharid. nuchæ.—5th day. Gums tender. Omit. med.—7th day. Mouth sore; no other complaint. Ol. ricini ℥ss. p. r. n.—19th day. Pain of the head returned these three days, and augments as the sun approaches the meridian; eyes very painful. A succession of blisters over the sagittal nature. Sulph. zinci gr. ij. Pil. hydrarg. gr. iv. M. bis die.—22d day. Cramps in the toes and ankles.—26th day. Pulse 120, large and soft; tongue clean; skin natural. Feels very ill, bowels open from oil, urine pale, blister discharging. Con.—35th day. Urine like infus. cinchon. flavæ. Haust. salin. nitro-ammoniatus, bis, terve in die. Omit. pil. et con. ol.—40th day. The urine has continued opaque.—70th day. The blisters have been repeatedly applied; the bowels kept open, and regimen observed; the urine has become pale, but is turbid at times; pain of the head is occasionally severe, and the general health is not improved.—130th day. Still weakly, and complaining.—160th day. Pain of the head returns at times.—190th day. Health not improved. Transferred.

*Observation.*—The opposite effects produced by two different courses of treatment pursued on the first and second admission are very prominent in this case. On the first admission the case was treated as hepatic dyspepsy, with depletives and mercurials, and the patient was discharged on the 21st day. On the second admission the depletive measures previously employed rendered the symptoms of hepatic engorgement extremely obscure. The case was

then viewed as gastric disorder, and treated accordingly. The duration of disease, the cramps, urine, &c. indicated that congestion of the portal vessels had terminated in hepatic abscess. Depletions and mercurials were improperly omitted. If on readmission due reference had been made to the early treatment, and the diagnosis based on that history, and the new symptoms, it would have been entero-portal, resulting from hepatic, congestion. In this case, general and local bleeding, mercurials and blisters, should have been promptly used to remove engorgement; abscess would not have taken place, and a permanent cure would have been effected in forty, or, at farthest, in sixty days.

(5.) Ætat. 24.—Six years in India. Fair and delicate. Debility and precarious health from a severe intermittent; mercurials and purgatives had been largely used, and the present derangement appears to result from the effects of those remedies. Quinine and neutral salines were used moderately for twenty days, and the patient recovered. Ten days afterwards, a slight return of fever was again treated by mercurials, purgatives, and antimonials; and violent symptoms of gastro-intestinal derangement brought the patient a second time under my care. Pulse 120, small, soft, and feeble. Tongue tremulous and excited, skin moist and cool, bowels regular, urine dark and scanty, sleeps, little appetite, great debility, mostly bedridden, constant retching. No medicine. Strict regimen, and no solids. A little whey, barley water, tea, or toast and water.—10th day. Pulse continues rapid, 115. Pain at the epigastrium, dejections muco-sanguineous. Hirud. viij. part. dol.—11th and 12th. Con. hirud.; Tinct. digital. g$^{tt}$ vj. omni 3$^{a}$ hora.—13th day. Con. calomel gr. viij. opii gr. $\frac{1}{4}$. Oleum ricini mane.—15th day. Better. Con. digital. g$^{tt}$ viij. —17th day. Omit. digital. &c. Carb. potass ℥ss. Aqua lbij. Acid. sulph. ad saturandum. ℥j. bis terve die.—

18th day. Still great debility and anxiety; the urine this day greatly increased, and deposits a sediment largely.—20th day. Jelly and decoctum seminum lini to be used.—25th day. Pulse continues 115; patient's strength improving, and sits up a little for the first time: has several times taken a three grains calomel pill at bed time. Urine mostly turbid.—30th day. Pulse 120; strength improving, and takes exercise in a close carriage. Uses the neutral salines, other remedies discontinued; permitted to take animal food.—35th day. Pulse 120, small and soft; strength slowly improving; very reserved regarding diet; appetite and digestion good; bowels regular; urine turbid.—45th day. Very little change, slight amendment. Recommended change of air, and a sea voyage. This lady recovered perfectly.

*Observation.* The long-continued quickness of pulse, unconnected with any other febrile symptom, marks this as a singular case. Regimen, neutral salines, laxatives, and occasional mercurials, were used; and success justifies the practice. I apprehend that some organic change took place in the course of the remittent fever, which maintained the quick pulse; this change must have been in one of the cavities, but the symptoms were not sufficiently marked to fix its precise seat. The turbid urine afforded no conclusive diagnostic evidence, as it was not milky or purulent. The most minute examinations were made repeatedly, without the discovery of ground sufficiently satisfactory for the basis of a diagnosis. I am not certain that the digitalis was useful; the neutral salines were advantageous, but, above all, the patient's unshaken confidence led to her recovery.

(6.) Admitted from intemperance. Cramps in the legs and feet. Pain in the stomach, nausea and vomiting, cannot sleep or eat, loss of strength, borborygmi. Pulse 100, small

and firm. Tongue clammy. Skin wet and cool. Venæsectio ad deliquium. Calomel gr. xv. opii gr. j statim. Frictions.—Post venæsection. emplast. cantharid. inter scapulas.—6th day. Improved till this day; the arm bled has swollen, fever set in, with violent pain of the head, vomiting, and prostration of strength: hirud. xij. temporibus et xij. brachio, postea fotus.—12th day. Leeches were used daily. Calomel gr. iv. Pulv. antimon. gr. viij. omni nocte. Great pain and swelling of the arm continued, profuse sweats. Pulse 118, soft. Decocti cinchonæ ℥ij. Tinct. cinchonæ, ʒij. M. ter die. Hirud. vj. brachio statim. —16th day. The profuse sweats have continued; occasional delirium; a tumour formed on the elbow. Pulse 120, very large and soft. Tongue tremulous, thirst, and restlessness. Skin pours forth perspiration profusely. Mist. acidi sulphur. pro potu commune. Sulph. quiniæ gr. iv. febre abeunte bis terve.—20th day. Has been delirious every day. Pulse 122, very soft, smaller, yet large. Tongue red, arid, and polished. Skin warm, less pain of the arm, large tumours formed under the ear on the side affected, and were cut into, but no discharge. Milk diet. Pulv. antimon. gr. v. bis die.—21st day. Cut a soft tumour on the left elbow, which discharged three oz. of fluid resembling viscid whey.—25th day. Punctured tumours under the left ear and on the arm, but no fluid obtained from them. Fever occasionally, some improvement, delirium rare. Pulse 88, soft. Tongue moist, with brown fur; skin cool; sleeps a little. Con. pil. antimon. Sulph. quiniæ gr. iij. bis febre abeunte.—30th day. Very weak, but improves slowly.—32d day. Again pain in the arm, hirud. viij. p. d. et Con. med.—39th day. Again pain in the arm, hirud. xij. et Con. med.—45th day. Improving.—50th day. Better.—53d day. Again pain, hirud. vj.—59th day. Discharged.

*Observation.* Originally this case was gastro-intestinal congestion and irritation from intemperance. One of the

hospital assistants used a rusty lancet, bled the patient over largely, (℥60) and phlebitis set in; the very great debility consequent on such an extensive bleeding deterred me from cutting down on the diseased vein. I believed that careful treatment, in an extremely debilitated case, would afford greater chances of recovery than would be derived from removal of the diseased vein, complicated with an extensive wound; because sloughing might occur. Under ordinary circumstances, the removal of the diseased vein is a preferable course.

(7.) Ætat. 30. Admitted from an accidental fall; for which leeches, fomentations, and laxatives, were prescribed; and after five days' treatment, discharged. Six months afterwards readmitted, after a surfeit. Pain and oppression of the chest, bowels costive, urine scanty, cannot sleep, no appetite. Pulse 80, small, hard, and compressed: skin hot; tongue furred; nausea, borborygmi. Venæsectio ad ℥x. Calomel gr. x. Ol. ricini, ℥ss. mane. Deliquium took place, when ℥viij of blood were drawn; and after five days' treatment with laxatives and neutral salines, he was discharged.

*Re-admitted* two months afterwards, from a surfeit. Spasms of the lower extremities, nausea, retching, heaviness of the chest. Pulse 100, small and hard. Tongue clean and moist. Skin pouring forth cold perspiration. Bowels loose. Urine very scanty. Had cholera twice, and now fears it. Venæsectio ad ℥xxiv. statim. Calomel gr. x. Opii gr. j. post V. S. Warm clothing and frictions. —3d day. Hirud. viij. circum anum.—4th day. Weak. Urine turbid, milky, and opaque. Pulse, tongue, and skin, natural. Bowels open. Ipecac. gr. j. tertiis horis. —7th day. The urine has continued opaque: the patient is well, and desires to be discharged.

*Re-admitted* two months afterwards. Pain across the

temples, rigors, flushes, pain at the epigastrium, costiveness. Pulse 110, small. Skin warm and dry. Tongue white, much thirst. Urine dark; ill for some days from intemperance. Hirud. xvj. fronti. Calomel et pulv. antimon. āā gr. vj. h. somni. Pulv. jalapæ comp. ʒj. mane. —2d day. No improvement. *Diagnosis.* Hepatic abscess. Too late for general bleeding, as indicated by the pulse and absence of pain. Hirud. xxx. immediately over the liver. Empl. canth. vespere. Mist. nitro-ammon. ʒij. ter die. Calomel gr. vj. Ant. tart. grss. horâ somni.—6th day. Urine turbid, purulent, and opaque, these two days. Hirud. j. apud anum omni die, Omit. calomel, gr. iij.—9th day. Urine equally purulent and opaque; considerable pain and oppression of the thorax. Diagnosis. The abscess enlarging upward to perforate the diaphragm. Hirud. xx. part. dol. statim; emplast. mag. cantharid. vesp.; con. rem.—10th day. Breathing embarrassed. Pulse full, large, and soft, 106. Venæsectio ad deliquium. Calomel gr. x. Antimon. tart. grss. M. hor. som. sumend. Con. mist.; Omit. alia. Twelve ounces of blood drawn.—11th and 12th. Improving. Urine opaque. Omit. calomel gr. vj.—20th day. The urine continued opaque, till within the last two days. Discharged.

*Observation.*—The first reception report shows that he was at that time free from liver disease; the second report presents gastric derangement from hepatic congestion; the third offers congestion in both extremities of the portal system, and most probably hepatic abscess. The partial collapse on re-admission, and the subsequent purulent urine, indicate that pus from an abscess had at that time entered the circulation, and produced the sinking or collapse. The patient was prematurely discharged. The fourth admission report shows hepatic abscess; first, hepatic abscess had existed two months before, and it would seem to have continued during that period, with little change;

secondly, the depletive measures speedily removed the stage of congestion, and the pus passed off by the kidneys; thirdly, health was restored progressively, with the continuance of purulent urine. Fourthly, this case proves the connexion between gastric and hepatic affections, or, in other words, the intimate relation that subsists between congestion in one portion of the portal vessels (the hepatic), and congestion in the abdominal portion of the same vessels.

(8.) Ætat. 30.—Thirteen years in India. Within the first two years attacked with dysentery, which returned a second and third time, leaving him debilitated, with seromucous purging. These attacks were repeated frequently for nine years. Latterly subject to attacks of remittent fever, and on that account took a voyage to the Isle of France, and had good health for two years. Eats only at dinner, always moderately, and dines about three, P.M.; takes walking exercise, and feels the meal digested at seven, P.M. Sometimes one regular dejection daily for weeks; but the bowels seldom remain regular for more than three or four days, and frequently not so long; mostly uses Cheltenham salts. Appetite good, digestion bad, bowels costive, urine natural whilst the bowels are regular, but highly coloured if costive. The abdomen tense, and some inquietude when the stomach is full; relieved a little by the horizontal position, and elevating the legs: cannot sleep with food in the stomach. When the stomach is empty, feels a weight, with sense of cold and sinking, as if something cold filled the abdomen. This sensation is very distinct after dejections; there is also a sensation as if something remained to be passed, without the power to do so. The sense of weight and heaviness always distinct and severe when the body receives a jerk from a trip of the foot; and pain of a minute's duration shoots from the

cæcum towards the stomach. This pain disappears in the right side. Slight sense of uneasiness and pain on pressure over the lower part of the sternum, with an occasional momentary stoppage of the breath, requiring change of position, which removes it; a tickling in the throat, causing a slight inclination to cough. Thorax natural, lungs permeable; heart's action extensive and dull.

*Diagnosis.*—Hepatic and mesenteric obstructions, thickening of the peritoneum, with tendency to adhesion of all the abdominal viscera, and formation of tubercles in the mesentery and peritoneum; also a tendency to serous effusion into the pericardium (if not already taken place) and into the abdomen.

*Treatment.*—Empty the abdominal and intestinal capillaries by the occasional application of leeches over the abdomen and around the anus. Avoid capillary engorgement, by abstinence from wines, rich diet, full meals, or copious draughts of fluids, and keep the bowels freely open. Promote cutaneous exhalation by flannels. Invigorate the system by regular exercise in a cold climate. Use sickening doses of ipecacuanha, alternated with hydriodate of potass, to remove obstruction; avoid intercourse; change the climate; and travel.

*Observation.* — The symptoms improved within three months; previously, abdominal pressure would have been intolerable. During this period, a very spare diet, and little or no wine, have been substituted for the ordinary course. He went to Europe, and recovered.

(9.) *Dyspepsy the consequence of sundry diseases and scurvy.* —Ætat. 32.—Eighteen years in India, delicate; subject to intermittent liver complaint, and enlargement of the spleen; also had severe remittent and dysentery. At Rangoon suffered bilious remittent and dysentery, followed by acute rheumatism. Now, emaciation, pallor; mind depressed;

pains in the loins, lancinating through every joint of the body and limbs, accompanied by a stiffness of the joints, especially the elbow, which is thickened, and incapable of flexion and extension; pains felt day and night, but are most severe at night, and occasion constant restlessness. An obstinate foul ulcer on the left wrist, with a copper-coloured margin, and one on the left arm, of the same character, that commenced by livid spots, and desquamation of the centre. The gums are swollen, pale, spongy, and ulcerated. Interior of the mouth pale and bloodless. Tongue bloodless, pale, livid, with slight fur; skin cool. Pulse 104, soft, feeble, accelerated at night, with increased temperature, and constant profuse perspiration. Appetite and digestion very bad, borborygmi, flatulency; passes two or three fluid dejections daily. Urine scanty, high-coloured; cannot sleep. Both lungs in points imperfectly traversed, the right most so; heart's action large, extensive, (over all thoracic parietes) and dull superiorly. No abdominal pain on pressure.

*Diagnosis.*—Partial pulmonary engorgement; hydro-pericardium; vitiated fluids; nervous, capillary, and digestive derangement.

*Treatment.*—Pulv. ipecac. et flor. sulph. āā gr. v. in mel. omni mane, jejuno ventriculo, sine bibendo per horas duas. Pulv. cinchon. ʒiss., Nitr. pot. ℈ij. Rad. gentian. incis. ℈j. M. et infunde aq. fervent. ℥iijss. stent simul per horas duas in vasculo clauso et cola. Sumat ℥iij. liquoris colat. omni die 11ª hora, jejuno ventriculo. Pil. hyd. gr. iv., Pulv. ipec. gr. v. M. in pil. ij. omni nocte hora somni sumendæ. Wine to be used moderately; keep early hours; abstain from all laborious duties and avocations, more especially those customary and professional; avoid all causes of debility and exhaustion; take gentle but regular exercise at fixed hours; and, when health becomes sufficiently recovered, frequent public amusements. Meals to be plain and mode-

rate; flannels; use the hot bath occasionally. Travel. Visit and reside for some time in Europe.

*Observation.*—This individual's constitutional derangement, and general ill health, rendered a certain residence in a cold climate requisite to restore a healthy state of the functions. He went to Europe, recovered, and was enabled to return to his duties.

(10.) *Dyspepsy simulating intermittent, resulting from several attacks of acute disease, and accompanied with chronic hepatitis.*—Ætat. 23. Seven years in India. Tall, muscular, fair complexion. Recently seventeen months on service in the Burmese country, and exposed to cold and wet, provisions being scarce and bad. Constantly harassed with duty and anxiety. Suffered formerly from hepatitis, but had no affection of that kind in Ava. Was seized suddenly with a looseness of the bowels, with swelling and hardness of the belly after eating; appetite not diminished. Giddiness usually coming on at ten every day, accompanied with a sense of horror, anxiety, and a dread of some unknown impending evil. The attack was preceded by nausea, followed by rumbling or borborygmi, and twisting of the intestines: the mental anxiety and distress confused the ideas. Attacked also with frequent flushes, accompanied by palpitation, and violently increased arterial action, which were usually relieved by perspiration. Emetics removed these symptoms: had pains at that time in the right side, under the lower ribs posteriorly. Having suffered from the beginning of November, he returned to Madras in December. Then looked well, but the complaint continued, accompanied with obstinate costiveness, that required medicine every night. Severe pains in the back of the head; and when no medicine was taken, had no evacuations for three or four days; yet he preserved the same appearance, and the appetite continued. Four months afterwards,

had cholera, was bled twice, recovered, and was sent to Bangalore for three months; returned to Wallahjahbad after that period. Ten days afterwards had a severe attack of intermittent; the paroxysm persisting from three till eleven, A.M. Feverishness continued, with excruciating pains in the head and loins, until bleeding and purgatives were employed.

Now emaciated, tongue pale, livid, and bloodless, with slight fur, but moist, usually foul; gums, and interior of the mouth and palate, pale and bloodless; the former swollen, and partly livid. Skin and thorax natural; heavy after meals; belly tumid; still subject to the borborygmi that came on in Ava; pain and rumbling on pressure over the cæcum and sigmoid flexure. Hears the heart beating in all positions, and can count the pulse by the sound. The mind at night not under control; whatever is read or discoursed of, continues the source of rapid mental investigation, without the power of dismissing the subject; movements natural; no thirst; appetite indifferent and capricious. Digestion bad; has a spitting, which came on spontaneously, some days ago. Bowels costive, obliged to take aperient medicines constantly, dejections muco-bilious. Lungs well permeated by the air; heart's action rather dull, large, and hard over all the thoracic parietes. Pulse 74, large, full, soft, and heavy. Urine deep-coloured; bile is either deficient in quality or quantity. Before the complaint always slept well, and was not annoyed with dreams; now cannot sleep, from unaccountable restlessness, and the sleep is quite unrefreshing, from dreams.

*Diagnosis.*—Hepatic and capillary derangement; patches of chronic inflammation in the intestinal mucous membrane; slight hydro-pericardium.

*Treatment.*—Pulv. ipecac., Pil. hydrarg. et flor. sulph. āā gr. viij. M. om. nocte sumend. in mel. jejuno ventriculo sine bibendo. Pulv. ipecac. gr. viij. hora decima, mane.

Leeches subsequently, if necessary, around the anus. Take ripe fruit freely, use chiefly vegetables, animal food sparingly; abstain from spirits, take good wine moderately; flannels; a tepid bath occasionally. The patient remained in a precarious state till he took a voyage to Europe, and then he recovered.

*Observation.*—The remarkable points of this case are: *First*, The commencement of ill health from exposure, harassing military duties, and bad provisions, 2*dly*, The accession of tympanitic complaint, with looseness, under these circumstances: which was the ordinary mode of invasion observed there in Ava during the prevalent scurvy. 3*dly*, Daily periodical occurrence of giddiness and agitation, preceded by nausea and borborygmi. 4*thly*, The accession of flushes and palpitation, accompanied by hepatic symptoms. 5*thly*, Costiveness and hepatic symptoms succeeded the fourth period, and continued for some months. 6*thly*, An attack of cholera. 7*thly*, An intermittent. 8*thly*, General debility of the vascular and nervous systems, with gastro-intestinal and hepatic derangement. This case is an additional illustration of the varied sources whence dyspeptic complaints arise, and the variation of characters which they progressively assume.

(11.) *Dyspepsy consequent on hepatitis.*—Ætat. 22.—Five years resident in India. Tall, robust; recently returned, after thirteen months' service at Rangoon. Originally subject to a determination to the head, and fever; free habits of living. Ill at Pegue with quotidian, was reduced, and in consequence returned to the peninsula. On return, experienced a severe attack of difficulty of breathing, and heavy pains of the right side. Leeches, bleeding, and blisters, were used to the chest and side, with mercurials and purgatives. A slow convalescence ensued, and then a similar attack, that was removed by medicines, without

blisters or bleeding. During the four months that have elapsed since, has been constantly afflicted with pains of the head, chest, and of both sides; also of the loins and of all the large joints; no appetite; digestion bad, bowels irregular, either costive or purged; urine scanty and high-coloured; sleeplessness. Nocturnal flushes, mental dejection, and bodily debility, with a craving for the use of spirits.

At first sight he appears in health, but there is mental dejection, with heaviness in the countenance, and a dark margin round the eyes, marking the chronic stage of dyspepsy. Though apparently stout, it is from puffiness, and not the elastic fulness of health. Thirst constant; pulse 90, large, full, and soft. Tongue livid, with a short close fur. Skin natural. Thorax deformed, especially the right; that side sounds rather dull, and the lung is less perfectly permeated than the left. Heart's action dull, and surging over all the thoracic parietes.

*Diagnosis.*—Slight hydro-pericardium; hepatic, nervous, digestive, venous, and capillary, derangement.

*Treatment.*—Pilul. hydrarg. gr. viij. carb. ferri et flor. sulphur āā gr. vj. M. mane sumend. omni die in mel. Ipecacuan. ʒss. omni nocte hor. som. sumend. jejuno ventriculo. Strict regimen, and subsequently a sea voyage. This measure being adopted, he recovered partially.

*Observation.*—This case is extremely common; intemperate habits having induced hepatic disease, the individual acquires an increased disposition for the use of spirits in the subsequent stages of debility. The digestive organs are perpetually supplied with stimulant draughts, which irritate and exhaust the capillaries, the follicles, and the nerves distributed to the mucous surface; and which, passing partly through the portal circulation, incessantly excite the liver, and cause it to assume chronic or acute disease. I regret not having used depletion, as, that measure being omitted, medicine could do little.

(12.) Ætat. 41.—Seventeen years in India; small stature, slender, fair. Ailing the last year with thoracic disease, having been discharged four days, and constantly engaged in excesses, re-admitted. Pulse 100, quick, full, and soft. Tongue foul. Skin warm. Mist. purgans, statim. haust. anodyne horâ somni.—2d day. Pulse 96, small and soft. Empl. canthar. inter scapulas.—5th day. Frequent yellow dejections. Urine scanty, tenesmus; anxiety. Pulse 128, large and full; no appetite. Tongue and skin natural. Venæsectio statim. hirud xj. circum anum et perineo. postea fotus. Suppos. opii gr. j. p. r. n. —6th day. Better. Haust. card. ter.—8th day. Countenance sharp, and of a peculiar bright copper colour. Urine like stale Decoct. cinchonæ rub.; opaque, with great deposit; much purged. Pulse 108, large and full, yet soft. Venæsectio ad ℥x. Mist. nitro-ammon. ter.—9th to 12th day. Urine purulent; leeches and wine used daily.—20th day. Pus still passing; leeches, neutral salines, and wine, used.—25th day. Purulent urine continues; the lower extremities œdematous, and large pustules have appeared over the trachea, others smaller over the face.—30th day. The urine is still purulent; œdema continues; the purging disappeared.—35th day. Purulent urine and œdema; bowels loose, dejections clayey; face puffed. Pulse 84.—40th day. No change.—45th day. No change.—50th day. Little change.—55th day. The œdema is gone. Urine pale saffron colour, turbid, not opaque. Pil. hydrarg. has been used latterly every night, and one leech at the anus.—60th day. Urine very copious, little deposit.—62d day. Transferred, for removal to the Neilgherries; the turbid urine and œdema removed, and the general health much improved.

*Observation.*—This case, although presenting originally mere symptoms of dyspepsy, was in effect hepatic abscess in a chronic stage. The success derived was from the

continued use and alternation of depletion, stimuli, laxatives, diet, warm clothing, and constant care.

(13. Ætat. 37.—Middle stature, muscular, bilious temperament. Intemperate. Admitted after a surfeit. Pulse 80, small, soft, feeble, and irregular. Tongue tremulous, brown and clammy, or dry. Skin cool; nausea; cannot eat or sleep. Haust. card. 4$^{tis}$. horis. Calomel et extr. col. comp. āā gr. x. horâ somni.—2d day. Has been delirious, previous and subsequent to admission; medicines not operated. Pulse 84, small, hard, feeble, and surging. No sleep. Tongue white; skin natural; placed under control. Venæsectio ad deliquium; postea emplast. cantharid. inter scapul. Mist. nitr. ammon. ℥ij. ter die. Ol. ricini p. r. n.—8th day. Discharged.

*Observation.*—Cordials were first administered to stimulate the stomach mildly. When the pulse indicated dangerous congestion, the general mass of blood was freely reduced; and a blister applied to stimulate the vascular system, and equalize the circulation. The neutral salines and laxatives were subsequently used to remove irritation, and to promote the functions of the gastro-intestinal surface, the kidneys and the skin. The head was shaved, and kept cold by frigid applications.

(14.) Ætat. 32.—Eight years in India. Full size, fair, and muscular; head ache, trembling, clammy cold sweats. Antimon. tart. gr. ij. were given on admission, which operated violently, and discharged a large quantity of undigested food; cramps of the lower extremities, and collapse then took place. Calomel ℈j. Opii gr. ij. statim; diffusible stimuli. Emplast. cantharid. inter scapulas, et scrob. cordis. —2d day. Pulse 100, large, full, and strong. Venæsectio ad ℥xxviij.—3d day. Better. Ol. ricini ℥j.—6th day. Occasional cramps. Hirud. viij. circum anum.—7th day.

Improving; cough occasionally. Ipecac ℈j. om. merid.—14th day. Discharged.

*Observation.*—This individual was re-admitted with bilious fever, (see Case No. 28), and again with chronic hepatitis. (Case No. 186.) The antimonial, however useful in evacuating the stomach, may have superinduced the collapse. The prudent use of cordial carminatives, and occasional stimuli, with bleeding, local or general, according to indications, cold to the head, a casual enema, and laxatives, would have been a preferable course.

(15.) Ætat. 28.—Two years in India. Admitted delirious from intemperance. Pulse 108, soft; tongue clammy; skin soft. Emplast. cantharid. inter scapulas. Ipecac. et calomel ā ā gr. ij. hor. som. Strait waistcoat.—2d day. Much better.—3d day. Improving. Pulse 100, soft. Tongue and skin natural; no medicine these last two days; bilious vomiting last night. Mistura acidi muriat. pro potu commune.—5th day. Better. Misturæ nitr. ammon. ℥jss. bis. Vini albi ℥vj. in diem.—13th day. *Discharged.* Four days afterwards re-admitted from drunkenness; pain at the epigastrium, and in the head; vomiting and purging; pulse 90, small and hard; tongue white, skin hot and dry; urine scanty. Venæsectio ad ℥xx. statim, postea hirud. xvj. temp. et circum caput. Emplast. canth. epigastrio, hora somni. Calomel et ipecac. ā ā gr. ij. Pulv. rhei ℈j. mane.—3d day. Better; no medicine.—8th day. Discharged.

*Observation.*—On first admission, the pulse suggested the emplast. cantharid. instead of venesection. On the second admission, the pulse indicated depletion, and, that performed, healthy action was speedily restored by the stimulus of a blister, with attention to the gastro-intestinal functions.

(16.) Ætat. 28.—Tall and muscular; twelve months in India. Prone to intemperance; exposed to cold on guard; pain of the shoulder since; sleeps; no appetite; bowels regular; thirst; urine dark and scanty; pulse full; tongue furred brown; skin natural; occasional nausea. Pulv. jalap. comp. ʒj. statim,—2d day. Tremulous from intemperance. Mist. camph. ℥iss. Tinct. cardamomi comp. ʒij. M. ter die. Ol. ricini ʒvij. et Ol. terebinth. rect. ʒj. M. mane.—3d day. Improving.—6th day. Discharged.

*Observation.*—This individual has been thrice previously in hospital with hepatic diarrhæa, (Case No. 38,) which was removed by local and general bleeding, calomel, ol. ricini and blisters. The treatment that succeeded in this case would not have been warranted, if the constitution had been injured to a much greater extent by more advanced age, and frequent incursions of disease.

(17.) Ætat. 34.—Middle stature, thin. Twelve years in India. Subject to hepatic disease, and recently in hospital a few days with hepatic diarrhæa (Case No. 63.) Pain of the head, tinnitus aurium and vertigo, anorexia, borborygmi, and debility; pulse 90, small and soft; tongue and skin natural. Hirud. xxij. temporib. statim. *vespere* empl. canth. ij. eisdem partibus. calomel et pulv. antimon. ā ā gr. viij. horâ somni.—12th day. Discharged.

*Observation.*—This case appears to have been visceral congestion from intemperance, affecting the head through the medium of the pneumogastric nerves. The healthy frame, repose, abstinence from ordinary excesses, regimen and the remedies together, relieved the viscera from their engorged state, and healthy functions became re-established.

(18.) Ætat. 27.—Twelve months in India. Fever and

horrors from drinking; tongue extremely red, with white fur; body and limbs cold and tremulous. Tart. antimon. gr. j. bis die in aquâ. Arrow-root diet and wine.—2d day. Better. Calomel gr. x. horâ somni.—3d day. Improves. Ipecac. et pulv. ant. ā ā gr. iij. bis die.—18th day. Discharged.

*Observation.*—The diagnosis of a similar case would be "gastro-intestinal irritation, and partial congestion of the cerebral veins." The use of cordials and stimulants is a more popular, and, perhaps, in general a more safe course of treatment. Nevertheless, the constitution, the age, and other circumstances of the case, should be carefully considered, as they are essentially necessary data on which to form the principles of treatment. Thus, in persons of advanced age, and in delicate worn out subjects, depletions might be fatal, although requisite in the young and healthy; whilst the stimuli, applied with success to the aged and worn out, would be injurious if exhibited to the young and robust. The head should always be shaved, and cold applied to it, whatsoever other course of treatment may be indicated and adopted.

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## SECTION II.

### ABRIDGED CASES OF EPHEMERAL BILIOUS FEVER.

(19.) *Ætat.* 27.—Previously in hospital with acute dysentery (Case No. 98). Fever since yesterday; pains of the limbs and body; pulse 115, not large, nor full; tongue excited; skin hot. Ant. tart. gr. ss. in aquâ, ℥j. frequentius. Calomel gr. xv. horâ somni; pulv. jalapæ comp. ʒij. mane.—2d day. No fever; medicines operated

freely; slept; pulse, tongue, and skin natural; urine yellow. Ipecac. ℈ss. bis die.—3d day. Discharged. Seventy days afterwards re-admitted. Fever since yesterday commenced with burning and aching in the lower extremities; bilious vomiting and purging in the night; pain in the head; pulse 93, large and full; tongue with slight fur, margins red; skin cool and moist. Nitrat potass. ℈j. Muriat. ammon. gr. xij. Aqua ℥ij. M. bis die.—4th day. Discharged.

*Observation.*—The pains indicated congestion, affecting the abdominal ganglia and plexuses, announced by their spinal nervous connexions; the pulse not being large or full, showed there was neither pressure nor congestion amounting to obstruction. Purgatives produced free secretion and passage of bile, with increased exhalations from the gastro-intestinal surface, and hence evacuated the digestive tube of all offensive matters, and those operations sufficed to reproduce healthy action. The re-admission from increased biliary secretion, with hepatic congestion, serves to show the certainty with which irregular habits reproduce disease. Re-admitted subsequently with congestive nervo-bilious fever (Case No. 142)—an additional evidence of intemperance.

(20.) Ætat. 22.—Two years in India. Middle stature, fair, and thin. Severe headache, and vomiting, with costiveness; skin hot; tongue foul; pulse 115, full and strong. Haust. emeticus statim; mistura purgans, ℥iv. mane.—2d day. Better. Con. mist. purgans.—3d day. A little pain of the head; pulse, tongue, and skin natural. Hirud. xx. capiti. Ipecac. ℈ij. cras mane. Emplast. cantharid. inter scapulas, si opus fuerit.—4th day. Blister not applied. Quite well: discharged. Re-admitted seven months afterwards with chronic hepatitis (Case No. 182.)

*Observation.*—The fulness of pulse was not sufficiently

decided for venesection; nevertheless the omission admitted the occurrence of slight cerebral congestion on the third day, notwithstanding the use of an emetic, purgatives, regimen, &c. A local bleeding, and afterwards a blister were then indicated; but the former with regimen &c. sufficed.

(21.) Giddiness from exposure to the sun; vomiting and pains of the head; pulse 108, large and soft; tongue natural; skin cool. Calomel gr. viij. statim. Pulv. jalapæ comp. ℈ij. post hor. 4r.—4th day. Discharged.

*Observation.*—As the stomach or the liver, when suffering from congestion or from inflammation, always affect some part of the cerebral system; so cerebral disorders likewise influence the gastro-hepatic functions. Here solar influence having produced slight cerebral congestion, the stomach announced its participation (see Cases 9 to 18 inclusive) in suffering, and the gastro-hepatic apparatus being freely cleansed by a mercurial and a purgative, regimen soon restored healthy action.

(22.) Ætat. 21.—Seven months in India. Previously healthy; giddiness and fever, with headache; pulse 110, not hard; tongue excited; skin rather hot; urine dark; bowels costive; loss of strength, and appetite. Mistura Antimon. tart. omni semi-horâ donec bene egerit. Calomel gr. vj. horâ somni. Pulv. jalap. comp. ℈ij. mane.—3d day. Discharged.

*Observation.*—This case of gastro-hepatic derangement was removed by cleansing the stomach, eliciting a free discharge of bile by an emetic, then stimulating the hepatic function by a mercurial, and finally cleansing the intestinal tube, and eliciting increased exhalations from its mucous surface by a purgative.

(23.) Previously in hospital with acute hepatitis (Case

No. 163.) Giddiness, swimming and pain of the head; bowels regular; appetite natural; urine copious; sleeps less latterly; pulse 96, large and soft; tongue moist; skin hot. Calomel gr. ij. horâ somni. Mistur. purg. mane.—4th day. Discharged.

*Observation.*—Inability to sleep, marked the invasion of gastro-hepatic derangement; the cerebral affection and hot skin indicated hepatic congestion and irritation. Purgatives, low regimen, repose, emollients, and refrigerants sufficed to restore health. Re-admitted subsequently with chronic hepatitis. (Case No. 208.)

24. Pain of the belly and head for three days; no sleep; appetite good; bowels costive; urine dark; thirst; pulse, quick and small, 120; tongue excited; skin warm. Venæsectio ad ℥xx. statim. Calomel gr. vj. horâ somni. Mist. purgans, mane.—4th day. Discharged.

*Observation.*—The oppressed pulse indicated that entero-hepatic congestion, increased by costiveness, was passing into inflammatory action. General bleeding, having reduced the column circulating in the vessels, the ordinary remedies then sufficed; viz. purgatives, regimen, repose, emollients, and refrigerants. This case became severe from the delay of remedies; and had they been delayed still longer, the complaint would have assumed a more serious character.

## SECTION III.

### ABRIDGED CASES OF COMMON BILIOUS FEVER.

(25.) Ætat. 30.—Eight years in India; small, spare, healthy. Twelve months since had dysentery. A strong febrile paroxysm from ten till three, P.M. daily; bitter taste, heaviness, and severe pain of the head. Pulse large, full, 120. Tongue excited; skin hot and dry; no appetite, slight thirst, bowels regular, nausea; ailing three days.

*Diagnosis.* — Deranged biliary secretion, with hepatic congestion, and accumulation of bile in the gall-bladder, ducts, and tubes.

*Treatment.*—Hyd. submur. gr. vj. horâ somni sum. Pulv. ipecac. ʒj. in mel. 4ta. horâ mane. No fluid to be drank for three hours after the powder.—4th day. Powder remained in the stomach two hours, then several very bilious discharges from the stomach and intestines: much better. Pulse 100. Tongue much less excited; skin moist; no thirst. Slight appetite. Hydrarg. submur. gr. ij. hor. somni, et con. pulv. ipec. mane.—5th day. Neither pill nor powder operated; head heavy and painful; mucous membrane of the conjunction injected; light painful. Tongue excited; skin dry and hot. Pulse 125, large, full, and hard; restlessness. Urine very scanty, and high-coloured.

*Diagnosis.—Partial irritation of, and determination to, the cerebral membranes, with hepatic congestion, and consequent derangement.*—Venæsectio ad ℥xxxvj. statim. Emplast. cantharid. inter scapulas tertia hora, P.M. Hydrarg.

submur. gr. viij. hor. sum. Pulv. ipecac. ʒj. in mel. 4ta. hora, A.M. — 6th day. Blister rose; several free bilious dejections from the stomach and intestines; no fever or pain. Pulse 96, soft. Tongue cleaning. Vespere. Smart febrile exacerbation. Hydrarg. submur. gr. xij. Pulv. antimon. gr. v. M. hor. somni sumend. Pulv. ipecac. et pulv, jalap. āâ ʒss. in mel. multo mane, sine bibendo. —7th day. Took and retained the medicines, and passed several copious evacuations of scybalæ, no sickness for an hour, and then vomited much bile; no appetite, constant thirst. Tongue furred and swollen; skin rather hot; head very hot. Pulse 120, large, full, and hard. Hirud. xvj. tempor. statim. Pulv. antimon. gr. v. in pil. cum haust. ex aq. ammon. acet. ℥ss. 4tis horis. Vesp. Accession of fever from three till ten, P.M.—Calomel et pulv. antim. āā gr. vj. hor. som. sum. Repet. ipecac. et pulv. jalapæ mane.—8th day. Medicines operated freely, no marked improvement, restlessness, and pain of the head, announce febrile exacerbation. Venæsectio ad deliquium febre ineunte. Con. pil. et haust. ut heri. Vespere, bled to ℥xij. had slight fever, debility, languor, and laborious breathing. Con. pil. et haust. vin. Mad., aq. font. āā ℥iv. vespere.— 9th day. Slept, no fever, cool. Pulse 96, soft. Tongue cleaner, rather swollen. Passed some stools; quite easy; better. Repet. pil. cum Pulv. ant. et haust. salinus ut antea. Barley water. Vesp. Slight fever, from eleven till one, P.M. very weak, head and thorax hot. Pulse 98, large and soft. Tongue cleaner, but dry. Con. med. ut heri.— 10th day. Head and thorax hot; skin dry. Pulse 94, large, restless, much debility. Con. med. Cold affusion to the head and thorax whilst hot. Vespere, extremities cool, thorax and head hot, breathing easier. Pulse 104, Skin moist, slight thirst. Slept six hours. Pulse 100. Tongue moist; head and thorax hot. Should febrile exacerbation take place, admov. emplast. canthar. supra

sacrum. Con. mist. et pulv. ant. vespere. Fever came on at one, P. M.; blister applied; rose well; pulse 96; head and thorax only hot.—12th day. Slept; head and thorax hot; pulse 92; tongue moist, slight fur. Shave, and use cold affusion to the head and thorax. Sinapisms to the feet and legs. Con. med. vespere. Fever came on at two, P. M., now head and thorax hot; pulse 98; tongue moist, with slight fur; pupils dilated; eyes dull.—13th day. Slept, and is refreshed; head and thorax hot; extremities cold; bowels open; pulse 88; tongue with white fur; thirst abated. Con. med.; sago pudding.—14th day. Slept; better; head and thorax less hot; pulse 86, soft; extremities cool; tongue moist; emaciated and weak. Con. pil. et haust. ter in die. Vini albi ℥viij. in diem.—15th day. Improved; slept well; skin cool; pulse 84; bowels open. Con. pil. et haust. bis die et vin. alb. Sago pudding; jelly, wine, whey, or barley water, for common drink.—16th day. Improves; pulse 82; tongue clean; skin comfortable. Con. med. &c. ut heri. Continued progressively improving till the twenty-third day. Transferred.

*Observation.* — The treatment was defective; general bleeding should have been practised much earlier, and leeches employed freely around the anus, and base of the skull; the head also should have been shaved at the commencement; cold applications would then have been more useful, and the disease would have been much sooner arrested. The neglect of free general bleeding in the commencement will invariably entail evil consequences.

(26.) *Bilious Fever conjoined with Abdominal and Hepatic Congestion.*—Ætat. 25.—Four years in India. Returned from Rangoon. Fair, middle size, lymphatic. Ten months since suffered from bilious remittent at Prome. It was preceded by scorbutic salivation, and loose teeth, with sore

gums. A hot flush continued from twelve in the day till six, P. M., relieved by perspiration. Easier at night, but restless and sleepless. After five days fever, was attacked by severe pain in the right shoulder, and experienced other indications of hepatic engorgement. Mercurials, purgatives, and blisters, removed those affections altogether. Was ill and bedridden twenty-two days in Ava, then sent round to Madras. Got a severe cold on quitting Rangoon, accompanied by acute rheumatic pains in the head, which prevented sleep. Pains easy in the day, but excruciating at night. Landed at Madras, emaciated. Soon recovered. Has now been unremittingly and laboriously employed these four months from four, A. M., till night. Recently was attacked with febrile flushes, similar to those experienced at Prome; loss of appetite; digestion bad; loose irritable bowels, with copious biliary dejections, and severe griping. Continued his duties, and thought to get well by low living, but he became progressively worse for fifteen days, and then febrile symptoms confined him to bed. Now complains of giddiness, dulness of the eyes, dull vision, and prostration of strength; face flushed; pulse 130, hard and full; tongue furred, white, livid margins; skin hot and dry; urine scanty and high-coloured; bowels irritable and painful; no appetite; much thirst. Calomel gr. viij. Pulv. ant. gr. iv. M. in pil. ij. horâ somni sumend. Infus. Sennæ ℥iij. Sulph. mag. ʒiv. Ol. menth. pip. g$^{tt}$ iv. M. multo mane.—2d day's treatment. No improvement; severe thoracic pains. Venæsect. ad deliquium, ℥xxviij. Repet. pil. et mist. nitr. ammon. bis die.—5th day. Leeches were used largely over the abdomen, and around the anus these last two days. Now free from fever. Transferred.

*Observation.*—The general bleeding should have been practised the first day. Recovery took place from the effects of the mercurial and purgatives, conjointly with a

reduction of the circulatory column of blood by general and local bleeding.

(27.) *Common Bilious Fever with Hepatic Disease.*—Ætat. 23.—Twelve months in India. Tall, thin, and fair. Severe head ache for three days; pain in the right side, and cramp in that leg; pulse 96, small, feeble; tongue furred, with irregular sulci; skin moist; bowels regular; sleeps; no appetite. Antimon tart. gr. ij. in aquâ statim. Calomel gr. vj. horâ somni omni nocte. Mistura purg. mane.—5th day. Little change. Con. rem.—6th day. Pulse 90, sharp; pain in lower part of the thorax. Venæsectio ad ℥xxx. Calomel ℈ss. horâ somni. Mist. purg. mane.—9th day. Hirud. xxiv. p. d. abdominis. Calomel ℈ss. bis die.—10th day. Emplast. cantharid. p. d. et hirud. viij. circum anum. Con. med.—12th day. Ptyalism. Calomel gr. iv, omni nocte. Nitrat. potass. ℈j. Muriat. ammon. gr. xij. Aquæ ℥ij. bis die.—23d day. Dejections black and tarry; health improving.—53d day. Suddenly vomited a quart of sanguineo-purulent fluid, and felt extreme soreness inside, but did not faint. Pulse 72, soft, feeble; tongue and skin natural.—54th day. Seized with severe pain in the side, and at the pit of the stomach. Vomited fluid very copiously, resembling a mixture of pus, water, and blood, but less of the latter than yesterday; the smell is extremely offensive, and he says it is bitter; several dejections. Fainted with vomiting; severe head ache; general collapse; urine scanty, and opaque, like stale decoctum cinchonæ; slept for five hours after this event. The patient began to recover rapidly from this day, and in thirteen days was, at his own request, *discharged.*

*Observation.*—Symptoms did not at first warrant bleeding, on the contrary, the subsequent history gives reason to believe that abscess of the liver had formed previously to

his admission, and that the small soft pulse was due to that cause. The sixth day's report indicates the extension of the hepatic abscess. Depletion was employed to check the inflammation, and mercury to arrest the disease, and excite ptyalism, which took place on the twelfth day. The ordinary auxiliaries, viz. blisters, neutral salines, leeches, emollients, regimen, &c. were employed, and on the fifty-third and fifty-fourth days he vomited the contents of an hepatic abscess, and then recovered rapidly. In this case also the purulent urine was remarkable.

(28.) Re-admitted, after having been discharged thirteen days (*dyspepsy*, Case No. 14.) Pains of the head, and of all the joints; pulse 90, strong; tongue and skin natural; soreness and fulness of the chest, with shortness of breath; (9 to 18, and 20 to 22;) no appetite; thirst; perspires; bowels irregular, purged or costive; urine scanty, dark. Venæsectio ad ℔ij.—2d day. Pains in the knees and thighs; giddiness; pulse, tongue, and skin natural. Hirud. xvj. capiti. Ipecac. ϑij. bis die sine bibendo.—3d day. Pains of the head and back; pulse 90, hard; tongue and skin natural; bowels open. Venæsectio ad ℥xxviij. Con. med.—4th day. Pain continues. Emplast. cantharid. lateri sinistro. Antimon. tart. gr. ij. in aquæ ℥j. bis die.—5th to 10th days. Little change.—11th day. Pulse 120, contracted and hard; tongue and skin natural. Venæsectio ad ℥xxx. Emplast. cantharid. inter scapulas.—17th day. *Discharged.* Three months afterwards re-admitted with chronic hepatitis. (Case No. 186.)

*Observation.*—The intimate connection between gastro-hepatic disease, and the certainty with which intemperance leads step by step to organic derangement, is evinced by this case. Here the symptoms indicated congestion of blood in the liver affecting the diaphragm, thoracic, and abdominal ganglia and plexuses slightly: general bleeding,

and strongly nauseating doses of ipecacuanha were used repeatedly. Early local bleeding, blisters, and calomel were omitted; the duration and danger of the disease were increased by these omissions. The general bleeding should be succeeded in such cases by local bleeding over the suffering organs, and, when the bleeding ceases, by a blister; from 6 to 10 grains of calomel should be given at night, and a purgative in the morning. The ipecac. will be most usefully employed just before the expected febrile exacerbation, which usually happens between ten and twelve. The propriety of these remarks on the evil consequences of defective practice will appear more distinctly by turning to this individual's subsequent attack of chronic hepatitis.

(29.) Ætat. 20.—Two years in India. Middle stature, muscular, dark. Rigors, and flushes of fever the last three days in the evening; face flushed; pulse 64, large, bounding; tongue furred; skin hot, and dry; anorexia; bowels open. Calomel et pulv. antimon. āā gr. vj. horâ somni. Ol. ricini ℥j. mane.—2d day. Sleepless, vomited; pulse 84, small, compressed, and systole sharp; skin hot; face flushed; lips purple. Venæsectio ad deliquium. Emplast. cantharid. inter scapulas, vespere. Pulv. cinchonæ ℥j. Vini rubri ℥iij. vespere.—3d day. Slight fever, with faintness last evening. Slept; pulse 90, small, soft; tongue and skin natural; head to be shaved, and cold applications to it occasionally, when hot. Mist. salinæ ℥iss. secundis horis. Cont. cinchona cum vino.—4th day. Better; pulse a little compressed. Con. ut heri. Hirud. xij. supra suturos.—20th day. Discharged.

*Observation.*—The bounding pulse indicated bleeding the first day. It was deferred to ascertain whether the character of pulse was the consequence of the disease, or the effect of diffusible stimuli. The symptoms on the

second day left no doubt of the state of constitutional derangement, and tendency to cerebral congestion. Bleeding was no longer delayed, and it, with evacuants, local bleeding, cold to the shaved head, and the use of pulv. cinchonæ sufficed for the cure.

(30.) Ætat. 24.—Twelve months in India. Large and muscular. Twenty days previously in hospital with hepatic diarrhœa (Case No. 51). Giddiness, pain of the head, back, loins, and bones; bowels regular; urine scanty; no sleep; pulse 72, small, feeble; face pale; tongue and skin natural. Emplast. cantharid. inter scapulas.—2d day. Pains continue; pulse round and firm; urine dark; bowels regular. Venæsectio ad ℥xxxvj. Calomel ℈ss. horâ somni. Pulv. purgans mane.—3d day. Pulse 94, not large; much purged, and vomited. Evacuants and depletion continued, with low regimen, emollients, and refrigerants. Discharged on the twenty-fourth day.

*Observation.*—The symptoms on the first day indicated slight congestion of the brain, and of the nervous plexuses and ganglia, doubtless originating from previous congestion in the abdomen and thorax, which, having depressed the vital powers, diminished vascular action. The blister relieved the head, and stimulated the vascular system to a more equal distribution of blood. The pulse then rose, and rendered general bleeding useful; and calomel, followed by purgatives, low regimen, and emollients, sufficed to remove the internal congestion.

(31.) Ætat. 26.—Middle size, slender. Subject to disease of the liver and spleen, with attacks of intermittent. Pains especially of the head, with occasional flushes; cannot sleep; loss of appetite; burning of the skin and extremities; urine scanty; bowels costive. One free general

bleeding, calomel at night, purgatives in the morning, and saline mixture through the day. Eighteen days' treatment. Discharged.

*Observation.*—This case presented symptoms of congestion of blood in both portions of the portal system, the hepatic and abdominal, with torpor of the liver. The general bleeding having sufficiently decreased the current of blood, calomel, neutral salines, purgatives, refrigerants, and regimen sufficed for the cure.

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## SECTION IV.

### ABRIDGED CASES OF HEPATIC DIARRHŒA.

(32.) Ætat. 23.—Fever for five days. Pulse 92, full. Tongue furred, bowels constipated. Haust. emeticus, statim. Calomel gr. iv. et Pulv. antimonial gr. v. h. s. Pulv. jalapæ comp. ʒj. cras mane.—3d day. No camplaint.—4th. Seized with diarrhœa. Ol. ricini ℥j. Tinct. opii g$^{tt}$. xx. M. statim.—5th day. Quite well.—6th. Diarrhœa returned; opium, calomel, ipecac., oleum ricini, and leeches, were employed; and he expired on the eleventh day.

*Dissection* twelve hours after death.—Engorgement of the cerebral capillary vessels, with copious effusion between the convolutions, elevating the arachnoid, which is milky; effusion also at the base of the brain, and in both lateral ventricles. A little effusion within the spinal arachnoid, which is milky; and the vessels on the inferior part of the spinal cord are dilated and gorged. *Thorax.* The lungs are collapsed, the heart's cavities dilated, and their

parietes thin. *Abdomen.* Mucous membrane of the stomach flaccid, not corrugated, and the capillaries are injected, giving the appearance of ecchymosis; that of jejunum is a pink colour; numerous large patches of brickdust red are observed in the ilium; one large ulcer in the cæcum; extensive capillary engorgement in the sigmoid flexure, and innumerable small tubercles in a state of suppuration give the appearance of an extensive honeycomb ulcer. The liver is very flaccid, granular, but breaks readily, like the spleen. Gall-bladder contains aqueous green bile. The spleen is small, and of a lighter colour than usual; the renal tissue is very dark. Mucous membrane of the bladder pale.

*Observation.*—The subject was a native. They are mostly moderate in their diet; but this varies according to their caste. The Pariahs and Mahometans are most prone to excesses; the Hindoos are regular: fasting for many days is not uncommon with Indians when their means are expended. Comparing the history and morbid appearances of this case with fatal cases of hunger, they are very similar; and this individual's illness most probably originated with long-continued fasting, not suspected at the time. This shows the vital importance of rigid exactitude and minute inquiry, especially in the early examinations. In the cases of protracted fasting, great care is necessary to prevent the patient from taking too much food at once. It should be given in small quantities, and frequently; say every second or third hour in the beginning. When those cases prove fatal, it is by cerebral congestion producing effusion and death.

(33.) Ætat. 26.—Suffered four months from intermittent, dyspepsy, and diarrhœa. Came under my care with œdema, anorexia, diarrhœa, tympany, pains, and debility. Dejections frequent, scanty, mucous, and occasionally sero-

sanguineous. Pulv. ipecacuan., pil. hydrarg., nitr. pot., opium et vin. rub. were used, with flannels, warm bath, blisters, fomentations, and regimen. He expired on the twelfth day.

*Dissection* twelve hours after death.—Cerebral effusion; arachnoid milky; cerebral tissue very soft. Pia mater of the medulla oblongata has a dirty dark appearance, as observed in cholera and other cases of great exhaustion. Spinal theca contains fluid. One blood-vessel is enlarged, and gorged at the inferior part of the anterior surface running to the right side, which shows that great pain was suffered in the right leg and foot.—*Thorax.* Spumous sero-sanguineous fluid in the pulmonary air-cells and tubes; slight pulmonary engorgement.—*Abdomen.* The liver is diminished and mottled, its margin a dark purple. Sections of its tissue present vessels greatly enlarged, containing dark thin blood. Gall-bladder, spleen, kidneys, pancreas, and urinary bladder, present no extraordinary appearance. Mucous membrane of the stomach thickened, and its vessels engorged, a blush in the duodenum, the ileum towards the centre is red from vascular engorgement, and continues so in parts; numerous bleeding points appear on the mucous surface of the large intestines, and the rectum has its mucous membrane thickened and vascular.

*Observation.*—This case was received in the sinking stage; the subject, a native, exhausted by a severe attack of scurvy. Good wine, ripe fruit, and light nutritive diet, promised greater advantages than medicine; they were used conjointly in vain. This was scorbutic, rather than hepatic diarrhœa.

(34.) Ætat. 24.—Sepoy. Ill of muco-bilious purging for six months, anorexia, dyspepsy, emaciation. Pulse 110, soft. Skin cool. Urine natural. Pulv. ipecac. gr. viij. ter die. Vini rubri ℥iv. in diem.—21st day. No

improvement, œdema increased. Con. vin.; add. Nitrat. potass. gr. xv. ipecac. ter.—49th day. No improvement. Capiat ipecac. et nitrat. potass. omni mane; et pil. hyd. gr. v. Ipecac. gr. ij. omni nocte. Con. vin.—60th day. Expired.

*Dissection*—Cerebral effusion and capillary engorgement: some effusion in the spinal theca.—*Thoracic viscera* natural.—*Abdomen.* Gall-bladder contains ʒiv. of very sizy light straw coloured bile; a firm stricture at the extremity of the cystic duct, where it unites with the hepatic, and bile could not pass from the gall-bladder until violent pressure was made. The liver pale, small, and its texture very close. Renal tissue very dark; pancreatic tissue dark; spleen natural. The mucous tissue of the intestinal tube was greatly thickened, and near the cæcum it became quite carneous and red, and continued with those characters to the termination of the rectum. In the sigmoid flexure the mucous coat was literally a quarter of an inch in thickness, softened, and readily broke under the fingers; several dark depressed scars mark the site of preceding dysenteric ulcers.

*Observation.*—This native case, however associated with hepatic derangement, originated with a severe attack of scurvy, sustained on field service. I had the treatment of some thousands of the native troops returned from service, in the chronic stages of scurvy. Diet, and good wines given in soup, were more efficacious than medicine. The nitrate of potass and ipecac., however unsuccessful in some instances, were the most useful remedies in those formidable cases of chronic disease.

(35.) Ætat. 19.—Sepoy. Ill sixteen months with rheumatism, fever, debility, and anorexia. Bowels loose, dejections muco-bilious. Pulse 90, soft and feeble. Skin dry, hot, and scabrous. Tongue furred, no appetite.

Urine scanty and dark. Bark and wine disagreed; small doses of ipecacuanha were used, with occasional doses of rhubarb, oleum ricini, and pil. hydrargyri.—21st day. No improvement; leeches were applied around the anus, but they afforded no benefit, and were not continued. Ipecac. gr. vj. ter die.—47th day. Febrile flushes severe and frequent. Venæsect. ad deliquium. Vespere, hirud. iv. circum anum. The leeches were repeated several times, and pil. hydrarg. given at night. Ipecac. and fomentations were used throughout the day: but the patient expired on the fifty-fourth day.

*Dissection* twelve hours after death.—Cerebral and spinal effusion; the pericardium contained ℥viij. of fluid.—*Abdomen.* The stomach was distended with gas, flaccid, and pale; five inches from the pylorus the mucous membrane became a dark red for several inches, then again pale, and these patches alternated throughout. The mesenteric glands were enlarged, and innumerable tubercles, the size of millet-seeds, were observed in the peritoneal coat. The liver was small, pale, and close in texture, rather than granular. Spleen was very small. Pancreas small and dark. The kidneys had several small tubercles, the size of a small pea, containing a white opaque viscid substance.

*Observation.*—This is strictly a case of scorbutic diarrhœa, and the observations offered on that condition of disease are applicable to this case; warm baths, gentle regular exercise, good wine, and suitable diet, with friction and flannel clothing, are the principal restorative means. Medicinal auxiliaries are of less importance; of those, the most useful under my observation were nitrate of potassæ, pulv. ipecac. and the occasional use of pilul. hydrarg., ol. ricini, or pulv. rhei.

(36.) Ætat. 32.—Sepoy. Ill eleven months with pains, fever, and purging. Now emaciated, nocturnal pains, and

fever. Muco-bilious and muco-sanguineous purging, anorexia, and prostration of strength; fulness and hardness at the epigastrium, which is painful on pressure. Pulse 110, round and soft. Tongue furred. Skin warm. Hirud. x. part. dol. Calomel gr. x. Ipecac. gr. iij. Opii grss. h. s. Fotus frequenter.—2d day. Omit. calomel gr. iv. et con. ipecac.—16th day. Had leeches three times, and a blister, without advantage. Omit. ipecac. et calomel. Mist. catechu ℥iss. confect. aromat. gr. vj. M. 4tis horis.—18th day. Deceased.

*Dissection* twelve hours after death.—Slight cerebral and spinal effusion, and capillary engorgement.—*Thoracic viscera* natural.—*Abdomen.* The liver is a very pale yellow, and granular. Gall-bladder pale, nearly empty; innumerable small tubercles are situate in the mucous membrane of the lower part of the ilium. Mucous membrane of the large intestines is a brickdust colour, covered with green feculent matter. Pancreas is dark; spleen and kidneys natural. Mucous membrane of the urinary bladder is pale.

*Observation.*—This also is a chronic case of scurvy: warm bath, and the means indicated in the preceding observations, were employed in this, as in every other instance.

(37.) Ætat. 40.—Ten years in India; middle size, muscular, pale, studious, sedentary, health breaking these six weeks. Slight fugitive abdominal pains and looseness; anorexia, debility, pallor, eyes sunk. Pulse 82, oppressed, and reduplicating. Tongue foul. Skin natural. Cannot sleep. No pain, but constant uneasiness. Bowels regular. Urine scanty. Ipecacuanhæ gr. x. om. mane, sine bibendo. Potass. nitr. ℈j. Mur. am. gr. xv. Aquæ ℥ij. bis die.—2d day. Hirud. vi. circum anum. Con.—3d day. No uneasiness, but extreme sinking and debility. Blisters. Pil.

hyd. Occasional purgatives. Port wine, and various changes in diet, were made without benefit. Calomel, hot bath, enemas, sinapisms, nitro-muriatic acid bath, and opium, were in vain employed. He expired on the thirty-first day from that on which he was reported sick. The prostration of strength, want of sleep, and restlessness, continued. The pulse was moderate until near the close of life; vomiting, convulsive attacks, cramps, and a costive state of the bowels, marked the subsequent course of disease. Calomel, though freely given, produced no ptyalism, and the nitro-muriatic acid bath was also fruitlessly used. On the second day I was called in consultation, and noticed that the body was considerably enlarged and dilated in the centre of the trunk (occupied by the liver), and small or tapering to the two extremities. A low pulse (75, small, and soft), prevented me from recommending the lancet. On the twenty-seventh day I again attended in consultation, and gave for diagnosis "hepatic abscess," advising a long sea voyage to a cold climate without delay. Death took place at sea a few days afterwards, and examination of the body was not obtained.

*Observation.*—A most instructive lesson may be studied in the history of this case. The original complaint was congestion in both portions of the portal circle—hepatic and intestinal. I was probably misled at first, and deterred from bleeding by the very feeble soft pulse; but that symptom may have arisen from irritation in the mucous surface of the lower part of the ilium; it should be specially remembered and considered *to indicate bleeding*. It is probable, on the other hand, that abscess of the liver actually existed at that time. Hepatic congestion terminating by suppuration, without inflammation or pain, as in this case, is an every day occurrence in India. If abscess did not exist in the early period of treatment, there could

be no doubt of its existence latterly; nevertheless, there were no acute symptoms at any time.

(38.) Ætat. 36.—Seven months in India; tall, dark, muscular, and healthy. Purging and griping these four days: dejections scanty, muco-bilious; tenesmus, tremors, profuse cold perspiration, great thirst, nausea. Urine scanty, eyes injected, faculties dull, spasms and vomiting setting in. Calomel gr. x. Opii gr. ij. statim. One hour after, purging, vomiting, and cramps, relieved. Pulse very large, surging 110. V. S. ad ℥xxvj. statim. Vespere, better. Pulse large and stronger, 108. Venæsectio ad ℥xv.—2d day. No vomiting, three bilious dejections. Urine scanty. Tongue furred. Pulse 82, natural; perspires; hirudines vj. circum anum. Olei ricini ℥j. cras. —4th day. Better. Pulv. ipecac. et antimon. āā gr. vj. Calomel gr. j. M. bis die. Hirud. viij. circum anum.—6th day. Quite well, discharged. Re-admitted after three months and a half. Debility; pain in the back; cold sweats. Pulse 98, very large and soft. Tongue moist, nankeen-like fur. Skin natural. Bowels regular. Urine scanty; no rigors, but pain of the back very severe. Venæsectio at ℥xxx., blood cupped.—2d day. Better; dry cough. Mist. salinæ nitro-ammoniatæ ℥ij. bis die. Calomel gr. xv. horâ somni; ol. ricini ℥ss. p. r. n.—3d day. Quite well, requests to be discharged. Re-admitted after fourteen days. Frequent muco-bilious scanty dejections, great prostration of strength; profuse cold perspiration. Urine scanty and dark. Pulse 110, very large and full. Skin varies from hot to cold. Tongue very red. Venæsectio ad deliquium. Hirud. viij. circum anum. Calomel gr. viij. horâ somni. Ol. ricini ℥ss. pro re natâ.—2d day. Repet. hirudines, venæsectio, et calomel.—3d day. Mist. salinæ ℥ij. bis die.—4th day. Pulse, tongue, and skin,

natural. Bowels regular. Urine pale. At his own request discharged. Subsequently received with dyspepsy. (Case No. 16.)

*Observation.*—General collapse (cholera) was threatened at first; the means then used checked its progress, and reaction ensued: two prompt general bleedings, and leeches twice around the anus, sufficed for the apparent cure. Three and a half months subsequently, the *re-admission* report indicated hepatic disease in the chronic stage; an abscess formed, and enlarged. Those symptoms were relieved by general bleeding, and the patient was discharged: *re-admission* after fourteen days in a similar state, and again relieved by the same means. This history throughout elucidates the consequence of excesses.

(39.) Re-admitted three days after discharge from treatment for acute hepatitis. (Case No. 162.) Constant looseness of the bowels, dejections aqua-bilious; short dry cough. Urine scanty and pale; cramps in the right leg; pain in the right shoulder, and stiffness of both; no pain of the back; thirst. Pulse 120, small, contracted. Skin cool and moist. Tongue slightly furred. Venæsectio statim ad deliquium; ℥xxx. drawn, black, cupped and buffy. Calomel gr. vj. horâ somni.—2d day. Pulse large, full, and firm. Tongue disposed to dry. Venæsectio statim ad deliquium. Repet. calomel horâ somni. Olei ricini ℥j. cras. —3d day. Pulse 84, large and full, not hard; no pain. Calomel gr. iij. omni nocte.—6th day. Nights restless from occasional cramps and borborygmi. Con.—12th day. Health improves; cramps begin in the toes, fly upwards to the legs, and return downward by the toes.—14th. Pulse rising. Hirud. viij. circum anum.—15th day. Pulse 90, contracted and firm. Omit. med.; venæsectio ad ℥xx.—16th day. Improving. No medicine.—17th day. Mist. nitro-ammoniatæ ℥ij. bis die.—22d day. Pain at the epi-

gastrium. Emplast. cantharid. part. dol.; con.—24th day. Pulse 90, large, full, and firm. Venæsectio ad ℥xxiv.; blood cupped and buffy. Calomel gr. v. omni nocte. Con. mist. salina.—28th day. Pulse 106, hard and small. Pains of the legs and cramps continue. Venæsectio ad ℥xxiv.—30th day. No cough or pain; but cramps are severe; ptyalism. Con.—35th day. Pulse 104, natural; mouth very sore. Calomel gr. iij. omni nocte.—37th day. Urine very copious, turbid, and opaque, with plentiful deposit of pus.—45th day. Omit. calomel. Repet. mist. salina.—46th day. Urine opaque and purulent, with copious deposit; health improving. Con.—48th day. At his own urgent desire, discharged. Re-admitted after fifty-four days; diarrhœa and tenesmus; dejections muco-bilious; appetite good; no thirst; urine pale; pulse nearly natural. Tongue furred. Skin warm. Calomel gr. x. horâ somni. Pulv. rhei ℈j. mane.—4th day. Mist. nitro-ammoniatæ ℥ij. bis die. Pil. hydrarg. gr. x. omni nocte.—6th day. Quite well. Discharged.

*Observation.*—This case appears to have been received in the chronic state; and it seems probable that an abscess of the liver existed at the period of his entry. The frequent bleedings prevented increase of the abscess, and checked its extension, either in the direction of the thorax or abdomen. The purulent urine seems to be conclusive evidence of pus having passed from an abscess into the circulatory system, and thence through the kidneys. The re-admission with hepatic dysentery after fifty-four days shows the tendency of hepatic disease either to remain stationary or to return, and the necessity for detaining hepatic patients under due care until the traces of disease are eradicated.

(40.) Ætat. 24.—Six months in India; middle stature, muscular, dark; looseness of the bowels, and had an epi-

leptic attack, both apparently from intemperance. Pulse 90, soft. Tongue excited; skin moist. Pulv. rhei ℈j. statim.—2d day. Cough; pain in the limbs, especially soles of the feet. Pulse 110, large and heavy. Venæsectio ad ℥xxxvi. No medicine.—3d day. Pulse, tongue, and skin, natural; cough continues. Ipecac. ℈j. bis die.—7th day. Pain at the epigastrium, with cough. Con. med. Emplast. cantharid. part. dol.—10th day. Tongue semi-tendinous, or pales near the point. Ipecac. ℈ij. omni mane. Calomel gr. iij. om. nocte.—13th day. Discharged.

*Re-admitted* after twenty days; looseness since last illness; yesterday severe cramps, in both legs, descending to the toes: frequent light-coloured dejections; no appetite; constant thirst; cannot sleep. Pulse 116, large and soft. Tongue very red at the margins, paler near the point, and dries constantly; tip almost black; when extended, depressed in the centre; skin cold and wet. Emplast. cantharid. inter scap. et emplast. cantharid. scrob. cord. Calomel ℈j. Opii gr. iss. statim. Ol. ricini ℥ss. cras. —2d day. Hirud. viij. circum anum. Repetat. calomel cum opio horâ somni.—3d day. Pulse 120, large, round, and firm; cramps very violent in the lower extremities. Venæsectio ad deliquium. ℥xxx. drawn. Con. calomel mist. salinæ ℥j. 6tis horis.—4th and 5th days. Violent cramps returned frequently.—6th day. Pulse 76, large and soft. Improving; but cramps continue. Con. calomel. Venæsectio ad ℥xvj.—8th day. Cramps less severe, and attack the limbs lower down; slight ptyalism. Omit. calomel; hydrarg. cum cretâ ℈j. bis die.—12th day. Ptyalism; health improving; cramp only from the ankles to the toes. Con.—18th day. Slight cramps in the toes on either side; ptyalism. Hydrarg. cum creta gr. iv. Nitrat. potass. et muriat. ammon. āā gr. xv. M. bis die.—20th day. Got wet feet; purging and cramps returned. Vin. rub. ℥iv. in diem. Con. rem.—25th day. Tendency to cold

of the feet, then cramps commence in the ankles, which are removed in twenty minutes by rubbing. Con.—26th day. Pulv. cinchonæ ʒj. Vin. rub. ℥ij. bis die. Muriat. ammon. ϑj. Ipecac. ϑss. Sulph. zinc gr. j. M. om. nocte. —30th day. Digestion good; health improving; cramps only at times; borborygmi and looseness of the bowels come on at night periodically. Con.—40th day. Improving; yet little change. Cont.—51st day. Improving; yet cramps and borborygmi occur at times.—60th day. Discharged.

*Observation.*—The pulse is a bad guide the first day, with persons addicted to excesses, because they usually exceed before reporting themselves sick, as they say, with the hope to improve health; and hence they come into hospital excited, exhausted, and feeble. The cough indicated leeches and blisters in addition to the treatment adopted. The history of second admission details a very acute and severe hepatic diarrhœa, cured chiefly by mercurials. Leeches might have been employed during that period with great advantage around the anus, especially if they had been used very freely.

(41.) Ætat. 21.—One year in India; tall, fair, muscular. Purging and vomiting these three days; dejections black or green. Urine dark; sleeps; weakness of the limbs. Pulse 92, small and hard. Tongue slightly furred. Venæsectio ad deliquium. Thirty-six ounces drawn. Calomel gr. viij. horâ somni. Pulv. rhei ϑj. cras.—2d day. Repet. medicamenta.—3d day. Ipecac. ϑss. bis die. Omit. alia.—4th day. Discharged. Re-admitted fifteen days afterwards. Bowels loose, and passes the food undigested since last illness; pupils greatly dilated, dimness of sight; heaviness of the limbs; cramps in the soles and toes. Pulse 100, small and soft. Tongue moist, furred; skin cold; no pain, except after using hot drink. Ipecac. ϑj. Tartar.

antimon. gr. ij. statim. Calomel ℈ss. horâ somni.—2d day. Hirudines xviij. abdomini, et repet. calomel bis die.—3d day. Pulse 118, large and soft. V.S. ad deliquium. Con. calomel.—4th day. Ptyalism. Mist. purgans. Gargarisma. Kali ppt. ʒij., Aquæ ℔ij., Acid. sulph. dil. q. s. ad gratum acidulum. Capiat ʒij. bis die.—16th day. Discharged.

*Re-admitted* eleven days afterwards; was frequently attacked with purging since last illness; now bad taste, anorexia, debility, no sleep, cramps of the left leg and foot, calf drawn into a knot, and spasm goes downward, stitches in right side, severe pain in the back which went off before the stitches came on; flatulence. The liver is enlarged; countenance sharp and emaciated. Pulse 88, large and full. Tongue furred, yellow and white. Skin cool. Bowels irregular. Hirudines xij. part. dol. abdominis. Mur. ammon. ℈j. hydrarg. cum cretâ gr. iv. Sulph. zinc gr. ij. M. bis die.—2d day. Much better. Urine very free. Con. —5th day. Urine copious, like decoctum cinchonæ, with copious deposit, very opaque when agitated, a hectic flush, but health improving; ptyalism.—9th day. No change in the urine or symptoms. Decoct. sem. lini ℔iij. om. die. Con.—13th day. Urine cloudy; health improving; cheeks flushed. Con.—30th day. Urine continues pale; general health improving; distinct fulness in the hepatic region. Insert two setons.—40th day. Former remedies discontinued. Pil. hydrarg. gr. vj. Ipecac. gr. ij. Sulphat. zinc gr. ij. M. in pil. ij. bis die. Improvement generally.—72d day. Quite well. Discharged.

*Observation.*—The early treatment was correct, the discontinuance of it and discharge was the reverse. The speedy re-admission with abdominal congestion and irritation shows that hepatic disease was not eradicated. The history of the third reception proves that abscess took place in the liver, and this affords an additional proof that similar cases, originally, should be considered with reference to

the congested state which produces this change; and that the engorged condition should be removed, whilst it is easy to do so,—viz. in the commencement.

(42.) Ætat. 27.—Six months in India; full-sized, pale, spare. The last two months subject to frequent flushes and chills; appetite variable; digestion and sleep bad. Bowels costive or purged. Now frequent muco-bilious dejections. Urine dark and scanty; nausea; pain in the left side. Pulse 80, small and feeble. Tongue presents transverse sulci. Skin natural. Calomel gr. x. horâ somni. Ol. ricini ℥j. cras.—2d day. Ipecac. et pulv. antimon. āā gr. vj. Calomel gr. j. M. bis die. Nine days' treatment. Discharged. Ten days afterwards *re-admitted.* Frequent muco-bilious dejections, with tormina and tenesmus. Urine dark and scanty. Pain in the shoulders and right side. Pulse and skin natural. Tongue very red, sulci. Pulv. ipec. ʒj. bis die.—3d day. Con. ipecac. mane. Calomel gr. iij. omni nocte.—6th day. Quite well. Discharged. Eighty days afterwards *re-admitted.* Frequent muco-bilious dejections, the call preceded by intestinal spasm and pain, belly distended with flatus. Urine scanty and dark. Pulse 110, large and soft. Tongue slightly furred. Skin moist and warm. Venæsectio ad deliquium statim. Blood cupped and buffy. Hirud. viij. circum anum.—2d day. Hirud. ut heri. Mist. nitro-ammoniata, bis die.—5th day. At his own desire, discharged. Five days afterwards *re-admitted.* Pain in the left leg from the knee. Bowels irregular; the belly feels as if quite unoccupied and empty. Six or seven muco-bilious dejections daily; borborygmi; some appetite; constant thirst; countenance pale and bloated. He came to hospital in the night. Pulse reported quick and small; and the assistants at first refused to bleed him, but having some difficulty of breathing, at his urgent request they ultimately did so. Venæsectio ad

℥xxxvi.; blood soon cupped. In the morning, pulse 88, large and soft. Tongue clean. Skin natural. Hirud. xij. circum anum, et vj. eâ parte cras. Ol. ricini ʒvj., Ol. terebinth. rect. ʒij. M. mane.—3d day. Repetantur hirud.—5th day. Repet. hirud. Mist. nitro-ammoniatæ ℥ij. bis die.—8th day. Discharged.

*Observation.*—A bilious flux, with pain in the left side, relieved by an alterative treatment of nine days. Ten days afterwards, the disease returns, aggravated and augmented by distinct hepatic symptoms. Large doses of ipecac. for six days disgorge the biliary apparatus, improve capillary circulation, and remove the complaint. Re-admitted eighty days afterwards; the bowels more affected, and a chronic hepatic affection is established. General and local bleeding, &c. remove those symptoms in five days; and again in five days he is re-admitted with symptoms of congestion of blood in the liver, intestinal irritation, and chronic abdominal disease. These symptoms were all effectually removed by bleeding, which should have been practised in the early treatment of this case; as experience presents us with the speedy return of disease, when (as in this instance) the symptoms are only relieved by palliative means.

(43.) Ætat. 21.—Nine months in India; middle stature, slender, pale. Frequent green, and sometimes sanguineous, dejections, with abdominal pains, these ten days. Pulse 84, soft. Tongue and skin natural. Ipecac. ʒj. statim, sine potu. Calomel ϑj. horâ somni. Pulv. rhei ϑij. cras, treated with ipecac. subsequently.—4th day. Quite well. Discharged. *Re-admitted* six days afterwards. Abdominal pain, frequent yellow dejections. Pulse 90, soft. Skin cool. Tongue moist. Calomel gr. x. horâ somni. Pulv. rhei ϑij. cras.—3d day. Dejections dark green; slept; better. Ipecac. ʒss. bis die.—6th day.

Urine dark; dejections green; bilious. Antimon. tart. gr. ij. in aquâ, ℥ij. omni meridie. Calomel gr. viij. omni nocte. Ipecac. ℈ij. omni mane.—9th day. Pain at the sigmoid flexure. Admov. hirudines viij. part. dol. Con. med.—11th day. Pain continues. Hirudines vj. part. dol. —12th day. Omit. calomel. Con. ipecac. bis die.—13th day. Pain in the right side; dejections green. Con.—23d day. Bowels regular; sleeps; some appetite; gums swollen and tender. No med.—32d day. Bowels very loose, dejections muco-bilious. Pulse 96, soft. Tongue scarlet near the point, marking irritation and engorgement in the mucous membrane of the ilium. Skin cool; sleeps little; pain in the iliac regions. Urine dark. The system to be affected with mercury. Calomel ℈ss. bis die.—38th day. Incipient ptyalism. Omit. calomel. Hydrarg. cum cretâ gr. viij. Muriat. ammon. gr. x. horâ somni om. nocte.—42d day. The urine has been and is turbid; mild ptyalism; health improving. Hydrarg. cum creta gr. v. —46th day. Dejections green, bilio-feculent; improving. Mist. nitro-ammoniatæ ℥ij. bis die.—52d day. Pain at the sigmoid flexure; dejections muco-bilious. Urine pale. Hirudines viij. part. dol.—54th day. Discharged by transfer, with the advantage of a short sea voyage.

*Observation.*—This case was hepatic congestion, with engorgement of the intestinal mucous membrane; the feeble soft pulse here, as in nervous fevers, marked irritation in the inferior extremity of the ilium. In many cases of congestion in the abdominal viscera, the feeble, languid, soft pulse is a deceitful symptom: it is caused by nervous influence, and should not prevent bleeding, either generally or locally. The speedy re-admission shows, that unless the disease is eradicated, it very soon returns. The first twelve days' treatment was by calomel, ipecac., antimon. tart., and leeches; and the liver apparently had been freely disgorged: nevertheless, hepatic congestion was then more

distinctly pronounced. Till the thirtieth day, the same treatment (without bleeding) was continued; but it produced no amendment from the thirty-second till the fifty-second day. Mercurial treatment effected a tendency to improvement, but left the patient greatly exhausted. It would have been better to have employed a general bleeding on the thirty-second day, preparatory to the mercurial course.

(44.) Ætat. 23.—One year in India; middle stature, spare, dark. Frequent scanty dejections, with abdominal pain and tenesmus the last three days. Urine dark and scanty; pains of the head; cannot sleep; anorexia; and prostration of strength. Pulse 110, full and round. Tongue excited. Skin warm. Venæsectio ad deliquium statim; ℥xxx. drawn. Calomel gr. x. horâ somni. Pulv. rhei ℈ij. cras mane.—3d day. Debility, cough. Pulse, tongue, and skin, natural. Bowels regular. Ipecac. ℈ij. bis die, sine potu.—4th day. Cough increased. Pulse full and firm. Venæsectio ad deliquium. Con. ipecac.—6th day. Improving. Pain at the epigastrium. Emplast. cantharid. p. d. Con. ipecac.—8th day. Pain of the head. Hirud. xij. fronte.—12th day. Pulse 96, large and soft. Tongue and skin natural; appearance hectic. Bowels slow; urine red; little sleep; no appetite. Ant. tart. gr. ij. in aquâ, ℥j. bis die.—16th day. Pulse 100, soft. Tongue and skin as before. Bowels open; cramps in the legs, toes, and muscles of the lower jaw; pain of the right side of the head. Con.—18th day. Pulse 64, large and firm. Venæsectio ad deliquium. Ant. tart. gr. iiiss. in aquâ, ℥ss. bis die.—22d day. Cramps in the right toes; pain in the head and back. Pulse 68, round and firm. Tongue and skin natural. Venæsectio ad deliquium; ℥xx. drawn. Con. med.—27th day. He expectorates considerably from the lungs. Bowels free; little appetite; pain of the head, back, and

loins. Urine pale. Tongue clean. Skin cool. Transferred, with the advantage of a short sea voyage.

*Observation.*—This case, on admission, was congestion of the whole portal circle; congestion of the liver produced hepatic derangement, pains of the head, and fever; congestion in the intestinal mucous membrane produced intestinal irritation and purging. The two early general bleedings checked, but did not remove congestion. The ipecac. and antimonial treatment proved unequal to remove congestion from the capillaries of the hepatic portal vessels, and it is clear from the subsequent history, that abscess of the liver took place, and existed at the period of his transfer. The evidence of abscess are the hectic state and appearance, deterioration of health, pains of the head, back, and loins, and in the lower part of the thorax; cough, and muco-purulent expectoration. After the early general bleedings, leeches should have been freely and frequently applied over the liver, followed by blisters, and from six to eight grains of calomel every night, until tenderness of the mouth had taken place, and that condition should have been maintained fourteen or twenty days.

(45.) Ætat. 24.—Three years in India; tall, fair, and extremely muscular; subject to intermittent fever, and in hospital six days with that complaint one month since. Now constant purging, dejections yellow, with tenesmus. Urine scanty and dark. Pulse 96, soft. Antimon. tart. gr. iij. bis die. Vespere. Very much purged. Tinct. opii g$^{tt}$xx. in aquâ horâ somni.—2d day. Much vomited and purged; night restless; dejections dark yellow. Urine scanty and dark. Pulse 94, round and soft. Tongue and skin natural. Fulness of the chest. Venæsectio ad ℥xxiv. Calomel ℈j. hor. somni. Pulv. ipecac. ℈j. cras mane.—3d day. Dejections bilio-feculent. Pulse 100, natural. Tongue and skin natural. No thoracic fulness. Ipecac.

et pil. hydrarg. āā gr. vj. bis die.—6th day. Much improved. Urine copious and lighter. Pulse still too full. Tongue and skin natural. Venæsectio ad ℥x. Con. med. —9th day. Improves. Pulse 90, large, and rather surging. Venæsectio ad ℥xij. Con. med.—13th day. Abdominal pains, and frequent dejections. Pulse 90, soft and full. Hirud. xvj. abdomini. Calomel gr. iv. Opii gr. ¼ ter die.—14th day. Pulse 108, full and hard. Skin natural; dejections black, muco-bilious; mouth sore. Hirud. iv. circum anum. Pulv. rhei ʒj. M. Calomel gr. ij. horâ somni. Omit. alia.—16th day. Repet. hirud. Calomel gr. ij. horâ somni. Ol. ricini ℥j. p. r. n.—20th day. Discharged.—Four days afterwards, *re-admitted.* Frequent dejections, muco-bilious; tenesmus and tormina; anorexia; debility. Pulse 96, soft. Tongue and skin natural. Hirud. vj. circum anum. Ipecac. ʒss. bis die. Pil. hydrarg. gr. v. horâ somni. Eleven days' treatment, with daily improvement. Discharged.

*Observation.*—The insidious nature of hepatic congestion is well displayed by this case. *First*, Admission with a feeble pulse, that marked irritation in the ilium. *Secondly*, After a general bleeding, pulse became natural, instead of being more feeble. *Thirdly*, A few days enabled the system to indicate overfulness of the vessels; the ilium being then in a healthier state; and a second general bleeding was practised with advantage. *Fourthly*, In three days a third general bleeding was indicated by abdominal pain and irritation. *Fifthly*, In four days a local bleeding was again indicated by abdominal pain and irritation. *Sixthly*, The complaint then readily ceded to calomel and opium, with application of leeches round the anus. *Seventhly*, Return of the complaint four days after discharge. *Eighthly*, The cure by the daily application of leeches around the anus, ʒss. doses of ipecacuan. twice every day, and pil. hydrargyri at bed time.

(46.) Ætat. 25.—Two years in India; spare habit. Frequent muco-bilious dejections, with slight abdominal pain. Pulse, tongue, and skin, natural. Calomel gr. x. statim. Pulv. rhei ℈ij. vespere.—2d day. Well. No medicine.—3d day. Tongue tremulous and excited. Pulse 90, small; skin natural. Bowels regular; appetite good. Ipecac. ʒss. bis die.—5th day. Discharged. Eighteen days afterwards *re-admitted.* Frequent muco-bilious dejections; nausea; stuffing of the chest; sleeplessness; a little appetite. Urine scanty and dark. Pulse 108, large and full. Tongue furred. Skin natural. Venæsectio ad deliquium; ℥xl drawn. Antimon. tart. gr. iiss. in aquâ, ℥iss. M. vespere. Emplast. cantharid. scrob. cordis horâ somni. —2d day. Better. Calomel ℈ss. horâ somni. Pulv. jalapæ comp. ℈ij. cras.—3d day. Pain of the side; little sleep. Bowels not opened. Calomel ℈j., Extract. colocynth. comp. gr. x. M. statim.—4th day. Expectorates freely and largely. Urine pale. Ipecac. cum flor. sulph. āā ℈ss. bis die.—10th day. Discharged. *Re-admitted* ten days afterwards: cough, pain of the head, frequent muco-bilious dejections. Pulse 110, firm. Tongue and skin natural. Urine scanty. Venæsectio ad deliquium; ℥xx. drawn, cupped. Calomel gr. xv. Opii gr. j. horâ somni. Ol. ricini mane.—2d day. Cramps in the legs; cough; slept. Ipecacuan. et hydrarg. cum cretâ, āā gr. viij. bis die. —4th day. Pain of the head. Con. emplast. cantharid. inter scapulas.—10th day. Discharged.

*Observation.* — This history shows hepatic flux (from entero-portal congestion) relieved without bleeding. In eighteen days, however, the patient returns with urgent symptoms of hepatic congestion, and is then relieved by copious bleeding, &c. Re-admission a third time with hepatic symptoms, and he is again relieved by bleeding. The progressive accession of hepatic symptoms is well marked, and the lesson it affords is, 1st, that entero-portal

congestion may be relieved, but not usually cured without general and local bleeding. 2dly, That intemperance in this climate speedily re-produces entero-portal congestion. 3dly, That entero-portal congestion, if not removed effectually by depletion, soon establishes chronic hepatic disease.

(47.) Four years in India; full-sized and muscular. Frequent muco-bilious dejections; pain in the right side; tormina and tenesmus. Pulse 90, soft. Tongue furred. Skin natural. Calomel gr. x. hor. somni. Pulv. rhei ℈ij. cras.—2d day. Hirudin. xviij. abdominis part. dol.—3d day. Emplast. cantharid. part. dol. Ipecac. ʒss. bis die. Pilul. hyd. gr. x. om. merid.—5th day. Pain of the side; cramps in the calves of the legs; and restlessness. Con.—8th day. Pain increased. Con. Hirud. xx. part. dol. abdominis.—14th day. Con. ipecac. omni mane. Calomel gr. viij. om. nocte.—16th day. Discharged. Thirteen days afterwards *re-admitted.* Pulse 90, large and full. Skin moist. Tongue foul; frequent muco-bilious dejections; tormina; lumbago; debility; anorexia; and thirst. Venæsectio ad ℥xvi.; blood cupped. Calomel gr. viij. Opii gr.ss. omni nocte.—5th day. Pulse, tongue, and skin, natural. Bowels regular. Muriat. ammon. gr. xv. hydrarg. cum cretâ gr. vj. Sulph. zinc gr. ij. M. bis die.—7th day. At his own desire, discharged. *Re-admitted* three months afterwards with acute hepatitis. (No. 156.)

*Observation.*—The symptoms of the fifth day announced distinctly the continued existence of congestion of blood in the liver from the omission of bleeding, and indicated the progress of hepatic disease towards a chronic form. Leeches and calomel then checked the complaint; but the patient soon returned into hospital, with the disease in a more acute form. On re-admission, bleeding was not sufficiently practised, and the calomel was discontinued too abruptly.

The subsequent speedy re-admission with hepatic disease, compared with this treatment, leads me to believe, that the hepatic congestion was only checked, but not removed, at this period. Too much care and attention cannot be given to this important point; and probably large doses of calomel should be delayed until the liver becomes relieved from engorgement by the effects of bleeding.

(48.) Ætat. 28.—Two years in India. Full size, spare, pale. Pains and cramps in the belly, succeeded by hot dejections; no tenesmus; anorexia; thirst; dry cough. Pulse and skin natural. Tongue furred. Urine dark. Calomel ℈j. Opii gr. j. M. horâ som. sumend.—2d day. No change. Ipecac. ʒss. Opii gr. j. statim. Repet. calomel &c. horâ somni.—3d day. Better. Omit. calomel, et datur ipecac. &c. horâ somni.—4th day. Improving. Calomel et opii āā gr. j. Antimon. tart. gr. ij. M. in pil. bis die. —5th and 6th days. Improving. Con.—7th day. Better. Ipecac. gr. vj. bis die. Omit. alia.—11th day. Discharged.

*Observation.*—The dry cough, &c. seem to mark hepatic congestion, with irritation of the gastro-intestinal surface, which, if neglected, would have soon changed into dysentery. The calomel, ipecac., and ant. tart., proved sufficient to remove this condition, by stimulating the ganglionic nerves, and hence promoting the action of the biliary apparatus, the absorbents in the liver, and the capillaries of the gastro-intestinal surface. The pulse did not indicate bleeding; however, the application of leeches would have secured and hastened recovery.

(49.) Ætat. 25.—Two years in India; middle size, muscular, fair. Purged frequently these five days; numerous scanty white and yellow dejections, with tenesmus, and cutting pain in the bowels; anorexia; prostration of strength. Pulse 90, soft. Tongue and skin natural;

limbs weak and heavy. Pain shooting into the toes and fingers; pupils dilated. Urine scanty and dark; cannot sleep. Pulv. ipecacuanhæ ℈ij. statim et horâ somni sumend. sine bibendo (he has not drank fluid these last four hours).—2d day. Vomited a little after the medicine; but feels better. Con. med. bis.—3d day. Much better; strength, appetite, and state of the bowels, improving. Ipecacuan. ʒss. bis die.—4th day. Quite well. Discharged. Seven weeks afterwards *re-admitted*, with cough, and torpor of the liver. Ipecac. ℈ij. bis die, sine bibendo. Two days' treatment. Discharged.

*Observation.*—The dilated pupils, and pains of the extremities, with gastro-intestinal irritation, mark the ordinary course of hepatic congestion. The treatment was confined to the use of ipecac., and that removed the complaint. The tendency of congestion to return is shown by this relapse after seven weeks; and again it was successfully treated with ipecac. The soft pulse prevented bleeding; however, I am of opinion, that one general bleeding first, and leeches subsequently over the congested part, would, as a preface to the ipecacuan., have secured more benefit to the patient.

(50.) Ætat. 20.—Seven months in India; middle stature, fair, robust. Looseness, nausea, loss of appetite, debility. Pulse 98, soft. Tongue and skin natural. Calomel gr. x. horâ somni. Pulv. rhei ℈ij. mane.—2d day. Purged.—3d day. One natural dejection.—4th day. Quite well. Discharged. *Re-admitted* three months afterwards. Partial paralysis of the inferior extremities, and pains in the left hepatic region; palpitation, loss of strength and appetite. Pulse 98, large and soft. Tongue scarlet, and paler near the point. Skin very variable.

*Diagnosis.*—Congestion in both parts of the portal system, affecting the abdominal ganglia and plexuses, with a

tendency to hepatitis. Free, general, and local bleeding, calomel, blisters, and topical applications, were used. After four months' treatment, transferred, and had the advantage of a short sea voyage. Years have now elapsed, and this person performs his duty without any inconvenience except those that result from intemperance.

*Observation.*—The partial paralysis was, in my opinion, solely the result of hepatic congestion, which became extended to the abdominal ganglionic nerves, and hence to those of the lower extremities (Par. 19, 20, 21, 22, 23, 24, 25, 26); and the consequence of treatment, directed to remove that condition, was recovery.

(51.) Ætat. 24. One year in India. Full size, fair, muscular. Three days' purging; dejections bilio-feculent and muco-sanguineous, with tormina and tenesmus; twenty in the night. Urine dark and scanty. Pulse 110, firm and continuous. Tongue furred, white; margins red; skin natural. Venæsectio statim ad ℥xxxvj. Antimon. tart. gr. iiss. 4â. horâ p. m. Calomel gr. xv. horâ somni. Ol. ricini mane.—2d day. Dejections bilio-feculent. Pulse 88. Tongue and skin natural. Repet. Calomel hor. som. et ol. mane.—3d day. Better; no medicine.—6th day, discharged.—Ten days afterwards, *re-admitted.* Tremors; profuse sweats, nausea, and vomiting; cramps of the lower extremities. Tongue furred. Pulse 100, firm. Venæsectio ad ℥xvi. statim. Calomel gr. xij. Opii gr. j. horâ somni. Pulv. Jalapæ comp. ℈ij. mane.—2d day. Slept. Pulse, tongue, and skin natural; a little pain in the bowels. Urine dark, dejections dark, bilio-feculent. Ipecac. ℈j. bis die.—6th day. Discharged. Twenty days afterwards, *re-admitted,* with bilious fever. (Case No. 30.)

*Observation.*—The continuous pulse at the invasion in every case indicates general bleeding, and the omission will be dangerous. After bleeding, the hepatic function im-

proved, and intestinal irritation speedily disappeared. The second admission shews how surely intemperance destroys health by producing gastro-intestinal and hepatic irritation and congestion; and that repetition of blood-letting is necessary for their cure. The third admission shews the susceptibility of the subject to returns of hepatic disorders after congestion or obstruction.

(52.) Ætat. 29.—One year in India. Tall, muscular, fair. Giddiness, nausea, headache and purging, loss of strength and appetite. Pulse, tongue, and skin nearly natural. Calomel gr. x. horâ somni. Pulv. rhei ℈ij. mane. —2d day. Pulse 90, hard; slight twitching of the tendons; eyes glistening, and slightly injected; tongue excited; skin natural; dejections muco-sanguineous; urine dark and scanty; thirst. Venæsectio ad deliquium; ℥xxxvi. drawn. Ol. ricini ℥j. Calomel ℈ss. at night. Ipecac. ʒss. at noon, and ol. ricini ℥ss in the morning.—5th day. Discharged.

*Observation.*—This is the outline of a very common case in Indian practice. The abdominal viscera acquire some degree of congestion from the over free use of solids and fluids. The hepatic functions become deteriorated, and the mucous follicles of the large intestines assume a congested and irritated condition. Blood-letting, general and local, mercurials, ipecac. and purgatives with regimen and demulcents, suffice for the cure.

(53.) Ætat. 24.—Two years in India. Middle size, muscular, fair. Abdominal pains, tormina and purging; dejections dark and scanty, with tenesmus, nausea; urine scanty and dark; tongue furred; skin moist. Pulse 92, small and hard; loss of strength and appetite. Venæsectio ad deliquium. Calomel gr. xv. horâ somni. Ol. ricini ℥j. cras. Subsequently treated with Ipecac. Pil. hydrarg. et ol. ricini.—7th day. Discharged.

*Observation.*—This is nearly similar to the preceding case.

(54.) Ætat. 22.—One year in India. Middle size, spare, dark; recently cured of dysentery. Frequent dejections; muco-bilious and bilio-feculent. Skin cold and clammy. Pulse and tongue natural. Calomel ℈j. statim. Pulv. rhei ℈ij. post hor. 4r.—2d day. Purged.—3d day. Better. Mist. Nitro-ammon. ℥ij. ter die.—8th day. Discharged.

*Observation.*—In this instance, the frequent bilious dejections, with cold wet skin after dysentery, indicated an increased secretion of bile, with an irritable state of the gastro-intestinal mucous membrane. Accordingly, the liver was first stimulated, to disgorge the biliary secretion, and subsequently neutral salines were employed to allay and remove irritation from the mucous surface. That course, with regimen and demulcents, sufficed.

(55.) Ætat. 26.—Two years in India. Middle size, muscular, fair. Nausea, headache, loss of strength and appetite; yellow watery purging these four days. Pulse 86, soft. Tongue excited. Skin natural. Pulv. Ipecacuan. ʒss. bis die sine potu.—3d day. Discharged.—Six months afterwards, *re-admitted.* Costiveness; loss of appetite; strength and sleep gone; thirst; urine red. Pulse 110, quick and soft; tongue furred white; skin warm. Four days' treatment with purgatives. Discharged.

*Observation.*—The Ipecac. disgorged the biliary apparatus, stimulated and cleansed the mucous follicles and the gastro-intestinal surface generally. Congestion and irritation then ceased: re-admission took place from torpor of the liver, and then purgatives were successfully employed.

(56.) Ætat. 22.—Six months in India. Numerous

scanty mucous dejections for the last two days. Pulse, tongue, and skin natural; loss of appetite, and pain of the head. Urine scanty. Pulv. Ipecac. ʒss. stat. et vespere sine bibendo. Three days' treatment; quite well. Discharged.

*Observation.*—The Ipecacuanha did not vomit, but purged the patient copiously: dejections tarry, green, and viscid. Pain of the head, that accompanied the other symptoms, indicated a mild or an earlier stage of hepatic congestion. The Ipecacuanha, by freely disgorging the biliary apparatus, removed the complaint.

(57.) Ætat. 27.—Seven months in India. Tall, robust. Purging these two days. Dejections bilio-feculent. Pulse, tongue, and skin natural. Calomel ϑss. horâ somni. Pulv. rhei ϑij. cras.—2d day. Better. Ipecac. ϑss. bis die.—4th day. Discharged.—Two months afterwards, *re-admitted.* Griping, with frequent bilio-feculent dejections; nausea and pain of the head. Pulse 90, large and soft. Tongue furred; skin cool and moist; cramps in the left leg; anorexia these ten days. Urine dark and scanty. Venæsectio ad deliquium, statim. Calomel ϑss. horâ somni. Ol. ricini ℥iss. cras.—4th day. Discharged.—Subsequently, *re-admitted* with chronic dysentery. (Case No. 115.)

*Observation.*—The reception report marks hepatic derangement and congestion with engorgement and irritation of the intestinal mucous membrane. The short period of treatment, and subsequent re-admission, with chronic dysentery, shew that the cause of intestinal disease (congestion) had not been removed, but merely checked and lessened. This circumstance should lead to a longer period, and more efficient course of treatment, as three or four days are insufficient for removing organic congestion, and re-establishing healthy circulation and functions in the abdominal viscera.

(58.) Ætat. 19.—Tall, thin, and fair; subject to remittent. Since yesterday, frequent scanty colourless dejections. Tongue slightly furred; skin very moist; urine scanty and red. Pulse 92, soft and feeble. Calomel ℈j. Opii gr. ij. statim. Pulv. rhei ℈j. cras.—3d day. Pulse, tongue, and skin natural; little sleep. Abdominal pain; no purging. Ipecacuan. ℈ij. Calomel gr. vj. Opii gr. j. horâ somni. Pulv. rhei ℈ij. cras mane.—4th day. Quite well. Discharged.

*Observation.*—Colourless dejections shew the absence of bile in the gastro-intestinal tube; and those cases not only resemble cholera, but they are very constantly the prelude to general collapse, and cholera of the dangerous form. This accounts for the exhibition of a full dose of opium combined with the calomel. The Ipecacuanha and calomel employed on the third day were intended to disgorge the gall bladder, and most probably the ailment originated from retention of bile.

(59.) Ætat. 26.—Three years in India. Tall, thin, fair. Vomiting at times; frequent, scanty, yellow dejections; heaviness; sleeps; anorexia; headache. Pulse 76, soft and heavy. Tongue excited; skin quite cold, and moist. Venæsectio ad deliquium statim; ℥xxxvi. drawn. Calomel gr. viij. horâ somni. Antimon. tart. gr. ij. cras mane in aquâ, ℥j.—2d day. Better.—3d day. Quite well. Discharged.

*Observation.*—A well-marked case of hepatic congestion, with engorgement and irritation of the mucous surface in the inferior extremity of the ilium. The hepatic affection fortunately afforded the character of pulse that indicated immediate bleeding, and the prompt recovery seems principally due to it.

(60.) Ætat. 19.—Nine months in India. Middle sta-

ture, pale, slender. Frequent muco-bilious dejections. Pulse 84, soft and large. Tongue excited; skin moist; no appetite; restless. Urine dark and scanty. Calomel gr. x. Opii gr. ss. statim. Pulv. rhei ℈j. vespere.—2d day. Better. Antimon. tart. gr. ij. in aquâ bis die.—4th day. Discharged.

*Observation.*—Slender subjects recover from congestion without bleeding, more readily than robust persons, because the latter are more plethoric.

(61.) Ætat. 37. Fourteen years in India. Middle stature, dark, muscular. During three days subject to frequent muco-bilious and colourless dejections; cannot sleep; anorexia; debility. Urine scanty, dark. Pulse 96, small, feeble. Tongue furred white; skin cold. Venæsectio statim ad deliquium; ℥xxxvj. drawn, not cupped. Calomel ℈ss. horâ somni. Pulv. rhei ℈ij. mane.—2d day. Repet. calomel.—3d day. Calomel ℈j. horâ somni. Ol. ricini ℥j. mane.—4th day. Improving. Ipecacuan. et Pulv. Rhei ā ā gr. x. bis die.—5th day. Not better. Calomel ℈j. hor. somni. Ol. ricini ℥j. mane.—8th day. Quite well. Discharged.

*Observation.*—The good effect of blood-letting is well marked in the history of this case, and contrasts admirably with the doubtful character of the pulse.

(62.) Ætat. 23.—Nine months in India. Short, slender, pale. Two months since, four days in hospital with intermittent. Bowels loose these ten days; frequent scanty muco-bilious dejections; borborygmi, anorexia, debility, and sleeplessness. Pulse 96, soft. Tongue covered by long fur; skin moist. Urine dark and scanty. Calomel ℈ss. statim. Pulv. rhei ℈ij. vespere.—2d day. Ipecac. ℈j. bis die sine potu.—4th day. Discharged.—Five months afterwards, *re-admitted* with chronic hepatitis. (Case No. 180.)

*Observation.*—The omission of bleeding, the speedy dis-

charge and subsequent attack of hepatic disease, shew the importance of early minute examination, serious attention, and prompt judicious practice.

(63.) Ætat. 34.—Middle size, muscular, thin, fair. Thirteen years in India. Constantly affected with looseness at night; dejections aqua-bilious; attributes the complaint to the effects of night air. Pulse, tongue, and skin natural. Ipecac. ℥j. omni die sine bibendo. Three days' treatment. Discharged. Subsequently *re-admitted* with dyspepsy. (Case No. 17.)

*Observation.*—The chief cause of these disorders is intemperance, and repletion. The Ipecac. removed the complaint, by disgorging the biliary apparatus; at the same time cleansing and improving the tone of the gastro-intestinal mucous capillaries.

(64.) Ætat. 25.—Seven months in India. Short, fair, muscular. Subject to pains of the side and belly, with purging. Frequent scanty muco-bilious dejections. Urine dark and scanty. Pulse 90, large and full. Tongue tremulous, moist; skin natural. Venæsectio ad deliquium. Calomel gr. xv. horâ somni. Pulv. rhei ℈ij. mane.—2d day. Improving. Ipec. ℈ij. bis die.—7th day. Discharged. Three months afterwards, *re-admitted.* Frequent muco-bilious dejections these three days, at times stained with blood. Pulse, tongue, and skin natural. Calomel gr. x. horâ somni omni nocte. Ol. ricini ℥ss. p. r. n. Mist. Salin. ℥ij. bis die.—3d day. Omit. calomel. Con. alia.—6th day. Discharged.

*Observation.*—The general bleeding relieved the vascular system, and the Ipecac. succeeded in re-establishing healthy action of the capillaries in the mucous surface. On re-admission, the success of treatment rested on the point, whether congestion did exist or not to an extent that rendered

bleeding necessary. The calomel stimulated and disgorged the liver; and, with the other remedies, regimen, demulcents, and repose, sufficed for the cure without bleeding.

(65.) Ætat. 25.—Three months in India. Middle stature, fair, muscular. Subject to thoracic oppression. Pain at the umbilicus, with frequent muco-bilious dejections. Tongue foul. Pulse and skin natural. Hirud. xxiv. part. dol. Postea fotus. Ol. ricini ℥j. mane.—2d day. Emplast cantharid. part. dol. Pil. hydrarg. gr. xij. horâ somni. Ipecac. gr. viij. bis die.—3d day. Violent headache. Hirud. xxxvj. capiti inter crinem.—6th day. Dry cough, and pain in right arm. *Diagnosis*, hepatitis. Calomel gr. vj. Antimon. tart. gr. iss. om. nocte.—12th day. Hirud. ij. apud anum om. die et Con. calomel.—16th day. Discharged.

*Observation.*—Hepatic congestion, combined with a similar state of the capillary vessels in the intestinal mucous membrane, produced symptoms of intestinal disease. The latter was treated as the sole affection; and when that was relieved, then hepatic symptoms predominated. The hepatic affection was treated and cured by mercury and local bleeding. Headache generally marks hepatic engorgement.

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## SECTION V.

### ABRIDGED CASES OF ACUTE HEPATIC DYSENTERY.

(66.) Ætat. 25.—Received from His Majesty's ship ———, with a note, stating that he has been ill fifteen days with fever, giddiness, headache, abdominal pain and purging, with tormina and tenesmus. That bleeding, Pulv. rhei and calomel, with antimony and opium, had been

employed; the mouth became affected, and the case improved. The remedies being partially discontinued, relapse took place, and he was therefore transferred for treatment ashore. Came under my care; mouth slightly affected with mercury; frequent bilio-feculent and sanguineous dejections, with abdominal pain and tenesmus; anorexia; great prostration of strength. Pulse 118, round. Tongue furred, clammy. Skin covered with cold clammy perspiration. Urine scanty and dark. Hirud. x. part. dol. abdominis. Calomel et Pulv. Antimon. āā gr. v. Opii gr. ss. M. bis die. Ol. ricini ℥ss. p. r. n. Fotus frequenter.—2d day. Passed several large coagula of blood, with feculent and muco-sanguineous dejections. Not better. Emplast. Cantharid. p. d. abdominis et con. pil.—3d day. Not better. Con. remed. Hirud. xij. circum anum.—4th day, in the morning, expired.

*Dissection* twelve hours after death. The body much emaciated. Cerebral engorgement; effusion between the convolutions and at the base of the brain, and some in the left lateral ventricle. Effusion observed in the spinal theca, and the vessels near the cauda equina on the anterior surface are injected. *Thorax.*—The lungs collapsed; superior right globe is in part a deep chocolate colour and hepatized. The aorta has three inches of its internal coat a dark red, and gritty particles are interspersed through that part, apparently points of ossification. *Abdomen.* The Liver is firm and gorged throughout; pores well filled with bile. Gall bladder contains viscid amber-coloured bile. Spleen, pancreas, and kidneys are nearly natural. Mucous membrane of the stomach is corrugated; rugæ of the duodenum, jejunum, and ilium are well developed. Within two feet of the cæcum, a continuous blush commences; several minute ulcers in the cæcum and ascending colon. In the transverse arch, there are numerous ulcers, from the size of a millet seed to that of a rupee; the sigmoid flexure

is studded with large ulcers, and in the rectum there are numerous ulcers the size of a dollar. The last two inches of the mucous membrane is disorganized by one continuous surface of ulceration, which had sloughed. Mucous membrane of the urinary bladder is healthy.

*Observation.*—This was not an ordinary or usual case of dysentery, and therefore it requires peculiar consideration. The illness continued in all nineteen days. Bleeding and mercurials afforded temporary improvement, but blood reappeared in the dejections, and he was transferred with a clammy cold skin, indicating either abscess or sphacelus. I regret not having employed general bleeding the first day of transfer, but I then feared that it was contra-indicated by the other symptoms. Patients rarely recover after passing large coagula of blood from intestinal vessels, opened by ulcers; because the consequent destruction of capillary communication and circulation usually produces sphacelus. The ulcers resembled those of syphilis; the largest was at the lower part of the rectum, and they decreased in extent, ascending thence to the cæcum.

(67.) Asiatic, Ætat. 28.—Frequent muco-sanguineous dejections, without pain. Pulse 120, soft. Tongue foul; skin hot; ill four days, and used no food. Ol. ricini ℥j. statim.—2d day. Better; no pain; conjunctiva yellow. Calomel gr. iv. et Pulv. Antimon. gr. ij. ter die. Vespere, delirium. Pulse 110, large and soft. Abdomen a little tense. Admoveantur hirudines xv. abdomini et viij. temporibus. Vesicat. inter scapulas.—3d day. Not better; dejections loose. Ipecac. ʒj. bis die.—4th day. Several green dejections, but delirium continues. Noon expired.

*Dissection*, twelve hours after death. Cerebral effusion. Arachnoid milky; slight congestion of the spinal vessels. *Thoracic* viscera natural. *Abdomen.*—Liver slightly enlarged, externally dark, granular, and contains no blood.

Mucous coat of the stomach studded with innumerable minute ulcers, that extend to the muscular coat; lower part of the ilium extremely vascular. Valve of the cæcum destroyed by ulceration; internal surface of the cæcum colon and rectum studded with large ulcers, distinct from each other, when the intestine is stretched, but apparently when it occupied its natural situation (in folds) the ulcers presented internally one continuous surface of ulceration. The mucous membrane having become thickened, the ulcers occupy the elevated surfaces, and do not sink through the mucous coat as ordinary dysenteric pustules, because death took place unusually soon, and they had not time to perforate the membrane. Just within the sphincter ani, the ulceration is continuous, and here the mucous membrane is thickened to a quarter of an inch.

*Observation.*—Bleeding should not have been omitted on admission in this case. It may serve as a useful lesson, shewing that intestinal ulcers frequently enlarge with such rapidity, that unless their extension is checked at the time of admission, they speedily destroy the mucous surface to an extent incompatible with life. The early death was owing to the characters of disease associated in this instance. Unusually extensive gastro-intestinal ulcers became aggravated by the accession of congestive nervo-bilious fever.

(68.) Ætat. 32.—Five years in India. Fair, muscular, middle size. Abdominal pain and tenesmus; pain of the head. Pulse 105, small and hard. Tongue white; skin cool; urine scanty. Venæsectio ad ℥xxx. Enema Emoll. p. r. n. Ol. ricini ℥j. cras. Calomel gr. iv. Pulv. Antimon. gr. ij. Opii gr. ss. M. 4is. horis.—2d day. Dejections muco-sanguineous. Con. Med.; hirud xv. circum anum.—3d day. Not better. Tongue red. Pulse 110, small and hard. Con. Med. Venæsectio ad ℥xx.—4th day. Hirud x.

circum anum. Con. med.—5th day. Profuse sweats. Pulse 110, small and weak; tenderness at the epigastrium. Enema anodynum p. r. n.; hirud. xxxv. p. d. Ol. ricini ℥j. Tinct. opii g$^{tt}$xxx. statim.—6th day. Worse. Calomel ℈j. bis die. Emplast. canth. abdomini.—7th and 8th days. Cold sweats; pink flush of the cheek.—9th. Delirium, and death.

*Dissection* twelve hours after death. Cerebral engorgement and effusion; arachnoid milky; effusion into the spinal theca.—*Thorax.* Pulmonary engorgement.—*Abdomen.* The liver pale and bloodless, its texture close, less granular, and contains an increased quantity of fatty substance. This state often accompanies, and perhaps produces, dysenteric disease. The gall-bladder prodigiously dilated with tarry granular bile, too thick to flow through the common duct, even from moderate pressure. There is a black patch on the right lobe, that extends a quarter of an inch into the hepatic tissue, not disorganised. Spleen and kidneys natural; capillaries of the pancreas engorged; interior surface of the stomach dark from congestion. Engorgement of the mucous coat of the ilium towards the cæcum. The cæco-iliac valve is thickened. Mucous coat of the cæcum red from congestion. Oblong ulcers, extended transversely, are numerous in the colon; in the sigmoid flexure and rectum a few ulcers are round and deep: the general character of disease in the rectum is a series of minute and clustered elevations, crowning thickened parts of the mucous membrane, resembling the acuminated elevations of warty excrescences on the external surface, only in this case they are grouped. Six ounces of pus is found in the rectum, apparently formed from the ulcers, and from the mucous surface. The ascending, the descending colon, and the stomach, are greatly distended with gas; the colon displacing the stomach, by forcing the large curvature upward, and the pylorus downward; hence it became placed dia-

gonally from left to right, as in nervous congestive fevers; frequent vomiting must result from this displacement.

*Observation.*—The treatment was conducted by another surgeon; I made the dissection. The hepatic structural change, and the retention of bile in the biliary apparatus, account for the invasion of intestinal disease. The very rapid extension of intestinal ulcers shows the importance of prompt and efficient treatment.

(69.) Ætat. 21.—One year in India; full size, fair, and muscular. Very frequently coming into hospital from gastro-intestinal and hepatic affections, occasioned by intemperance. *Re-admitted* with acute pain in the course of the colon from the cæcum; frequent muco-sanguineous dejections, with tormina and tenesmus. Urine scanty. Ill six days, and had no sleep these four nights. Pulse 124, small and soft. Skin warm and moist. Tongue white. Ol. ricini ℥j. statim. Hirud. xxiv. part. dol. Ipecacuan. gr. x. Calomel gr. vj. horâ somni. Repet. ol. ricini cras; fotus frequenter.—2d day. Not better. Pulse 104, hard. Skin hot and dry. Hirud. xij. part. dol. et viij. circum anum, postea balneum calid. Con. med.—3d day. Pulse 124, small and hard; face flushed; not better. Hirud. xxiv. abdomini, et vj. circum anum. Con. med.—4th day. I attended in consultation; not better. Venæsectio statim. Hirud. xxx. vespere. Calomel gr. xv. Ipecac. gr. x. hor. som. Con. ol. mane.—5th day. Pulse 130, small and indistinct. Tongue chalky. Skin cool and wet. Con.—6th day. No better. Pulse 140; dejections muco-sanguineous, with some black clots, and others transparent. No pain or tenesmus; but tenderness of the belly. Con.—7th day. Had ℥iij. of tinctura opii rubbed over the surface, to procure sleep in the night. Took ℥j. of tinct. opii; was quiet. Pulse 144, thready. Extremities cold, sinking, and died on the morning of the eighth day.

*Dissection* twelve hours after death.—Cerebral and spinal effusion. Thoracic viscera natural.—*Abdomen.* Ilium and colon distended with gas; the liver of a natural colour, with numerous adhesions to the diaphragm. Gall-bladder and ducts distended with bile. The kidneys quite dark from capillary engorgement. Spleen natural; pancreas dark. Mucous membrane of the stomach pale. Ilium, four feet from its commencement, has its mucous surface red; pale honeycomb ulcers commence, and they, with patches of engorgement, mark the surface to the cæcum. The inner surface of the cæcum throughout is diseased: 1*st*, with large chronic ulcers extending almost around, with a dark surface; 2*dly*, large ulcers, with a congeries of elevations, similar to those on warts; 3*dly*, formed pustules, thickened, elevated, and containing cheesy pus; 4*thly*, small pustules, with a depression in the centre, adequate to admit a probe; 5*thly*, mucous membrane smooth, but red; large open ulcers are so closely placed in the colon, there is not a finger's breadth between them. Pressing the membrane lining each pustule, thick pus escapes. The mucous surface unoccupied by ulcers is studded with minute pustules, constituting the early stage of disease; some having a cavernous centre, which admits a fine probe. The transverse colon is perforated by a sphacelated ulcer.

*Observation.*—The hepatic adhesions are an additional proof of inflammation having preceded intestinal disease. The rapid progress to a fatal termination should inculcate the early use of the most effectual means to arrest fatal disorganization. I made the dissection in this case for one of my respected colleagues.

(70.) Ætat. 22.—Three years in India; middle stature, fair, muscular. Ill six days, passing frequent muco-sanguineous dejections, with tormina and tenesmus. Pulse 60, large. Tongue and skin natural. Ol. ricini ℥j. statim.

Calomel gr. vj. Antimon. tart. gr. j. horâ somni; repet. ol. mane si opus sit. Hirudines xvj. abdom. statim. Fotus frequenter abdomini.—2d day. Better. Ipecac. gr. vj. alternis horis.—3d day. Restlessness, easiest on the back. Pulse large, full, and soft. Tongue pink and paler. Skin moist. Hirud. xij. scrob. cordis. Calomel et ipecac. āā gr. vj. horâ somni. Con.—7th day. Pulse 75, full, and as if a tightened thread was in it. Venæsectio ad ℥x. Con. —10th day. Discharged. Eight days afterwards *re-admitted*, in the former state. Ol. ricini ℥ss. statim. Calomel gr. vi. Antimon. tart. gr. j. horâ somni omni nocte. Ol. ricini cras et p. r. n.; fotus frequenter.—2d day. Pulse compressed. Venæsectio ad ℥x.; hirud. xvi. scrob. cordis. Ipecac. gr. vj. tertiâ horâ. Con. alia.—4th day. Hirud. vj. perineo et circum anum. Con.—7th day. Hirud. xiij. perineo et circum anum.—8th day. Urine turbid, like decoction of bark. Hirud. vij. perineo.—10th day. Not better. Calomel ℈j. horâ somni.—11th. Great enlargement of the trunk in the centre part of the body occupied by the liver, with puffiness of the integuments, gives an idea of hepatic abscess. Emplast. cantharid. regioni hepaticæ. Con.—13th. Expired.

*Examination* twelve hours after death. Cerebral and spinal effusion. Thoracic viscera natural. Three pints of straw-coloured serum found in the abdominal cavity. The large intestines greatly distended with gas. The cæcum is perforated by a sphacelated ulcer. Mucous coat of the stomach very dark from engorgement; patches of inflammation and ulceration on the mucous surface of the ilium; the cæcum ulcerated and diseased throughout. The ascending and transverse colon very little diseased; the sigmoid flexure and rectum had their mucous coat ulcerated very extensively; the liver considerably enlarged, pale, and blanched, its structure close, not granular. The gall-bladder very much enlarged and distended; the spleen

enlarged and pulpy; kidneys and pancreas dark. Urinary bladder contracted, and it contained ℥ij. of thick whitish fluid.

*Observation.*—In this case, the first and second days were nearly lost in the use of slight remedies; hepatic engorgement is pronounced the third day, and general bleeding only resorted to on the seventh day; recovery of a partial kind speedily follows, i. e. the congestion becomes lessened and checked. The morbid condition being merely ameliorated, not eradicated, the patient soon returns with the disease in a more advanced stage. The pulse too depressed, and the subject too much exhausted, to afford much hope from general bleeding; the engorged and enlarged state of the liver became quite obvious on the tenth, and he expired on the thirteenth day. The close structure of the liver, and its enlarged condition, show that this gland acted a principal part in the production of disease, and that remedies, to have been successful, must have first relieved and eradicated that congested and engorged condition of the liver. The time to effect that important object is in the beginning.

(71.) Ætat. 22.—Three years in India; middle size, fair, muscular, prone to intemperance. In hospital eight days with rheumatic pains of the hips and knee-joints. One month after discharge *re-admitted* with pain across the abdomen, frequent muco-sanguineous dejections, tormina, and tenesmus. Pulse 96, small and soft. Skin moist; tongue white; has been drinking. Calomel gr. x. Opii gr. j. statim. Ol. ricini ℥j. cras.—2d day. Pulse large, full, and firm; no improvement. Venæsectio ad deliquium. Ipecac. ℈ij. vesp. et mane, sine bibendo.—4th day. Quite well. Discharged. Six weeks afterwards *re-admitted*, with pain in the right arm and elbow-joint, from injury received whilst intoxicated. Appetite bad. Cannot sleep. Pulse

80, large, and surges a little. Tongue foul; skin natural. Venæsectio ad ℥x. Hirud. xiv. part. dol.; fotus frequenter. Calomel et extract. col. comp. āā gr. vj. horâ somni. Mist. purgans, mane. After thirteen days' treatment, discharged. Six weeks afterwards *re-admitted.* Ill twelve days, passing frequent muco-sanguineous dejections, with tormina and tenesmus; loss of sleep and appetite. Pulse 80, firm. Tongue furred; skin moist; has been drinking. Calomel gr. v. Antimon. tart. gr. j. horâ somni. Ol. ricini ℥j. mane.—2d day. Pulse 78, small and compressed, firm. Venæsectio ad ℥xij.; hirud. xxxvi. abdomini, et v. circum anum. Ipecac. gr. iij. 2is horis. Calomel gr. viij. Opii gr. j. omni nocte. Ipecac. ℈ij omni mane; fotus frequenter. —3d day. Hirud. xxj. abdomini, et v. circum anum.—4th day. No better. Calomel ℈j. horâ somni. Con. alia. Emplast. cantharid. abdomini.—5th day. Retrograding. Con. remedia. Wine whey.—6th day. Expired.

*Dissection* nine hours after death. Cerebral venous engorgement, and effusion of fluid; arachnoid milky; arterial engorgement at the base of the brain. Effusion into the spinal theca, and engorgement of the equinal vessels.—*Thorax.* Viscera natural, except a pink flush in the aorta. —*Abdomen.* Specks resembling ecchymosis on the mucous membrane of the stomach; that of the duodenum pink; jejunum pale; ilium has patches of engorgement augmented near the cæcum. Cæco-iliac valve thickened and inflamed. The entire surface of the cæcum is occupied by a sloughed ulcer; the ascending colon has very extensive sloughed ulcers; and the remaining mucous membrane is strongly injected. The arch, descending colon, sigmoid flexure, and rectum, have scarcely a vestige of mucous membrane left; sloughed ulcers occupy their surface almost uninterruptedly. The liver is large, and its tissue firm, yet granular; the convex surface presents a white corru-

gated scar, marking the site of a former abscess. The gall bladder is large, filled with tar-like bile; vessels of the pancreas injected. The kidneys injected and dark; spleen natural.

*Observation.*—I have frequently remarked, that pains of the knee joints either precede or accompany the course of hepatic disease; and to me they appear to originate from that cause. There was no improvement after early admission until general bleeding was employed, and then prompt recovery. The history of second admission shows that depletion again preceded recovery. The third history presents the patient in the advanced stage of disease; bleeding was deferred the first day, owing to exhaustion from drinking to excess, and death ensued on the sixth day. The rapid progress of this disease to a fatal termination, shows that every minute of the early stage is valuable, because, after ulceration has extended considerably, subsequent depletion, or other means, are rarely successful.

(72.) Ætat. 26.—Three years in India; middle stature, fair, muscular; dissipated; frequent muco-sanguineous dejections. Pulse, tongue, and skin, natural. Calomel gr. vj. horâ somni, et ol. ricini mane.—2d day. Hirud. iv. circum anum. Ipecac. gr. v. ter die. Ol. ricini ℥ss. om. mane.—3d day. Patient refused leeches; again ordered. Hirud. v. circum anum. Con.—7th day. Convalescent.—11th day. Fulness at the epigastrium, oppression of the chest, and pain. Bowels loose; skin dry. Pulse 80, soft. Tongue furred. Calomel gr. viij. Pulv. antimon. gr. iv. horâ somni omni nocte.—12th day. Vomiting, purging, and collapse, came on in the night. Pulse 122, small and oppressed; bleeding ineffectually tried; delirium and coma followed. Brandy, with hot water and laudanum, calomel, and opium, were used in vain, with blisters and sinapisms.

*Dissection* ten hours after death. Cerebral effusion and engorgement. Effusion into the spinal theca, with a blush on its surface. Very extensive pulmonary congestion. The stomach vascular; mucous surface of the small intestines has a blush throughout, with patches of engorgement, and honeycomb ulcers. The large intestines are contracted throughout; patches of congestion in the cæcum; numerous inflamed patches throughout the large intestines, and minute ulcers in the rectum: other viscera of a natural appearance.

*Observation.*—Intestinal disease was treated with means rather local than constitutional and general; we hence see that it disappeared, and hepatic engorgement became pronounced. General bleeding should then have been adopted, but calomel was relied on: meantime, cholera supervened next day, and carried off the patient. The dissection at least affords one intelligible lesson; we find minute ulcers in the rectum, which, at the period of admission, must have been in an irritable state, and considerably larger; hence, the treatment had been advantageous.

(73.) Ætat. 22.—Three years in India; middle size, fair, muscular; prone to excesses. Ill seven days, passing muco-bilious and muco-sanguineous dejections, tormina, tenesmus, anorexia, and debility. Pulse 96, firm. Tongue and skin natural.—6th day. xlviij. leeches, and two blisters, have been used. ℈ij. doses of ipecac. and ol. ricini were employed daily. Pulse 110. Better.—15th day. Remedies continued; xxij. leeches and cataplasm to the abdomen. —17th day. Five inches of the mucous membrane sloughed and came away.—20th day. All the remedies continued: little alteration. Ipecacuan. ʒss. bis die. Con. alia.—30th day. Had used the ipecacuanha and oleum ricini occasionally; retrograding; dejections muco purulent and biliosanguineous. Calomel gr. xij. in pil. ij. omni nocte.—

Thirty-fourth day. Throat and the mouth very sore; no ptyalism. Calomel gr. iij. horâ som. om. nocte. Ol. ricini ℥ss. p. r. n.—40th day. Dejections purulent; restlessness; sleeplessness; a rash, threatening ulceration over the abdomen. Con.—45th day. Better. Abdominal surface healing, except a spot over the sigmoid flexure, and one over the cæcum. Con.—50th day. Dejections, muco-sanguineous and puruleut; at times bilio-feculent. Uses barley-water, linseed tea, and oranges. Ol. ricini p. r. n. Calomel et Ipecac. continued.—55th day. Not better: retrograding. —59th day. Expired.

*Observation.*—Dissection not procured. The Ipecacuanha treatment was relied on through a long illness. The countenance preserved the fine hue of health throughout; proving the admirable agency of ipecacuanha in preserving the capillary circulation. In the commencement, bleeding would have brought the system into a state that might have been appropriate for the use of ipecacuanha; but where congestion has become established, it is extremely unsafe to hazard the patient's life, on the possibility of Ipecacuanha removing that state, even when aided by mercurials. I would not again omit the use of eight or ten grains of calomel at night; the *Ipecac. and ol. ricini being employed* through the day. The treatment being in every case prefaced by general and local bleeding.

(74.) Ætat. 23.—Three years in India. Tall, muscular, dark; prone to intemperance: discharged a month since. He came in suffering from injuries received in fighting, having marks of many very severe blows on the head. Hepatic symptoms and fever then set in, for which he was repeatedly bled and leeched during ten days. Now *re-admitted*, passing muco-sanguineous dejections for the last week, with griping and tenesmus. Pulse small and firm; skin hot and dry; tongue furred; urine scanty; anorexia.

Ipecac. ℈ij. statim, et mane.—2d day. Pulse 80, small and soft Hirud xxx. abdomini. Ol. ricini ℥ss. p. r. n. Con. Ipecac. bis. Hirud. xij. circum anum et perineo. After nine days' treatment, discharged. Six weeks afterwards, *re-admitted.* Has been drinking, and always ailing since he went out. Frequent muco-sanguineous dejections, with tormina and tenesmus; abdominal pain, increased by pressure; no sleep; some appetite Calomel gr. vj. Antimon. tart. gr. j. horâ somni, omni nocte. Ol. ricini ℥ss. pro re natâ. Fotus nicotianæ ad nauseam bis. Ipecac. ℈ij. om. meridie.—3d day. Hirudines xxx. abdomini et viij. circum anum et perineo. Con.—4th day. Hirud. xij. circum anum. Con.—5th day. Hirud. xij. circum anum. Con.—6th day. Pulse 90, small and compressed. Venæsectio ad ℥xvj. add. Calomel gr. iv. omni nocte (i. e. ℈ss.) —7th day. Hirud. xiij. perineo.—9th day. Slight ptyalism. Ipecac. gr. v. tertiis horis. Calomel gr. ij. horâ somni. Emplast. cantharid. abdomini.—10th day. Calomel ℈ss. Antimon. tart. gr. j. horâ somni omni nocte hirud. vj. scrob. cord. et vj. perineo. Con.—13th day. Hirud. vij. hypochondrio. Con. rem.—15th day. Diagnosis, hepatic abscess. Misturæ nitro-ammoniatæ ℥ij. 4is. horis. Con. Ipecac. et ol. ricini p. r. n. Omit. alia. Emplast. Cantharid. hypochond. dextro.—18th day. A tumor presents in the epigastric region. Hirud. v. supra cæcum. Cataplasm. tumori. Con. rem.—22d day. Expired.

*Observation.*—Dissection not obtained. Death appears due to hepatic abscess, which originated from the blows alluded to in the early part of the case. The fatal issue seems to have been favoured by the omission of prompt general, and local bleeding on the early re-admission. Hepatic engorgement should be considered equivalent to hepatic inflammation; and we may learn the truth and importance of that fact, together with the value of time from this and many other fatal cases. Hepatic congestion is readily checked, and the

symptoms speedily disappear, as pourtrayed in the first re-admission from local bleeding, &c. The same disease next presents itself, aggravated by symptoms of the chronic stage; and hepatic abscess speedily and unequivocally announces its existence, without any premonitory symptoms or warning.

(75.) Four years in India. Middle stature, fair, thin. Admitted with dysentery, and partially cured by mercurial ptyalism. Uses Ipecac. cum pil hydrarg, and passes biliofeculent dejections, with blood. Ipecac. gr. iv. ter die. Hirud ij. circum anum omni die. Those means were displeasing to the patient; he was discharged at his own desire, and ten days afterwards *re-admitted*. Considerable pain in the small of the back; thirst urgent; purging, tormina and tenesmus; dejections muco-sanguineous. Pulse 90, hard. Tongue excited; skin warm and moist. Venæsectio statim. ℥xxiv. drawn. Hirud. iv. circum anum. Calomel et Pulv. Ipecac. āā gr. x. vesperè. Ol. ricini mané.—4th day. Skin dry. Hirud. xviij. abdomini admovr.—5th day. A heavy pain in the loins; tongue furred; skin warm. Venæsectio ad deliquium. Mist. Sal. ℥iss. bis. Pulv. Ipecac. comp. ℈j. Pilul. hydrarg. gr. vj. M. om. nocte.—7th day. Severe pain over the cæcum and sigmoid flexure, with fulness. Hirud. viij. part. dol. Con. rem. vespere. Emplast. cantharid. part. dol.—9th day. No pain. Passed a quart of clotted mucus, with cheesy lumps, and much pure blood. Pulse 132, soft. Tongue heavy fur, brown in centre; skin moist and warm. Calomel gr. v. Ipecac. gr. j. 4tis. horis. Con. Pulv. Doveri. horâ somni.—10th day. Retrograding. Repet. pil. Calomel. bis die. Pulv. Doveri horâ somni, et ol. mane. Vin. rub. ℥ij.—Twelfth day. Expired.

*Observation.*—This case was partially cured by mercurial ptyalism; and when it came under my care, and the patient

refused leeches, general bleeding should have been adopted. The recurrence of disease seems due to remaining hepatic congestion. It is probable that repeated general bleeding, on the second admission, might still have saved his life; but the second and third days were occupied only with medicine. The cheesy substances, clots and blood evacuated on the ninth, shewed that the mucous membrane had become extensively disorganized by pustular ulcers, and that the case was hopeless.

(76.) Ætat. 22.—Two years in India. Tall, thin, fair. Ailing six weeks with bowel complaint; frequent aquabilious dejections, especially in the night; cough, with muco-sanguineous expectoration. Pulse 100, large and soft. Tongue furred, moist, with livid dots; skin moist. Ipecac. gr. vj. ter die.—3d day. Ipecac. ℈ss. omni mane, ℈j. omni nocte.—10th day. Better. Con.—12th day. Muco-sanguineous expectoration, with pulmonary oppression. Pulse 80, strong; skin dry; headache. Hirud. viij. temporibus. statim. Mist. nitro-ammoniata, ℥ij. ter.—12th day. Not better. Venæsectio ad deliquium. ℥xxiv. drawn. —13th day. Emplast. cantharid. sterno.—18th day. Copious expectoration, restlessness, and thoracic pains. Hirudines viij. part. dol. Emplast. cantharid. mane. Con.—33d day. Sputa purulent, ℥x. daily. Con. Cataplasm. scrob. cordis et regioni hepaticæ.—40th day. Not better; retrogrades.—50th day. Retrogrades. Expectorates very copiously; digitalis has been given freely, without effect. —67th day. Expired.

*Observation.*—The disease was abscess of the liver. In this view, general bleeding should have been practised on admission, and subsequently leeches, blisters, and setons, repeatedly employed over the region of the liver; and neutral salines, mercurials, and alteratives exhibited internally.

(77.) Ætat. 29.—Seven years in India. Middle stature, muscular, fair. Formerly suffered with liver complaint. Frequent scanty muco-sanguineous dejections, with tormina, tenesmus; anorexia; thirst; debility. Pulse 100, small. Tongue white; skin cool. Hirud. xviij. abdomini statim. Ipecac. et calomel ā ā gr. x. horâ somni. Ol. ricini ℥ss. mane. —2d day. Hirud. viij. circum anum. Con. med.—3d day. Pulse 100, rather hard; strangury, and restlessness. Ven. sec. ad ℥xij. statim. Con. Med.—4th day. Con. hirud. xxvj. abdomini.—5th day. Hirud. iv. circum anum. Con. vespere hirud. xxiv. abdomini.—6th day. Pulse 112, soft and full. Sanguineous purging continues. Hirud. xviij. abdomini et con. med.—8th day. Coffee-like dejections marked the invasion of sinking.—11th day. Death.

*Observation.*—A dissection was not obtained. Reference to dissections of similar cases, will shew that the same course and termination of intestinal disease occur either in cases of hepatic congestion, or in those of abscess; there were no symptoms here to prove the presence of abscess. General bleeding was improperly omitted the first and second days. The coffee-like dejections mark the progress of sloughing ulcers of the intestinal mucous coat.

(78.) Ætat. 27.—Seven months in India. Middle stature, dark, muscular. Frequent muco-sanguineous dejections, nausea, vomiting, tormina and tenesmus; no pain on pressure. Pulse 78, soft; tongue and skin natural; urine pale. Pulv. Ipecac. ʒss. omni die. Hirudines vj. circum anum.—2d day. Pulse 108, very large and hard; tongue not yet furred; skin warm. Venæsectio statim ad deliquium. Pil. hydrarg. gr. xij. horâ somni. Ol. ricini ℥ss. cras.—3d day. Severe headache and tenesmus. Continuat. Hirud. xviij. temporibus.—4th day. Restless; not better. Pulse 86, soft and full; nausea. Hirud. xxiv. abdomini et vj. circum anum. Omit. pil. hydrarg. Ipecac. et calomel

ā ā gr. x. horâ somni omni nocte.—7th day. Dejections coffee-like; no pain. Con. med. Hirud. xij. nuchæ; postea emplast. canth.—9th day. Death.

*Observation.*—Dissection not obtained. The feeble pulse, at admission, was influenced by disease in the ilium; and this case evinced the characters of congestive nervo-bilious fever with those of dysentery. The danger of that combination of disease is great indeed. Congestion of the brain was advancing from the fourth day, hastened by intestinal ulcers disposed to slough. The practice must be prompt, prudent, and efficient, to repel this formidable disease.

(79.) Ætat. 24.—Middle size, fair, muscular. Passing muco-sanguineous dejections frequently for three days; tormina; tenesmus; debility; anorexia; sleeplessness; thirst. Pulse 86; tongue and skin natural. Ipecac. gr. v. hydrarg. sub. gr. iij. bis die.—2d day. No blood; dejections aqua-bilious. Ipecac. ℈j. Opii gr. ss. bis die.—Eight days' treatment, discharged.—*Re-admitted*, thirty-eight days afterwards, with cough, stuffing of the chest, full pulse, and febrile symptoms. Venæsectio ad deliquium. Emplast. Cantharid. inter scapulas. Calomel gr. vj. horâ somni. Pulv. Jalap comp. ℈ij. mane.—2d day. Chest relieved. Ipecac. ℈ss. bis die.—6th day. Cough continues. Emplast. Cantharid. sterno. Con.—After twelve days' treatment, discharged.—*Re-admitted* forty-four days afterwards. General debility, costiveness, and swelling of the belly. After four days' treatment with ol. ricini, discharged.—Two months afterwards, *re-admitted* with hepatitis, masked by the reference of pain to the iliac region with costiveness.—1st and 2d days, each xxx. leeches to the abdomen, with ol. ricini.—3d day. Severe heavy pain in the right hypochondrium, with fulness and enlargement; pain and weakness of the right thigh; no cough or pain in the shoulders. Pulse 72,

soft; tongue and skin natural. Emplast. cantharid. part. dol.; Haust. salin. bis die. Calomel gr. xv. horâ somni omni nocte.—4th day. Urine like decoctum cinchonæ and opaque, with purulent deposit.—8th day. Improving. Urine purulent.—9th day. Improving. Calomel gr. viij. horâ somni omni nocte.—11th day. Calomel gr. iv. horâ somni omni nocte. Improving.—13th day. Omit. calomel. Pil. hydrarg. gr. v. omni nocte.—20th day. Urine continues purulent.—53d day. Discharged, quite well. The urine continued opaque until the thirty-fourth day, and coloured green by bile for three days afterwards.—Thirteen days afterwards *re-admitted*, with rheumatic pains in the thighs. Six days' treatment with ammoniated liniments, and ol. ricini occasionally. Discharged.

*Observation.*—The second reception report is distinctly an hepatic case, promptly and successfully treated by depletion; but prematurely discharged. This attack affords good reason for believing the first admission to have been from a slighter and incipient stage of hepatic congestion, which was merely alleviated by treatment. The fourth reception report illustrates recovery from hepatic disease, by pus passing off with the urine. The fifth admission report shews the tendency of hepatic disease to the production of pains in the lower extremities, simulating rheumatism.

(80.) Ætat. 20.—Two years in India. Middle stature, fair, muscular. Ill a fortnight, from drinking. Frequent muco-sanguineous dejections; tormina; tenesmus; anorexia; debility; thirst. Pulse 92, large and surging; tongue furred; skin warm. Venæsectio ad deliquium, postea hirud. xii. circum anum, fotus frequenter. Flannel clothing. Calomel gr. viij. et Pulv. Antimon. gr. v. horâ somni. Ol. ricini ℥j. mane.—2d day. Severe pain across the umbilicus. Pulse 96, large, full and strong. Hirud. xl. abdomini et vj. circum anum. Ipecac. gr. v. tertiis horis.—3d day. Pulse

104, large, firm, and surging; great pain in the rectum. Tongue covered by long filamentous white, erect fur. Venæsectio statim ad deliquium et hirudines x. circum anum. Con. Ipecac.—4th day. Pulse 116, large, hard, and bounding. Venæsectio ad ℥xviij. et postea admoveantur hirudines xxviij. abdomini. Con. Ipecac. Calomel ℈ss. et Opii gr. ss. horâ somni. Ol. ricini ℥ss. mane.—5th day. Bedridden. Pulse 120, soft and large. Tongue coated, as if with white paint. Con. med.—6th day. No change. Infusum cinchonæ pro potu communi ad libitum. Con. alia med.—7th day. Pain in the legs. Pulse 120, large and soft, but occasionally has a thread in it. Venæsectio ad ℥xiij. Con. rem.—9th day. Con. Infus. Cinchonæ. Enema anodynum pro re natâ. Ipecac. gr. v. Pil. hydrarg. gr. vj. Zinc. Sulphatis gr. iij. M. in pil. ter die. Omit. alia med. Hirud. xij. supra cæcum. Emplast. Cantharid. eâ parte cras. Con. Pil. et fotus.—20th day. Vin. rub. ℥iv. in diem. Omit. Ipecac. Con. Potus.—26th day. Discharged.—Eleven months afterwards, *re-admitted.* Has been drinking; nausea; giddiness; tremors; anorexia; debility; thirst, and vomiting. Haust. Efferves. pro re natâ. Calomel. gr. v. Antimon. tart. gr. ss. M. hor. somni. Ol. ricini ℥ss. cras. —2d day. Pulse 68, very large and full; tongue as if covered with white paint, and tremulous; skin moist; bowels open. Con. haust. Hirud. xxviij. reg. epigastr. postea fotus frequenter.—4th day. Tongue still painted white. Hirud, ij. apud anum. om. die. Con. haust. Pil. hydrarg. gr. xij Ipecac. gr. ij. omni nocte.—9th day. Discharged.

*Observation.*—This case required general bleeding four times, and a hundred and fifteen leeches, in fifteen days; and having recovered in twenty-six days, is the best proof that medical treatment, without bleeding, or even with much less loss of blood, would not have been so successful. The long interval of health subsequent to this attack, and the excesses that produced the second admission, prove that

the original disease had been perfectly eradicated in the first period of treatment.

(81.) Ætat. 22.—Three years in India. Middle stature, fair, muscular. Frequeut muco-sanguineous dejections; tormina; tenesmus; anorexia; debility. Pulse 104, firm; skin moist; tongue covered by brown fur; no sleep. Ascribes his complaint to cold. Hirud. vj. circum anum. Ipecac. ℈ij. omni mane.—2d day. Pulse 80, large and full. Venæsectio ad deliquium. Cataplasm. magnum abdomini ter die.—3d day. Pulse large and soft. Con. Catapl. et Ipecac.; Ol. ricini ℥ss. pro re natâ.—7th day. Pulse 68, reduplicating. Hirudines xij. circum anum et perineo.—12th day. Pulse natural. Discharged.—Six months afterwards *re-admitted.* Has been drinking; severe headache; nausea; vomiting; febrile heat; bowels open. Pulse 100, soft; skin hot; tongue furred. Ipecac. ℈j. statim. Calomel gr. x. Opii gr. j. horâ somni. Ol. ricini ℥ss. cras.—3d day. Pain in the right side, and of the head. Pulse 74, large and full. Hirud. viij. lateri dextro.—4th day. V. Sect. ad deliquium. Hirud. xxiij. lateri dolenti. Pulv. Emetic. cras.—6th day. Ipec. ʒss. statim. Calomel gr. v. horâ somni. Pulv. Jalapæ Comp. ℈ij. cras.—7th day. Improving.—10th day. Severe pain of the ear and head. Repet. Venæsectio ad ℥x.—14th day. Discharged. —Sixteen days afterwards, *re-admitted,* with pain of the ear and head. Thirteen days' treatment with leeches, lotions, and purgatives. Discharged.

*Observation.*—General bleeding was improperly omitted the first day. When general and local bleeding, with other treatment, had moderated vascular disturbance, the symptoms of congestion were more pronounced. The first re-admission, with hepatic congestion and gastric irritation, became well marked on the third day; and the second re-admission was most probably due to the same cause. This series of reports

enables us to connect the combinations and changes of disease, and to trace the varying characters of hepatic derangement from the earliest invasion to the final issue.

(82.) Ætat. 27.—Three years in India; prone to excesses; tall, dark, muscular. Frequent muco-sanguineous dejections, tormina and tenesmus, thirst, anorexia, debility. Pulse 80, soft. Skin moist and cold. Tongue clean. Ol. ricini ℥j. Tinct. opii ʒss. statim. Emplast. cantharid. abdomini.—2d day. Calomel gr. x. Opii gr. j. horâ somni. —4th day. Better. Calomel gr. iij. Opii gr. ss. omni nocte.—7th day. Discharged. Four months afterwards *re-admitted* with gonorrhœa. After fifteen days' treatment, he became affected with acute dysentery. Venæsectio ad deliquium. Pulv. ipecac. comp. ℈j. horâ somni. Hirud. viij. circum anum, cras mane.—2d day. Pulse 84, small and firm. Fotus frequenter; et hirudines xviij. circum anum et perineo. Vespere. Ipecac. gr. v. ter die.—3d day. Pulse 88, large and full. Hirud. xiij. perineo et circum anum. Ol. ricini ℥ss. omni mane. Con. fotus. Suppositor. opii p. r. n. Thirteen days' treatment. Discharged. Six day afterwards *re-admitted* with dysentery. Pulse 84, moderate. Tongue and skin natural. Calomel gr. vj., Antimon. tart. gr. j. omni nocte.—2d day. Pulse 80, full. Tongue red; skin cool; pain over the cæcum and sigmoid flexure. Venæsectio statim ad deliquium. Hirud. xxxvi. supra part. dol. 11a horâ. Hirud. viij. circum anum et perineo, vesp. Con. calomel. Ipecac. ℈ij. om. mane.—4th day. Skin very hot. Hirud. xxx. abdomini. Calomel ℈j., Ant. tart. et opii āā gr. j. M. hor. somni omni nocte. Con. ipecac. Enema anodynum p. r. n.—8th day. Tongue chalky, as if painted; improving; mouth tender. Cal. ℈ss. Passes transparent mucous dejections, with numerous globules, the size of sago grains, mixed in them at equal distances.—10th day. Calomel gr. v.—11th. Improving.

Calomel gr. ij.—13th. Omit. calomel. Ipecac. ℈j. omni mane.—20th day. Discharged.

*Observation.*—The first admission details gastro-intestinal irritation, tending to dysentery, induced by intemperance. The cure is confided to calomel and opium, ol. ricini, and a blister, and it is effected in seven days. After four and a half months spontaneous dysentery took place; he then came under my care. General and local bleeding, with the ordinary treatment, effected its cure in thirteen days. the discharge, however, was premature; and accordingly re-admission took place, and the disease having returned, pursued a very dangerous course; the dejections indicating how closely the intestinal tubercles were placed (Vide 8th day); hence, if general and local bleeding, with mercurials, and the other means used, had not then placed the circulation of the mucous membrane in a state that secured it either from sloughing or the extension of ulceration, one or other must have taken place, and the patient could not have survived.

(83.) Ætat. 29.—Four years in India; full size, muscular, fair. Frequent muco-sanguineous dejections, tormina, tenesmus, anorexia, debility, restlessness, thirst. Pulse 112, large and full. Tongue and skin natural. Venæsectio ad ℥xviij. statim; hirud. vj. circum anum, cras mane. Ipecac. gr. vj. ter die.—2d day. Hirud. xl. abdomini. Repet. hirud. circum anum.—3d day. Abdominal pain. Pulse hard at times. Venæsectio pro re ad ℥xvi. Con. med. Ol. ricini ℥ss. omni mane.—4th day. Hirud. xx. abdomini. Con. med.—5th day. Repet. hirud. xx. abdomini.—6th day. Dejections from muco-sanguineous have become bilious. Ipecac. ℈ij. bis die. Con. ol.—7th day. Calomel gr. viij., Opii gr. j. om. nocte. Con. ipecac. et ol. ricini.—11th day. Omit. calomel. Con. alia.—13th day. Improving. Vin. albi ℥vj. in diem.—20th day. Dis-

charged. *Re-admitted* thirty-four days afterwards, passing frequent muco-bilious dejections. Pulse 90, small and firm. Tongue white; skin cold. Venæsectio ad ℥xx. Ol. ricini ℥ss. mane. Calomel gr. v. horâ somni.—3d day. Pulse 90, small: dejections like coffee paste. Hirud. xiij. perineo et circum anum. Pil. hydrarg. et ipecac. āā gr. vj. bis die. Omit. alia.—4th day. Restlessness; abdominal pain; hirud. xxvj. abdom. et xvj. perineo et circum anum. —7th day. Emplast. cantharid. abdominis part. dol. Con. ol. ricini ℥ss. pro re natâ.—13th day. Abdominal pain. Pulse, tongue, and skin, natural. Emplast. cantharid. part. dol. Con. rem.—15th day. Calomel gr. viij., Pulv. antimon. gr. iv. horâ somni. Con. alia.—19th day. Omit. calomel.—22d day. No complaint. Omit. med.—23d day. Discharged.

*Observation.*—The early general bleeding was small, and therefore it did not afford permanent advantage. This view results from the history of re-admission, detailing a dangerous relapse, cured with difficulty, by general and local bleeding, mercurials, &c.

(84.) Ætat. 19.—Two months in India; tall, dark, and muscular; of intemperate habits. Frequent muco-sanguineous dejections, tormina, and tenesmus, abdomen tender and painful. Pulse 79, soft; skin moist; tongue natural. Hirud. xxiv. abdomini. Ol. ricini ℥ss. stat. Ipecac. ʒss. vespere, et calomel gr. viij. horâ somni.—2d day. Transparent mucus, studded with opaque globules, like sago grains; less blood and tenesmus. Pulse 90, full and firm. Tongue red. Skin hot and dry. Venæsectio ad deliquium. Con. ipecac. et pil.; Ol. ricini ℥j. mane. Fotus frequenter.—3d day. No sleep; pain at the epigastrium; purging less. Hirud. xviij. part. dol. statim. postea fotus. Emplast. canth. p. d. vesp. Con. ipecac., pil., et ol. —5th day. Improving.—6th day. Omit. calomel gr. iv.—

7th day. Convalescent. Omit. cal. et ipecac.—12th day. Discharged.

*Observation.* — Dysentery treated by ol. ricini, local bleeding, and ipecac. in a large dose, with calomel at night. The pulse rises, and extensive ulceration is threatened (vide 2d day); prompt general and local bleeding, a blister, and continuation of former remedies, were then adopted, and speedily effected the cure.

(85.) Ætat. 22.—Four years in India; tall, fair, muscular; very intemperate, and always ailing from that cause. Frequent muco-sanguineous dejections, blended with bile, tormina, tenesmus, and severe abdominal pain; intense thirst. Pulse 100, hard and full. Tongue white. Skin dry and hot. Venæsectio statim ad deliquium; ℥xxxvi. drawn. Calomel gr. xij., Ipecac. gr. iij. horâ somni. Ol. ricini ℥j. mane.—2d day. Great relief; pain continues at the cæcum. Pulse 80, soft. Hirud. vj. super cæcum, et vj. circum anum, postea fotus. Con. pil. horâ somni, et ol. mane omni die.—4th day. Dejections black; pain continues. Pulse small; skin damp and cool. Hirud. xxiv. part. dol. abdominis. Con. med.—5th day. Improving. Omit. calomel. Pil. hydrarg. gr. xij., Ipecac. gr. vj. om. nocte. Con. ol.—7th day. Pain at the epigastrium. Hirud. viij. part. dol. postea fotus. Empl. canth. vespere.—11th. Omit. med.—12th day. Discharged.

*Observation.*—Dysentery, with marked congestion, cured by general and local bleeding, mercurials, ipecac., ol. ricini, and a blister.

(86.) Ætat. 23.—Ten months in India; tall, fair, muscular; of intemperate habits. Frequent muco-sanguineous dejections, blended with bile; tormina, tenesmus, and thirst. Tongue natural. Skin cool. Pulse 76, soft. Calomel gr. vj. ter die.—3d day. Came under my care.

Dejections bilio-feculent and muco sanguineous. Urine dark. Pulse 78. Tongue and skin natural. Pain over the cæcum; febrile flushes, succeeded by sweats, at ten, A.M. and three, P.M.; hirud. xv. part. dol. postea fotus. Ipecac. gr. vj., quiniæ gr. xj. ter, febre abeunte.—11th day. Discharged. *Re-admitted* eleven days afterwards; frequent muco-sanguineous dejections, tormina, tenesmus; scanty urine, restlessness, thirst. Pulse large and soft. Tongue excited. Skin natural. Ipecac. et pil. hydrarg. āā gr. viij. 4tis horis.—2d day. Borborygmi; abdomen tense; much pain. Hirud. xx. abdomini, et viij. circum anum statim, postea fotus. Calomel gr. viij., Pulv. antimon. gr. iv. horâ somni. Emplast. cantharid. abdomini vespere. Cras mane, Ol. ricini ℥ss.—3d day. Improving.—5th day. Omit. calomel. Con. pil. hydrarg. cum ipecac. ter die.—12th day. Discharged.

*Observation.*—Dysenteric symptoms were treated with repeated doses of calomel; the complaint continues, and remittent set in. Local bleeding, Ipecacuanha and quinine were employed the third day, and recovery ensued in eleven days; relapse soon occurred, but was cured by ipecac., mercurials, local bleeding, a blister, and oleum ricini.

(87.) Ætat. 32.—Seven years in India; fair, full size, muscular. Severe pain in the head, nausea, vomiting, and pain in the stomach; frequent muco-sanguineous dejections, with tormina and tenesmus, anorexia, thirst, debility. Pulse 120, small and hard. Tongue excited; skin hot; urine scanty and dark. Venæsectio ad deliquium, postea fotus. Calomel et ipecac. āā gr. x. hor. somni. Ol. ricini ℥ss. mane.—2d day. Nights sleepless; numerous muco-bilious dejections. Pain, &c. continues. Hirud. xxvi. p. d. abdom. et vj. circum anum. Ipecac. ʒss. merid. Pil. hydrarg. gr. xij. horâ somni, et ol. ricini mane.—3d day. Hirud. vj. circum anum. Calomel gr. x., Ipecac. gr. ij. horâ somni. Omit.

pil. hydrarg.—5th day. Throbbing pain in the hypogastrium. Hirud. viij. statim part. dol. postea fotus et vespere. Emplast. canth. Con. alia remedia.—6th day. Improving. Omit. calomel, et capiat pil. hydrarg. ut antea.—16th day. Discharged.

*Observation.*—Hepatic congestion, with incipient dysentery, are in this instance successfully treated by general and local bleeding, mercurials, ipecacuanha, counter-irritants, and ol. ricini.

(88.) Ætat. 25.—Five years in India; frequent muco-sanguineous dejections, with tenderness, tormina, and tenesmus. Urine scanty, debility, anorexia, and thirst. Pulse 110, small. Tongue brown; skin hot. Venæsectio ad ℥xxvi. statim. Vespere hirud. xij. abdomini, et iv. circum anum. Fotus frequenter. Ol. ricini ʒss. om. mane. —2d day. Pulse 94, not very soft. Hirud. xxx. abdomini. Ipecac. ℈j. 11a horâ. Con. ol.—3d day. Pulse 120, large, not soft. Venæsectio ad ℥xviij. statim. Calomel. et ipecac. āā ℈ss. horâ somni. Ol. ricini mane.—4th day. Better. Con. med. hor. somni.—6th. Pain in the right side. Hirud. viij. p. d. Ipecac. ʒss. 11a horâ, om. die. Con. ol.; omit. alia.—10th day. Discharged.

*Observation.—First*, General and local bleeding was adopted for dysenteric symptoms, with a small compressed pulse. *Secondly*, Repetition of local bleeding, ipecac., &c. *Thirdly*, Additional general bleeding indicated and used. *Fourthly*, Hepatic symptoms the sixth day, treated with local bleeding, &c., and speedily cured.

(89.) Ætat. 23.—Four years in India; tall, thin, fair. Bowels deranged for a month, dejections muco-sanguineous, no pain; urine natural; pulse 78, soft; tongue and skin natural. Ol. ricini ℥j. statim. Hirud. v. circum anum. Ipecac. ℈j. bis die.—3d day. Improving. Con. rem.—7th

day. Discharged. *Re-admitted* ten days afterwards, with pain at the cæcum and sigmoid flexure, frequent muco-sanguineous dejections. Pulse 100, small. Tongue with erect white fur; skin natural. Calomel gr. viij., Pulv. ipecac. gr. vj. statim, et horâ somni. Ol. ricini ℥ss. cras. —2d day. Pain in the back; abdominal pains increased. Venæsectio ad deliquium. Hirud. xx. abdomini. Con. med.—3d day. Con. med. Empl. canth. p. d.—6th day. Con. pil. horâ somni. Omit. alia.—9th day. Ipecac. et pil. hydrarg. āā gr. vj. M. bis die. Omit. alia.—11th day. Quite well. Discharged.

*Observation.* — *First*, There was intestinal irritation, treated only by palliatives and medicine. *Secondly*, After an interval of ten days, the patient returns with aggravated dysenteric, and with severe hepatic symptoms. *Thirdly*, The cure was effected by general and local bleeding, mercurials, ipecac., &c. It seems that intestinal disease often arises from the liver; the derangement or congestion of that organ being sufficient to produce muco-intestinal disease at a stage that is not adequate to present distinct hepatic symptoms.

(90.) Ætat. 21.—Ten months in India. Tormina, tenesmus, and frequent muco-sanguineous dejections. Pulse 120, hard. Tongue white; skin hot and dry. Venæsectio ad deliquium. Ol. ricini ℥j. cras mane. Calomel gr. viij. horâ somni. Fotus frequenter.—2d day. No improvement. Slight difficulty of breathing. Pulse 99, full. Hirud. xl. abdomini. Ipecac. ℈j. 11a horâ et vespere. Con. ol.; omit. calomel.—3d day. No improvement. Venæsectio statim ad deliquium.—5th day. Dejections muco-bilious. Pulse 90, bounding; severe headache. Hirud. xxx. capiti. Con. ol. ricini. Ipecac. ʒss. 11a horâ.—7th day. Pulse 114, full and hard. Pain of the head. Venæsectio ad ℥xx. statim.—11th day. Improving; yet slight pain of the head.

Pulse 84, large, and surging a little. Venæsectio ad ℥viij. Mist. salinæ ℥iss. ter die. Ol. ricini ℥ss., Tinct. opii g$^{tt}$xx. mane p. r. n.—18th. Improving. Pil. hydrarg. gr. x. omni nocte. Con. ol.; omit alia.—26th day. Quite well. Discharged.

*Observation.*—Incipient dysentery, after the first day's general bleeding changed and announced hepatic congestion by difficulty of breathing. Forty leeches and ipecac. were relied on the second day, but aggravated symptoms on the third again required general bleeding. Hepatic congestion then caused determination to the head, subdued by two additional general bleedings, the use of fifty leeches, and a continuation of the ordinary remedial treatment adapted to the case.

(91.) Ætat. 23.—One month in India. Frequent muco-sanguineous dejections for two days, tormina, tenesmus. Tongue furred; skin natural. Pulse 100, soft. Ipecac. ℈j. statim. Calomel gr. v. omni secunda horâ.—3d day. Calomel tertiis horis.—4th day. Came under my care. Tongue excited and dry; skin hot. Pulse 108, hard and full. Great tenderness, and severe abdominal pain; dejections muco-sanguineous. Hirud. xx. abdom. et v. circum anum; fotus frequenter. Ipecac. gr. v. quartis horis. Ol. ricini ℥ss. omni mane.—5th day. Repet. hirud. circum anum. Con. alia remed.—6th day. Skin hot and dry; venæsectio ad ℥xij. Con.—7th. Pulse a little hard. Repet. hirud. et con. alia remedia. Vespere, Pulse 112, large, and as if a tight thread was in it. Venæsectio ad deliquium statim.—8th day. Better. Ipecac. ℈ss. ter die. Omit. alia.—10th day. Pulse surging; dejections preceded by pain. Venæsectio ad deliquium; ℥xxiv. drawn. Calomel gr. viij., Opii gr. ss. om. nocte. Con. ipecac. mane. Ol. ricini ℥ss. p. r. n.—18th day.

Bowels regular. No complaint. Omit. med.—23d day. Discharged.

*Observation.*—Here is a dysenteric case, treated three days on the mercurial plan. Local bleeding, adopted the fourth day, produced aggravation of the symptoms. Regimen, and three general bleedings, were employed, to arrest the progress of intestinal ulceration, which otherwise must have proceeded to sphacelation. The facility, certainty, and promptitude with which recovery succeeds to prudent and sufficient depletion, are peculiarly striking throughout these cases.

(92.) Ætat. 23.—Two years in India. Middle stature, dark, muscular. Frequent muco-sanguineous dejections; tormina; tenesmus; anorexia; debility; thirst; urine scanty; eyes heavy, and injected. Hirud. xxxvj. abdomini et v. circum anum. Ol. ricini ℥j. Ol. tereb. rect. ʒj. M. statim. Calomel gr. viij. Pulv. antimon. gr. v. horâ somni. Fotus abdomini frequenter. Ipecac. ℈ij. mane.—2d day. Skin hot and dry. Pulse large and soft, 108; restlessness and sighing. Venæsectio ad deliquium. Con. med.—3d day. Pulse 88, large and firm. Hirud. xxv. abdom. et v. circum anum.—8th day. Quite well. Discharged.

*Observation.*—The incipient dysentery was actively treated the first day, with the sole exception of general bleeding, which the free local bleeding seemed likely to render unnecessary. The symptoms of the second day distinctly indicated hepatic congestion, promptly requiring general bleeding, which, with one additional topical bleeding, and the ordinary treatment, sufficed for the cure.

(93.) Ætat. 22.—Two years in India. Middle size, pale, muscular. For two days passing frequent muco-sanguineous dejections, with periodical tormina, tenesmus.

Urine scanty and dark. Appetite good. Pulse 90, full and large; tongue moist; skin natural. Hirud. viij. statim circum anum. Calomel ℈ss. horâ somni. Ipec. ʒj. mane. —2d day. Hirud. vi. circum anum. Repet. calomel et ipecac.—3d day. Improving. Repet. rem.—4th day. Severe dry cough. Pulse rather full. Venæsectio ad ℥xxxvj. Con. med.—5th day. Debility and pain in the back; mouth sore. Omit. calomel. Ipecac. ʒss. bis die.—10th day. Discharged.—Five months afterwards, *re-admitted*, with Dysentery. Hirud. viij. circum anum. Calomel gr. v. Pulv. ant. gr. iij. hor. somni.—2d day. Hirud. xij. lateri dol. Con. med.—3d day. Hirud. viij.—12th day. Pain in the left hypochon. Hirud. vj. circum anum. Con. calomel. Emplast. Canth. part. dol. cras.—19th day. Improved. Ipecac. ʒss. om. mane.—25th day. Pain occasionally in the hypogastrium. Hirud. iv. circum anum. Omit. Ipec. Capiat pil. hydrarg. et Ipec. āā gr. v. bis die.—28th day. Discharged.

*Observation.*—Here we observe dysenteric symptoms treated, during three days, with leeches, calomel, and ipecac. Hepatic symptoms then become pronounced. General bleeding and prompt recovery ensue. The discontinuance of treatment and the discharge were premature. The patient returns with dysenteric and hepatic symptoms, and the treatment is directed to both affections with success.

(94.) Frequent muco-sanguineous dejections the last six days; tormina; tenesmus; sleeplessness; debility; thirst, and loss of appetite. Tongue excited; pulse 100, soft; skin moist. Calomel ℈ss. hor. somni. Pulv. rhei ℈ij. mane. Hirud. xx. abdomini statim postea fotus.—2d day. Improving. Ipecac. ʒj. bis die.—After eight days' treatment, discharged.

*Observation.*—This subject was re-admitted, after forty-

two days, with congestive nervo-bilious fever. (Case No. 143.) The Ipecacuan treatment relieved the minor degrees of congestion; and subsequent to general and local bleeding, it is a most powerful auxiliary. With my present experience of its effects, however, I would only employ it as an auxiliary. This patient, soon returning with congestive nervo-bilious fever, is an additional proof that hepatic congestive disease is not eradicated when the first symptoms are removed; it requires the further continuance of regimen, with other means, viz. local and general bleeding, with mercurials and purgatives, to effect that object.

(95.) Ætat. 25.—Six months in India. Tall, spare, fair. Frequent muco-sanguineous dejections; tormina; tenesmus; loss of appetite, strength, and sleep. Urine dark. Calomel gr. x. horâ somni. Pulv. rhei ℈ij. mane.—2d day. Dejections green. Pulse, tongue, and skin natural. Ipecac. ʒj. bis die.—4th day. Strangury. Urine dark. Hirud. xv. abdomini. Calomel ℈j. statim. Ipecac. ʒj. mane.—5th day. Better. Hirud. xij. circum anum. Calomel gr. xv. horâ somni. Repet. ipecac. mane.—6th day. Repet. omnia. —7th day. Ptyalism. Dejections bilio-feculent; no tormina nor tenesmus Ipec. ℈j. bis die.—After eighteen days' treatment, discharged.

*Observation.*—Ptyalism generally cures dysentery. When I arrived in India twenty-five years since, the senior surgeons placed no confidence in any other remedy. General bleeding was then not only discountenanced in dysenteric cases, but even in hepatitis; and I was publicly reprimanded for having bled Lieut. Gwynne (of the 10th N. I.) at Jaulnah for an acute attack: however, my patient's recovery consoled me.

(96.) Ætat. 33.—One year in India. Middle size, muscular. Frequent muco-sanguineous dejections, tormina and

tenesmus. Pulse 104, full; skin hot; tongue foul. Hirud. xxx. abdomini. Fotus frequenter. Ol. ricini ℥ss. statim. —2d day. Abdominal pain on pressure. Tongue clean; bowels better. Calomel gr. x. et opii gr. j. horâ somni. Ol. ricini ℥ss. mane.—4th day. Improving. Slight ptyalism. Ipecac. et Pulv. antimon. ā ā gr. vj. bis die. Omit. alia.—6th day. Pain under left ribs. Emplast. Cantharid. part. dol. Con.—12th day. Discharged.—Subsequently received as chronic hepatitis. (Case No. 207.)

*Observation.*—General bleeding was improperly omitted, and the treatment was discontinued too soon; hence, as might be expected, the case returned in a stage of chronic hepatic disease. These are very important lessons, shewing the extensive evil that results from the omission of prompt and efficient practice at first.

(97.) Ætat. 19.—Six years in India. Middle stature, clear complexion. Formerly dysentery cured by ptyalism. Now frequent muco-sanguineous dejections, with abdominal periodic pains. No straining; urine dark; pulse 94, full; tongue foul; skin natural; cannot sleep. Venæsectio ad deliquium, ℥xxviij. drawn. Pulv. Ipecac. ℈j. bis die.—2d day. Pulse 90, full; pupils dilated. Venæsectio ad ℥xvj. Repet. Ipecac. omni mane. Calomel gr. xv. horâ som. omni nocte.—4th day. Pulse, tongue, and skin natural. Calomel gr. x. Om. nocte.—5th day. Bowels regular. Calomel gr. iij. omni nocte. Con. Ipecac.—9th day. Discharged.—Twenty days afterwards, *re-admitted* with the same complaint. Pulse 98, soft; tongue excited; skin natural. Calomel gr. xij. Opii gr. j. statim. Ol. ricini ℥ss. Vespere.—3d day. Ipecac. ℈j. bis die.—6th day. Discharged.

*Observation.*—When a case of dysentery is cured by mercurial ptyalism without bleeding, a subsequent attack requires bleeding more promptly and largely. The only

fault in this case is the early discontinuance of treatment, which should be avoided, as it usually ensures the return of the disease. This event occurs in the present case, and the cure is effected by calomel, ipecac. &c.

(98.) Ætat. 40.—Twenty-three years in India. Very tall, spare, muscular, dark. Frequent muco-sanguineous dejections; sleeplessness; anorexia; debility. Tongue red and furred; skin natural; urine pale. Pulse 98, irregular and soft. Venæsectio ad deliquium. Hirud. vj. circum anum. Vespere. Ipecac. ℈j. horâ somni et mane.—5th day. Discharged.—*Re-admitted*, with ephemeral bilious fever, (Case No. 19,) and subsequently with congestive nervo-bilious fever. (Case No. 142.)

*Observation.*—Hepatic congestion influenced the intestinal disease; and that condition being lessened by the general bleeding, ipecac. sufficed to restore apparent health. Similar cases, however, should receive a much longer period of treatment. The propriety of this is evinced by the tendency of hepatic disease to re-appear; and this circumstance is clearly proved by the subsequent reception reports of this patient, and by a very large proportion of the relapses recorded in these pages.

(99.) Ætat. 21. Two years in India. Tall, thin, pale. Subject to dysentery this last week. Frequent muco-sanguineous dejections, tormina and tenesmus; some appetite. Pulse 90, small and confined; tongue furred, clammy; skin cool; no pain on pressure. Venæsectio ad deliquium. ℥xxxvj. drawn. Hirud. vj. circum anum. Calomel ℈ss. hor. som. Pulv. rhei ℈ij. cras.—2d day. Sulphur et ipecac. ā ā ℈ss. bis die.—3d day. Improving. Ipecac ℥j. om. mane.—6th day. Discharged.

*Observation.*—This is a well marked case of hepatic de-

rangement and congestion, producing incipient dysentery. The prompt general bleeding promoted recovery by unloading the minute vessels, and thereby admitting the other remedies to act on them more powerfully and advantageously.

(100.) Ætat. 49.—One year in India. Middle size, thin, pale. Passing frequent muco-sanguineous dejections for eight days; cannot sleep; appetite bad; great thirst; urine dark and scanty; tormina, tenesmus. Pulse 80, soft; tongue and skin natural. Ipecac. gr. x. Calomel gr. iv. Opii gr. ss. horâ somni. omni nocte. Ol. ricini ℥ss. omni mane.—3d day. Pulse 88, surging; tormina increased. Venæsectio ad deliquium. Con. med.—12th day. Improving. Con. Ipecac. omni mane. Omit. alia.—27th day. Discharged.

*Observation.*—The pulse, at first soft, rose progressively as the intestinal disease subsided, and on the third day indicated general bleeding. Twenty-four days' additional treatment after bleeding removed the disease. General bleeding on the first day would have led to recovery much sooner. Sleeplessness and restlessness are promptly relieved by general bleeding.

(101.) Ætat. 25.—Three months in India. Middle size, muscular, fair. Ill three days. Frequent muco-sanguineous dejections, tormina and tenesmus. Pulse 78, soft; tongue clean; skin moist. Calomel gr. ij. Omni 2a. horâ. Ol. ricini ℥ss. omni mane.—2d day. Came under my care. No change. Omit. calomel. Hirud. xx. abdomini. Ipecac. gr. v. ter die. Ol. ricini ℥ss. omni mane.—3d day. Hirud. v. circum anum. Con. alia rem.—5th day. No pain.—8th day. Convalescent.—19th day. Quite well. Discharged.

*Observation.*—This was a case of slight congestion, with

considerable muco-intestinal irritation. Nevertheless, the long period of treatment announces that general bleeding would have greatly facilitated and hastened recovery.

(102.) Ætat. 22.—Nine months in India. Middle size, fair, thin. Constant pain in the left side; bowels frequently disordered. Scanty muco-bilious dejections, with tormina. Pulse 84, small and soft. Tongue furred; skin moist. Pain on pressure over the liver, spleen, and cæcum. Hirud. xxvj. part. dol. Ol. ricini ℥ss. omni mane. Con. Ipecac. bis.—7th day. Quite well. Discharged.

*Observation.*—The prompt success of Ipecac. after local bleeding, only indicates that the congestion and irritation were chiefly confined to the muco-intestinal surface. Tenderness of the liver and spleen is evidence of congestion of these viscera. In the former case, the cure from a palliative treatment may nevertheless be permanent; in the other instance, it will only be temporary.

(103.) Ætat. 21.—One year in India. Full size, fair, muscular. Had fever and dysentery. Ill two months, and twice in hospital lately with bowel complaint. Frequent muco-sanguineous dejections these three days, with tormina and tenesmus. Pulse 128, hard and full; tongue furred; skin hot. Hirud. x. circum anum. Ipecac. gr. vj. ter die. —2d day. Repet. hirud. Con. ol. ricini ℥ss. om. mane.—4th day. Headache. Ipecac. 11a. horâ. Omit. alia.—10th day. Quite well. Discharged.

*Observation.*—The pulse indicated general bleeding on admission, and the continued headache announced hepatic derangement. The apparent success of palliatives and regimen most probably was only a temporary disappearance of the symptoms, and certainly not a permanent cure.

(104.) Ætat. 33.—Seven years in India. Abdominal

pain; frequent muco-sanguineous dejections; pain in the right side; debility; anorexia; scanty urine. Pulse 104, small; tongue and skin natural. Lately in hospital with dysentery. Hirud. xxiv. p. d.; fotus frequenter. Ol. ricini ℥ss. omni mane. Ipecac. gr. vj. ter die.—2d day. Improving. Hirud. xx. p. d. et con. rem.—8th day. Discharged.

*Observation.*—Dysenteric relapses, which have been previously treated with free depletion, require local rather than general bleeding. On the contrary, relapsed cases originally cured by mercury require the lancet.

(105.) Ætat. 26. Four years in India. Middle size, muscular, fair. Subject to fever and dysentery. Frequent muco-bilious and sanguineous dejections, tormina and tenesmus. Pulse 110, hard and small; tongue furred; skin moist and cool. Ipecac. gr. vj. ter die. Hirud. vj. circum anum.—2d day. Abdominal pain increased. Hirud. xxx. p. d. Con. fotus frequenter.—5th day. Dejections natural. —8th day. Discharged.

*Observation.*—General bleeding was indicated at first, and the omission produced aggravated symptoms, and increased the danger. The second day free local bleeding, palliatives and regimen sufficed to check the disease; but it is worthy of particular remark, that relapses usually occur from cases treated in this palliative manner.

(106.) Ætat. 25.—Middle size, fair, thin. Has been drinking. Pain in the left side; difficulty of breathing; frequent muco-sanguineous dejections; restlessness; tormina, tenesmus; anorexia; debility; thirst. Pulse 120, full and hard; tongue clean; skin warm. Venæsectio ad deliquium. Pil. hydrarg. gr. 10. Ipecac. gr. ij. h. s. omni die. Ol. ricini ℥ss. pro re natâ, mane.—7th day. Quite well. Discharged.

*Observation.*—Hepatic and dysenteric symptoms were conjoined, and treated promptly and successfully by general bleeding.

(107.) Ætat. 24.—Four years in India; middle stature, dark, muscular, subject to fever and dysentery. Pain in the hepatic region, increased by breathing, frequent muco-sanguineous dejections; anorexia, thirst. Pulse 90, full and soft. Tongue white; skin cool. Urine scanty. Hirud. xviij. p. d., postea fotus. Ipecac. et calomel āā gr. vj. omni nocte.—2d day. Pain increased. Venæsectio stat. ad ℥xviij. et hirud. xxv. abdomini. Con. med.—4th day. Better.—14th day. Quite well. Discharged.

*Observation.*—Hepatic and dysenteric symptoms conjoined, were at first treated only by local bleeding, calomel, and ipecac. *Secondly*, The symptoms became aggravated. *Thirdly*, General bleeding twice, and repetition of local bleeding, with other ordinary remedies, removed the disease.

(108.) Ætat. 22.—Ten months in India; full size, dark, muscular; intemperate, yet healthy. Frequent muco-sanguineous dejections, tormina, tenesmus, abdominal tenderness and pain. Pulse 78, soft. Tongue white; skin warm; thirst, urine scanty. Hirud. xxviij. p.d., postea fotus. Ol. ricini ℥j., Tinct. opii g$^{tt}$xx. statim et mane, si opus sit.—2d day. Easier. Ipecac. ℈j. merid. et ol. cras. —5th day. Improving. Pil. hydrarg. gr. vj. omni nocte. Ol. ricini ℥ss. p. r. n. Omit. alia. —10th day. Quite well. Discharged.

*Observation.*—Incipient dysentery, cured by local bleeding, ipecac., regimen, diluents, &c.

(109.) Ætat. 22.—Two years in India; short, spare, pale; recently dysenteric, and cured by ptyalism, without

bleeding. Frequent muco-sanguineous dejections, tormina, tenesmus, thirst, scanty urine, and restlessness. Pulse 100, large and full. Tongue and skin natural. Venæsectio ad deliquium. Pulv. ipecac. comp. ℈ss. horâ somni. Ol. ricini ℥ss. mane. Fotus frequenter.—4th day. Dejections like coffee. Pulse 98, soft. Some abdominal pain. Hirud. xx. abdomini, postea fotus. Emplast. cantharid. vespere. Ipecac. et pil. hydrarg. āā gr. vj. 4tis horis. Con. ol. mane. Treatment continued.—7th day. Convalescent.—10th day. Better. Omit. med.—16th day. Discharged.

*Observation.*—Relapsed dysentery, after mercurial treatment, arrested and cured by general and local bleeding, a blister, pil. hydrarg. regimen, diluents, &c.

(110.) Ætat. 20.—Six months in India; middle size, fair, slender. Frequent muco-sanguineous dejections, slight tormina, and tenesmus. Pulse 100, soft, feeble; skin cool and moist. Tongue clean. Calomel ℈ss., Opii gr. j. statim. Ol. ricini ℥ss. cras.—2d day. Pulse 102, full; numerous dejections. Hirud. xij. circum anum. Mist. salinæ ℥ij. ter die.—3d day. Pulse 98, large; much abdominal pain and tenderness. Hirud. xl. abdomini. Ipecac. gr. viij. ter die.—4th day. Pain at times. Hirud. xij. circum anum. Emplast. cantharid. abdomini.—6th day. Convalescent.—12th. Quite well. Discharged.

*Observation.*—Incipient dysentery, with feeble pulse, and cool skin, (from irritation of the ilium) treated first with opium and calomel, from fear of cholera. The pulse rises, then local bleeding is largely used, and the cure effected by ipecac., a blister, regimen, &c.

(111.) Ætat. 20.—Two years in India; short, fair, muscular. Urgent thirst, tenesmus, slight muco-sanguineous dejections. Pulse 78, natural. Tongue furred;

skin warm. Ol. ricini ℥j. statim. Calomel gr. v. horâ somni. Rhei ℈j. cras. Fotus frequenter.—2d day. Pulse 84, small. Tongue excited; abdominal pains, and muco-sanguineous dejections. Hirud. xxvi. circum anum et perineo; et hirud. xxxvi. abdomini. Pulv. ipecac. et pil. hydrarg. gr. viij. bis die. Ol. ricini ℥ss. omni mane.—4th day. Pulse firm. Hirud. xij. circum anum. Con. alia remedia.—9th day. Con. pil. hor. somni. Omit. alia.—11th day. Convalescent. Omit. med.—13th day. Quite well. Discharged.

*Observation.*—Mild incipient dysentery, tried one day with ol. ricini, calomel, and rhubarb: it becomes aggravated, and is arrested by large local bleeding, pil. hydrarg., ipecac., ol. ricini, &c.

(112.) The subject of congestive bilious fever. (Case No. 129.) Frequent muco-sanguineous dejections, tormina, tenesmus, abdominal pain and tenderness, pain of the head, nausea, giddiness, thirst. Pulse 86, large and full. Tongue pale; skin natural. Venæsectio statim ad deliquium. Hirud. xij. abdomini, postea fotus. Calomel gr. viij., Opii gr. j. horâ somni. Ol. ricini ℥ss. cras.—3d day. Urine like decoctum cinchonæ, purulent and opaque; head better; tenderness in the hepatic region. Con. pil. et ol. —4th day. Urine quite opaque. Pulse 96, soft; bowels regular. Nitr. whey, ad libitum. Pil. hyd. gr. vj., Ipecac. gr. j. om. nocte. Ol. ricini p. r. n. Omit. alia.—10th day. Discharged. Urine having continued purulent till the ninth.

*Observation.*—Hepatic congestion and dysentery, treated by general and local bleeding, calomel, opium, and ol. ricini; the urine becomes purulent for six days, and recovery ensues.

(113.) Ætat. 25.—Tall, thin, pale. Passing frequent

muco-sanguineous dejections these three days, with tormina, and tenesmus. Pulse, tongue, and skin, natural; hirud. viij. circum anum statim. Calomel gr. xv., Opii gr. j. horā somni. Pulv. rhei ℈j. cras.—3d day. Pulse 82, large. Tongue covered by a heavy fur; skin cool; heaviness and sighing; breathing a little embarrassed. Venæsectio ad deliquium.—4th day. Better. Ipecac. ʒss. omni mane. —6th day. Discharged.

*Observation.*—This case was moderate congestion of the entero-portal vessels, announced by irritation of the intestinal mucous membrane. The local bleeding, mercurials, and purgatives, would have sufficed to remove the disease, provided that it had been confined to the mucous membrane. Those remedies soon relieved the intestinal disease, and then the symptoms of congestion of blood in the liver became pronounced. General bleeding was immediately adopted, and regimen, diluents, ipecac., &c., sufficed for the cure.

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## SECTION VI.

### ABRIDGED CASES OF CHRONIC HEPATIC DYSENTERY.

(114.) Hindoo. Ætat. 36. Admitted with bowel complaint; then ill forty days. Extreme emaciation and debility, frequent muco-sanguineous dejections, and cough. Pulse 96, small, soft, feeble. Tongue moist; skin natural; uses opium largely from habit. *Diagnosis.*—Chronic liver disease; perhaps a pulmonary complaint, and diseased intestinal mucous membrane. *Treated* with large doses of ipecacuan., alternated with hydriodate of potass, and other

less active agents. He retrograded generally; emaciation, muco-purulent expectoration, diarrhœa, and debility, increased. He came under my care after four months' treatment, and died a month afterwards.

*Dissection.*—Fluid freely effused under and over the arachnoid; congestion of the cerebral vessels; the cortical substance has a reddish tinge. The pia mater of the medulla oblongata is dark; fluid in the spinal theca. Pia mater of the cord generally is dark; the large vessels empty, and capillaries injected; the equinal nerves are blanched. The thyroid gland is enlarged and cellular, and two drachms of viscid clear fluid, like thick mucilage or honey, is removed from it.—*Thorax.* Pericardium contains a little fluid; the two ventricles of the heart are contracted, and the auricles much dilated; numerous white hard elevations on the interior of the aorta. The interior surfaces of the carotids, and subclavians, and femoral arteries, are dark. —*Abdomen.* The liver is small, and has an extensive white scar on its surface, above the gall-bladder. A thick false membrane covers this part, one line in thickness, one and a half inch long, and three-quarters of an inch in breadth. The substance of the liver is irregularly contracted, as if part of it had been lost. On the inferior surface there is an extensive firm and thick adhesion, (which cannot be detached without the scalpel,) connecting the liver to the stomach. A thick white fibrous membrane originated from this adhesion, and extends in folds one inch into the substance of the liver. This white substance is connected with the right branch of the hepatic vein. The left hepatic lobe is marked on both surfaces with patches of thickened false membranes, and from them white membranes are extended into the hepatic substance; they apparently formed the lining of abscesses; and, with one exception, they are connected with large branches of the hepatic veins. The gall-bladder is distended with straw-coloured bile. The

hepatic substance is natural. The pancreas small; spleen small, and covered with condensed false membranes. Kidneys small, and gorged with blood; the left contains a cyst equal to a filbert, filled with viscid clear fluid, like that observed in the thyroid. Mesenteric glands enlarged, and several contained irregular calcareous substances, the size of a pea; those of the meso-colon are enlarged. Mucous membrane of the stomach corrugated, flaccid, and pale; a large scar on its superior part, strongly marked by thick edges, which externally adhered to the liver, and through this an abscess from the liver had doubtless discharged its contents. Congestion observed in the mucous membrane of the duodenum and jejunum. That of the ilium pale. Honeycomb ulcers numerous; those near the cæcum are very extensive. The cæcum contracted; its mucous surface has numerous scars of previous ulcers, and now it has several extensive and irritable ulcers. Mucous membrane of the large intestines throughout has numerous ulcers; scars of ulcers, and elevated projecting tubercles, mark this surface.

*Observation.*—The obliterated cyst extended from the liver to the stomach, and intimately adhered to that viscus, which appears to be conclusive evidence of an hepatic abscess having opened into the stomach. The other obliterated cysts being attached to the hepatic veins, are evidence of abscess having been discharged into those vessels. The intestinal disease most probably arose from hepatic derangement, producing in the first instance entero-portal congestion of blood.

(115.) The subject of hepatic diarrhœa (Case No. 57). Six weeks after discharge *re-admitted;* ailing the whole interval. Frequent muco-bilious or sanguineous dejections, slight tormina, and tenesmus, restlessness, debility, anorexia, and scanty urine. Pulse 100, large, soft, and full. Tongue

covered by a slight fur; skin natural. Hirud. xij. circum anum. Ol. ricini ℥j. meridie. Con.—4th day. Dejections tarry. Con.—5th day. Zinc. sulph. gr. iij. in pil. bis die. Decoct. sem. lini ad libitum.—6th day. Urine turbid. Omit. sulph. zinc. Mist. nitro-ammon. ter die. Con. decoc. sem. lini.—8th day. Urine opaque and purulent. Con.—14th day. Urine purulent and opaque. Con.—15th day. Some pain of the arms; cramps and pains of the lower extremities gone. Urine green. Con.—16th day. Urine purulent and opaque.—21st day. Urine purulent until this day, now it is pale; health improving. Con.—22d day. Urine again purulent and opaque.—25th day. Urine purulent.—28th day. Urine turbid.—35th day. Discharged. Twelve days afterwards *re-admitted.* Frequent aqua-bilious dejections, with tormina, extremities cold, cramps, thirst. Pulse 74, large and soft. Tongue and skin natural; cramps commence in thighs, and run to the toes. Mist. acid. nitr. cum tinct. opii ℥ij. ter die.—2d day. Severe pains in the arms and thighs. Pulse, tongue, and skin, natural. Con.—3d day. Pains continue; cramps gone. Con.—5th day. Pains in the shoulders only. Pil. hydrarg. gr. vj. omni nocte. Con. flannels.—10th day. Discharged. Two months afterwards *re-admitted.* Frequent muco-sanguineous dejections, with tormina and tenesmus. Urine high-coloured. Pulse 96, small and soft. Tongue and skin natural. Ol. ricini statim et cras mane. Pil. hydrar. gr. viij., Ipecac. gr. ij. omni nocte.—10th day. Discharged.

*Observation.* — Chronic dysentery, treated by leeches around the anus, &c.; the urine became opaque and purulent, when improvement set in. This indicates that hepatic abscess existed in the first period of reception, that it remained in that gland, and intermediately produced intestinal disease. The second and third re-admission reports evince the progress of intestinal disease, influenced by chronic abscess of the liver. These reports show that a

longer period of regimen and treatment is necessary to eradicate chronic hepatic disease, than that which is generally afforded.

(116.) Ætat. 22.—Three years in India; recently in hospital three weeks with symptoms of softening of the brain. The head was shaved, and leeches used daily, which, with constant cold applications, and the internal use of purgatives and cinchona, cured the patient. Now frequent muco-sanguineous dejections, tormina, tenesmus, and restlessness. Pulse 94, soft. Tongue furred white; skin natural; appetite good. Calomel gr. vj., Antimon. tart. gr. j. horâ somni. Ol. ricini ℥ss. mane.—2d day. Pain and tenderness over the cæcum and colon. Fotus nicotianæ ad nauseam abdomini. Con. pil.—4th day. Omit. calomel. Pil. hydrarg. gr. x., Ipecac. gr. ij. omni nocte. Cataplasma abdomini. Con. ol.—8th day. The arms very sore, stiff, and painful. Omit. cataplasma. Venæsectio ad deliquium. Con. alia.—9th day. Pulse 72, compressed. Tongue tremulous. Hirud. viij. circum anum; hirud. xxv. abdomini. Omit. pil. hydrarg. Calomel gr. viij., Antimon. tart. gr. j. M. horâ somni.—11th day. Hirud. v. circum anum. Con. alia.—12th day. Hirud. ij. apud anum. Con.—13th day. Passed several black membranous pieces. Con. rem. Emplast. cantharid. super cæcum.—17th day. improving; capiat calomel alternis noctibus.—20th day. Capiat calomel gr. j. omni nocte. Con. alia.—23d day. Convalescent; no med.—26th day. Discharged. *Re-admitted* four months afterwards. Frequent muco-sanguineous dejections, tormina, and tenesmus. Pulse small and soft. Tongue white and furred. Skin natural. Hirud. xxx. abdomini. Calomel gr. viij. omni nocte. Ipecac. gr. v. omni merid. et 4ta hora. Ol. ricini ℥ss. statim et omni mane.—3d day. Improving. Urine opaque and purulent.—5th day. Urine pale. Omit. calomel; con. alia.

—6th day. Urine purulent and opaque.—7th day. Colourless, like ditchwater.—8th day. Health good. Omit. med. —10th day. Discharged.

*Observation.*—This case is very remarkable. The patient was several weeks in hospital with an obstinate headache called nervous. He came under my care, and I gave softening of the brain, as the Diagnosis, from the obstinacy and characters of the complaint. Some time after he returned with hepatic dysentery, from congestion of blood in the portal vessels, that received no benefit till after general and local bleeding. The subsequent reception and reports of purulent urine afford reason to believe that the case was hepatic throughout, and that the first period of severe headache marked the early invasion and the progress of hepatic congestion, which led to the production of hepatic abscess, that terminated happily by the passage of the pus through the hepatic veins into the circulation, from which it was excreted by the kidneys, and passed off with the urine.

(117.) Ætat. 23.—Four years in India. Full size, dark, muscular. Ill frequently with liver disease and dysentery, from constant excesses. The last three weeks passed frequent muco-sanguineous dejections; tormina, tenesmus, abdominal tenderness and pain of the umbilical region. Pulse 80, soft; tongue clean; skin natural. Ol. ricini ℥ss. statim et cras mane. Calomel gr. x. Ipecac. gr. iv. horâ somni, omni nocte. Hirud. xxviij. abdomini, postea fotus. —2d day. Pulse 108, large and full. Venæsectio ad deliquium. Con.—3d day. Pain continues. Hirud. xxx. abd. et circum anum. Con.—5th day. Emplast. canthar. super cæcum. Con.—8th day. Hirud. xij. circum anum. Con. —10th day. Emplast. canth. super colon ascend. Con.— 12th day. Omit. calomel. Pil. hydrarg. et Ipecac. ā ā gr. viij. bis die.—18th day. Pain, when turning on bed, in the hepatic region. Hirud. xij. part. dol. postea fotus. Con.—

19th day. Not better. Hirud. xvj. part. dol. postea fotus. Con.—20th day. Not better. Venæsect. ad ℥xxxiv. postea Emplast. cantharid. part. dol.—21st day. Pain continues. Pulse 130, small and compressed. Repet. Venæsectio ad deliquium.—22d day. Omit. Pil. hyd. et capiat calomel ut antea.—23d day. Emplast. Cantharid. scrob. cordis.—25th day. Omit. calomel. Sulphat. quininæ gr. v. bis die.—32d day. Convalescent. Ol. ricini ℥ss. pro re natâ.—36th day. Pain at the pit of the stomach. Emplast. Canth. part. dol. Calomel gr. x., Ant. tart. gr. j., Opii gr. ss. M. horâ somni, omni nocte. Pulv. purgans. cras.—42d day. Omit. calomel. Haust. purgans salinus pro re natâ. Infus. Cinchonæ cum Acid. muriat. pro potu communi.—55th day. discharged.

*Observation.*—Hepatic dysentery, from the softness of pulse, is treated by local bleeding only; and the system being thereby relieved, general bleeding is indicated, and employed the following day. Calomel, local depletions, and blisters are used till the eighteenth day; and then, hepatic symptoms becoming more pronounced, general and local bleeding, with blisters, are repeatedly used. The calomel and purgatives are continued; and quinine finally contributes to the cure. This, with many other cases, shews the very intimate connexion that subsists between hepatic congestion, intestinal ulcers, and febrile diseases. Moreover, it shews that the soft pulse is deceptive, and does not truly indicate that bleeding is unnecessary. A second general bleeding the day following the first would have prevented much risk and suffering in this case.

(118.) Ætat. 21.—Ten months in India. Middle stature, fair, muscular. Constantly ailing with dysentery, from intemperate habits. Frequent muco-sanguineous dejections. Pulse, tongue, and skin natural. Calomel et Ipecac. ā ā gr. x. horâ somni. Ol. ricini ℥ss. mane.—2d

day. Abdominal pain. Hirud. xij. part. dol. Con.—3d day. Pulse 80, small. Not better. Venæsectio ad deliquium statim. Hirud. xxiv. circum anum. Vespere. Con. —4th day. Pulse 88, chord-like. Hirud. xij. cir. anum. Con. med.—5th day. Dejections carneous. Urine scanty. Hirud. viij. circum anum, et xxvj. abdomini. Con. med.—6th day. Con. om. rem. ut heri.—7th day. Con. med. Hirud. xij. circum anum. Emplast. canth. abdomini, vespere.—9th day. Pulse 92, soft, with a tight line in it. Hirud. xvj. perineo. Repet. Calomel gr. viij. et Pulv. Ant. gr. v. merid. et vespere.—10th day. Dejections a little carneous. Repet. Hirud. perineo. Con. Ol. et alia rem. —12th day. Mouth tender. Omit. calomel, &c. meridie. Con. alia.—16th day. Dejections bilio-feculent; sleeps; ptyalism. Omit. calomel. Pil. hydrarg. gr. xij. horâ somni. Ol. ricini pro re natâ.—23d day. Uneasy weight and oppression at the pit of the stomach. Emplast. cantharid. part. dol.—29th day. Pulse, tongue, and skin natural; bowels regular; urine pale. Ipecac. ℈j. om. mane, sine bibendo. Omit. alia.—46th day. Discharged.

*Observation.*—Dysentery treated by ipecac., calomel, ol. ricini, and local bleeding, retrogrades.—3d day. General and local bleeding employed freely, and leeches applied every day till the sixteenth, when the intestinal disease ceased. Hepatic symptoms afterwards are prominent; and blisters, regimen, and alteratives effect the cure in forty-six days. A chord-like pulse demands general bleeding; and the early use of it would have saved pain, risk, and time in this case.

(119.) Ætat. 32.—Had fever and headache, with pain of the side, succeeded by dysentery, six weeks since. Short dry cough from that time. Hepatic enlargement, and tenderness on pressure. Palms and soles cold and clammy. Reposes easiest on the back; feels it painful to be on the right

side. Frequent muco-sanguineous dejections; restlessness; tormina, and tenesmus. Pulse 92, soft; tongue pale; skin natural. Hirud. iv. circum anum, alternis diebus. Pil. hydrarg. gr. vj. et Ipecac. gr. ij. bis die jejuno ventriculo. Inseritr. setaceum. Ol. ricini ℥ss. om. mane. Emplast. Cantharid. region. epigastr.—4th day. Pulse 108, quick, small, and hard. Venæsectio ad ℥xij. Hirud. x. circum anum. Calomel gr. viij. statim. Con.—5th day. Pain of the side. Hirud. x. part. dol. Con.—6th day. Urine opaque, with copious dark deposit.—8th day. Great fulness of the epigastrium. Bowels better. Repet. hirud. x. circum anum.—10th day. Urine turbid. Con.—11th day. Hæmorrhoids distressing. Repet. hirud. Con. alia rem. 12th day. Mouth tender; complaints abating. Pulv. rhei et Mag. albæ ā ā ʒss. M. pro re natâ. Con. rem. Progressive improvement took place.—30th day. Discharged.

*Observation.*—In this case, hepatic abscess existed at the period of reception, and the disease was removed by the absorption of pus into the circulation, its excretion by the kidneys, and discharge with the urine.

(120.) Ætat. 25.—Tall, dark, muscular. Six weeks ill with dysentery; treated by general bleeding, blisters, calomel and antimonial powder, castor oil and opium. He improved from ptyalism; but the bowels continue loose. *Re-admitted* ten days after his discharge. Dejections at times sanguineous. Pulse 82, soft. Tongue and skin natural. Hirud. vj. circum anum. Pil. hyd. gr. x. Ipecac. gr. ij. om. nocte. Ol. ricini ℥ss. mane.—2d day. Con. Pil. et hirud. iij. omni die.—5th day. Improving. Con. rem. —15th day. Discharged.

*Observation.*—The cure of chronic disease depends greatly on the regimen, and auxiliary measures; such as clothing, diet, diluent drink, repose, exercise, fomentations, lavements, and suppositories, which were duly attended to,

but their record was omitted to avoid unnecessary repetition.

(121.) Ætat. 24.—Six years in India. Twelve months ill. Tall, fair, slender. Frequent muco-bilious, and bilio-sanguineous dejections; anorexia; sleeplessness; cramps of the inferior extremities; pain at the epigastrium; debility. Pulse 90, firm, contracted; tongue clean; skin dry. Hirud. iv. circum anum. Ipecac. ℈j. bis die.—2d day. Hirud. ij. circum anum. Con.—3d day. Pulse soft, 80. Hirud. j. apud anum. Con. med.—4th day. Hirud. ij. omni die. Con.—6th day. Hirud. iij. circum anum. Con.—8th day. Hirud. j. omni die et Con. Ipecac.—12th day. Discharged.

*Observation.*—Chronic intestinal ulcers cured by the continued daily use of leeches around the anus, and large doses of Ipecacuanha.

(122.) Ætat. 28.—Short, pale, slender. Ill six months, with bowel complaint. Frequent muco-sanguineous and bilio-feculent scanty dejections; no appetite; tormina, and tenesmus. Urine scanty, dark. Pulse 96, soft; tongue pale; skin natural. Hirud. ij. circum anum, omni die 10a. horâ. Ipecac. ʒj. multo mane omni die.—4th day. Slight ptyalism from Ipecac. Improving. Con.—34th day. Discharged.

*Observation.*—Chronic intestinal ulcers cured by the daily use of leeches around the anus, and large doses of Ipecacuanha, which produced ptyalism.

## SECTION VI.

### ABRIDGED CASES OF CONGESTION OF BLOOD IN THE LIVER.

(123.) *Congestion of blood in the liver and entero-portal system, with a preternatural flow of bile.*—Ætat. 25.—Five years in India. Middle stature, dark, slender. Unhealthy from excesses. Cutting and lancinating pain through the belly and stomach. Vomiting aqua-bilious fluid; severe headache and heaviness of body and limbs; bleeding from the nose. Pulse 102, hard and small. Tongue foul; skin cool; bowels irritable and open; urine scanty. Venæsectio statim ad deliquium. Ol. ricini ℥ss. horâ somni. Haust. purg. mane.—2d day. Sleeplessness; pain of the back, loins, and belly; yet easier than yesterday. Pulse 90, softer. Hirud. xxiv. part. dol. et postea fotus.—3d day. Easiest on the back; heavy pain in the hepatic region of both sides. Hirud. xxvj. part. dol. utriusque lateris, postea fotus. Calomel gr. iij. Ipecac. gr. ij. M. omni nocte. Ol. ricini mane et pro re natâ.—9th day. Discharged.

*Observation.*—The abdominal congestion having effected a determination to the head, some capillaries of the schneiderian membrane gave way, relieved that state, and averted congestive fever. General and local bleeding, with purgatives, having tranquillized the vascular system, the hepatic symptoms became distinctly pronounced, and were removed by free local bleedings, mercurials, &c.

(124.) *Congestion of blood in the liver, with increased secretion of bile.*—Ætat. 24.—Two months in India. Middle stature, fair, slender. Constantly ailing, from excesses. Pain in the hypochondriac region, lancinating upward and downward; frequent, green, aqua-bilious dejections, without

tormina, or tenesmus. Pulse 92, soft. Skin cool. Tongue excited. Hirud. xxiv. statim p. d. postea fotus. Calomel gr. v., Ipecac. gr. ij. statim.—2d day. Pain in the hypochondriac region. Repet. hirud. xxiv. et fotus. Ol. ricini ℥ss. statim et pro re natâ.—3d day. Retrograded. Pain, thirst, and cramps in the lower extremities severe. Pulse 102, large, and fills the vessel during the interval between the systoles. Tongue excited; skin warm. Venæsectio ad deliquium. Postea emplast. canthar. p. d. Mist. salinæ ℥iss. ter die. Ipecac. ϑss. hor. som.—4th day. Better. —5th day. Severe headache and thirst. Pulse 120, full and soft. Constant pain round the umbilicus. Hirud. xxviij. abdomini. Ol. ricini statim.—7th day. Tongue dark. Pulse 98, large; skin moist; abdominal pressure gives pain at the anus. Hirud. x. circum anum et perineo. Pil. hydrarg. gr. vj. vespere. Con.—8th day. Improving. Con.—12th day. Convalescent. Omit. med.—18th day. Discharged.

*Observation.*—Hepatic congestion and intestinal irritation, with a tranquil pulse, treated by repeated free local bleeding, &c.; the case retrogrades, intestinal and hepatic symptoms become severe, and the pulse threatens extensive intestinal ulceration; free general and local bleeding, &c., effect recovery.

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## SECTION VII.

### ABRIDGED CASES OF CONGESTIVE BILIOUS FEVER.

(125.) Ætat. 28.—Twelve years in India; short, dark, and muscular. Had an acute bilious attack four months since, for which general bleeding was used twice with purgatives, but he refused confinement and regular treatment.

The general health declined from that period, and he suffered anorexia, restless nights, febrile flushes. Hands hot and dry. Pains of the shoulders, head, back, and limbs, accompanied with smart fever at times. Now he feels cold, but the surface is hot and dry. Tongue furred, white. Pulse 128, large, full, hard; and the current continuous. Severe pains in every part, but especially in the head, left shoulder, and right side. Venæsectio statim ad deliquium; ℥xlviij. drawn. Vespere, fulness and heaviness of the head, and in the belly, aggravated by deadly pain in the hepatic region and right side. Hirud. xij. around the base of the head; hirud. xvi. lateri dextro; hirud. xij. circum anum. Ol. ricini ℥j. statim et mane. Calomel ℈ss. horâ somni.—2d day. Medicines operated; dull heavy pain of the head, back, and side. Urine scanty. Pulse 120, round, full, and a little hard. Tongue furred, with tendency to dryness. Skin hot. Hirud. xxxvi. lateri dextro et circum anum. Repet. calomel horâ som.—3d day. Fainted several times from the leeches. Urine scanty and red; had a little sleep; much thirst. Pulse 118, large and soft. Tongue less furred. Skin warm and dry. Pain of the head gone, of the side less. Con. calomel horâ somni, et ol. ricini mane. Muriat. ammon. gr. xij., Nitrat. potass. ℈j., Aquæ ℥ij. M. ter die.—4th day. Dejections bilious; urine scanty and turbid. Pulse 88, large and soft; skin warm; tongue furred, moist; pain occasionally about the head and spine. Con. rem.—5th day. Slept some; dejections bilio-feculent; urine scanty, and deposits crystals of pink white on the surface. No thirst. Pulse 90, soft. Tongue slightly furred; skin warm. Con. rem.—6th day. No change. Con.—7th day. Dull heavy headache; hirud. xij. capiti. Con. rem.—8th day. Urine scanty, dark, and turbid, with a copious dark deposit. Confusion of ideas, heaviness of the head. Pulse 120, small, feeble. Tongue moist, white; extremities cold. Hirud. xij. temporibus. Emplast. canth.

mag. later. dex.—9th day. Urine copious, like decoct. cinchonæ, and opaque; with an excessively copious purulent deposit. Pulse 98, large and soft. Tongue moist. Skin natural; slept.—10th day. Urine and other symptoms as yesterday. Sent to sea. He went to Europe, and suffered much from ill health for two years, which he occupied in changes of scene, with the hope of regaining health; but he ultimately died.

*Observation.*—The history marks this as an hepatic case, conjoined with, and aggravated by, remittent fever. The hepatic disease became established during the early attack, in which regular treatment was declined by the patient. The frequent local bleedings prevented the accession of engorgement, which, if once established, must have terminated in effusion and death. Moreover, the hepatic congestion being relieved, pus was absorbed from an abscess of the liver into the blood, separated by the kidneys, and passed off with the urine. The carbon. potass., neutralised with dilute sulph. acid, promoted the passage of pus by the kidneys.

(126.) Ætat. 24.—Large stature, fair, muscular, and plethoric, in the fifth month of gestation; acquired fever on descending from a residence on lofty hills. Headache, sickness at the stomach, pain at the back and limbs, continued for two days, and considered as attendants on pregnancy. Said to have been bled twice to the extent of ℥xvi., and took ℈j. of calomel last night, and ℥j. of castor oil this morning; dejections bilio-feculent; patient much oppressed. Pulse 120, full and bounding; skin hot and dry; tongue in centre furred, red at the edges; stomach irritable; occasional vomiting and tenderness on abdominal pressure. Restlessness, pain in the back and head. Venæsectio ad ℥xlviij. deliquium prevented by volatile alkali and the recumbent position. Pulse lowered. Skin became cold, and perspi-

ration flowed; retching troublesome. Calomel gr. xx., Pulv. jacobi gr. v. horâ somni. Ol. ricini mane.—2d day. Calomel not given till twelve o'clock, P.M., in consequence of uterine irritation, constant retchings. Empl. cantharid. regioni epigastricæ, vespere. Retching continued all day, for which laudanum has been given. Calomel et extract. col. comp. āā gr. iv. horâ somni.—3d day. Restlessness and retching continued. One ounce of ol. ricini given; delirium; skin dry; tongue excited. Pulse 125, small and quick. Calomel ℈j. horâ somni. Enema si opus fuerit. Cold applications to the forehead, and a blister to the posterior part of the head and nape of the neck.—4th day. The head was not shaved. Calomel was given; not better; one yellow dejection. Pulse 120, large and soft; tongue furred, clammy; skin hot and dry, but frequently quite cold; no sleep. Took ℥j. of ol. ricini, eight, P.M. Calomel gr. x. statim, to be continued every third hour.—5th day. Worse. Tongue dark in the centre, scarlet at the edges. Skin of the head and trunk burning, extremities quite cold; countenance flushed. Pulse 133, quite soft. A blister applied last night to the nape of the neck, and now very sore; mouth dry. Bowels opened three or four times; took the calomel every third hour. Several changes in the night; at one time violently hot, and at another cold; composed towards morning, and desired beer and beef steaks; the beer was given, and agreed with her. Con. calomel et infrict. ung. hydrarg. fort. ʒj. sextis horis.—6th day. Aborted in the night; collapse succeeded, followed by re-action; slept a little afterwards. Pulse 130, small and weak, irregular. Tongue clammy; a dark brown, and dry at the point; no ptyalism; extremities rather cold; respiration and pulsation became progressively slower, and death took place at noon on the sixth day of treatment.

*Observation.*—I record this history, presented to me by a respectable, but inexperienced young colleague, that as-

sisted in the treatment, and took notes of the case. It is unnecessary to offer any comment on it. The details of treatment peculiarly successful are the most useful; and next, those respecting measures which had induced a fatal issue; the former teaching us the path to be pursued, and the latter that which should be avoided. When violent medicinal agents are used in rapid succession, their effects soon predominate over the symptoms of the disease, and obscure the diagnosis. The results might have been anticipated from the treatment prescribed on the first day.

(127.) A healthy young female, who recently resided on a hill, was attacked with fever on descending to the plain; took purgative medicine, and next morning was seized with giddiness, headache, febrile flushes, pains in the bones, and prostration of strength. Bowels loose; palms and soles burning and dry. Pulse 120, full and bounding. Tongue furred and excited, marked by the teeth. Venæsectio ad ℥xxxvi.; fainted three times. Calomel gr. x., Pulv. jacobi gr. v. horâ somni; ol. ricini mane. —2d day. Skin cool; pulse feeble and small, 120; slight headache; dejections bilio-feculent. Calomel gr. iij., Pulv. antimon. gr. iij. tertiis horis. Two, P.M., violent fever; pulse, hard, full, and firm. Venæsectio ad ℥lxiv.—3d day. Violent heat this morning, relieved by cold applications; pain of the head; bowels open. Tongue less clammy. Skin hot and dry. Pulse 118, soft. Shave the head. Emplast. cantharid. inter scapulas. Con. calomel et pulv. antimon. cum ol. ricini mane. Hirud. xxij. capiti. Vespere, low delirium; irritability of the stomach, and vomiting; skin burning in some parts, marble cold in others. Pulse 120, feeble. Tongue dark. Opii gr. ¼ cum sing. dos. calomel. et antim. Quiniæ gr. iv. sextis horis, febre abeunte.—4th day. No ptyalism; pain and burning of the back and in the stomach; head less hot. Pulse 120.

Tongue dark; skin hot. Calomel ℈j., Opii gr. ss. tertiis horis. There has not been any violent accession of heat since the head was shaved; bowels freely opened by the medicine and oil. In consultation it is decided to continue the calomel, and to use mercurial fumigations, to affect the system as soon as possible. Subjected the patient to the fumes of the grey oxyde, and afterwards to those of the nitric oxyde, without effect; the last dose of calomel created very painful uneasiness, described as a ball of fire in the stomach. The last three doses have been rejected; burning heat of the thoracic surface comes on at irregular intervals; very weak; another fumigation employed, without effect. Omit. om. med. Calomel gr. iij., Camph. gr. ij., Opii gr. ¼, omni tertiâ horâ. Quiniæ sulph. gr. xij. in vin. rub. ℥vj. in noctem.—5th day. One dark evacuation; surface nearly natural. Pulse 116, very feeble. Tongue dark brown, like coffee. Quinine rejected; calomel taken. Mouth sore; no ptyalism; pain in the chest; mind clear. Con. appl. frig. si opus fuerit. Jelly and a little wine. Quininæ gr. iv. 12a horâ. Vespere, again fumigated with grey oxyde; skin hotter. Pulse 107, very weak. Tongue quite dark; soreness of the mouth and throat; no ptyalism; very weak and faint. Con. calomel, &c. Quiniæ sulph. gr. xij. in noctem.—6th day. Severe return of heat last night; spits a little. Pulse 120, feeble. Tongue a little cleaner and moist; skin hot and parched in some parts, in others cold. Has taken the pills, quinine, and oil. Bowels open. Fumigated in the evening, and gave an enema.—7th day. Slept a little; took medicine; mouth rather sore. Tongue better; feels cooler, but weak; asks for food. Pulse 108, stronger. Omit. camphor et opium. Con. calomel, cum extr. hyoscyam. gr. j.—8th day. Was fumigated last evening; very weak. Tongue nearly natural, moist; saliva flows; dejections bilio-feculent; pulse 92, soft; skin cool; some appetite. Broth, jelly, and a little

wine. Con. med.—9th day. Slept; bowels open; only complains of sore mouth. Pulse 90, soft; tongue presents the mercurial fur; skin cool. Omit. med.; ol. ricini pro re natâ. From this period convalescence proceeded; but the individual continued delicate for a considerable period.

*Observation.*—This case was presented to me by a respectable young colleague, who attended, and took notes of the practice, which was controlled by another surgeon. They state exact facts, and therefore they are worthy of record and notice. The symptoms detailed subsequent to the second day are obscured by the effects of treatment. The notes and treatment indicate that the medical attendants conceived ptyalism very desirable, or rather necessary to ensure safety; and they used great efforts to effect that object. This course proceeded from a panic, which the fatal character of hill fever had impressed on the public mind, including many of the profession. Hill fever was considered the death-blow; and when an individual recovered, the public and some of the profession declared the complaint was not hill fever; because that disease admitted of no remedy. Under the influence of such feelings, when the light of experience is less brilliant and steady, we observe that anxiety and agitation predominate even with members of the profession. The treatment is then greatly influenced by our fears; and who has not thus erred at times? This case, and the preceding, certainly are distinct illustrations of this remark; and a great number of my cases show that I also have erred frequently under the same influence.

(128.) Ætat. 25.—Dark, full size, muscular. Three years in India. Seized last night with rigors and chills, succeeded by flushes and cold sweat. Bowels regular. Pulse 118, large and soft. Tongue clean, moist, and tremulous; skin profusely perspiring; prostration of strength; lowness of spirits; anorexia; thirst; urine scanty.—Vespere. Pulse op-

pressed and contracted, the current flowing in a continuous manner, 120. Venæsectio ad deliquium. Emplast. canth. inter scapulas. Calomel ℈ss. horâ somni. Haust. emetic. mane.—2d day. Medicines operated.—3d day. Flushes of fever. Pulse 104, irregular, and soft; tongue and skin natural; no thirst. Ol. ricini ℥j., Ol. terebinth. rect. ℥ss. M. statim, et con. calomel hor. somni.—4th day. Improving. Omit. calomel gr. v. Con. alia.—5th day. Improving. Con. sulph. quiniæ gr. iv. merid. et 4ta horâ, P. M.—6th, 7th, and 8th days. Improving. Omit. quinina et calomel.—9th day. No sleep; pain of the head, along the coronal suture; no sleep; heat over the stomach; fulness; embarrassed breathing; sighing; no appetite; thirst. Pulse 120, small and compressed. Tongue shows the mercurial fur, and moist; gums tender; skin natural; pain at the epigastrium; lancinating to the right side and the back, at other times dull and heavy. Shave the head. Hirud. xxx. supra sutur. coronal. et xx. lateri dextro. Emplast. cantharid. scrob. cord. Vespere, calomel et pulv. antimon. āā gr. v. omni nocte. Ol. ricini ℥j. pro re natâ. —12th day. Pulse 104, bounding, a little soft. Tongue furred; skin and palms rather hot; dull pain on turning, or making a full inspiration, under the ribs on the right, which pressure renders acute. Con. rem. Emplast. canthar. part. dol. Con. rem.—14th day. Violent flushes, allayed by cold applications. Pil. hydrarg. gr. xij. tart. emet. gr. ss. M. omni nocte; et omit. cal.; con. alia.—17th day. Slight ptyalism; shooting pains in the right shoulder and side. Con. med. Emplast. cantharid. lateri dextro. —21st day. Only weakness, no fever, pain, or uneasiness. Pulse 88, soft; tongue and skin natural.—28th day. Recovered.—Seventeen days afterwards, severe pain of the right shoulder, with dry cough; pressure over the liver not painful. Tongue red and furred. Pulse small and soft. Skin moist and cool. Pressure relieves pain of the shoul-

der. Urine scanty and dark. Ipecac. ℈j. omni mane. Misturæ nitro-ammon. ℥ij. bis die. Ol. ricini ℥ss. p. r. n. —Twenty days' treatment. Recovered.

*Observation.*—Hepatic symptoms were predominant, and purulent urine continued throughout the latter period of treatment. The rigors and chills disturbed the circulation the first day; treatment therefore was deferred till evening; the pulse then indicated very dangerous congestion in the abdomen; general bleeding, to remove that state, a blister, to relieve the head and equalize the circulation, and calomel, to stimulate the liver, were used. The calomel was mostly continued with purgatives, low regimen, and emollients, and on the fifth day quinine, to promote convalescence. Ninth day, cerebral and hepatic congestion were well pronounced; the quinine was discontinued, leeches were applied to the head and side, a blister to the epigastrium, and calomel with pulv. ant. given at bed-time, to stimulate the hepatic secretion, and open the skin. From the ninth till the thirteenth day inclusive, general bleeding was indicated every day, and its omission was decidedly injurious. Moreover, a second general bleeding in the commencement would have been extremely beneficial. Twenty-eighth day, recovery. Readmitted seventeen days afterwards, and during twenty days' treatment of hepatic symptoms, the patient passed purulent urine. The prominent points for remark are: *First*, That after the general bleeding, leeches should have been applied over the abdomen, the hepatic region, and around the anus, the quinine omitted, and a second general bleeding practised. *Secondly*, Had that course been adopted, either hepatic abscess would not have formed, or if it existed previously, the urine might have become purulent sooner, and there would not have been a second admission. *Thirdly*, It is doubtful at what period the hepatic abscess formed, most probably in the commencement of the history,

when the rigors and chills took place; hence, that was the most important time for general bleeding. *Fourthly*, This case ran the ordinary course of congestive and bilious fever. No inflammation of the ileum occurred, but the hepatic abscess obscured the early history.

(129.) Ætat. 22.—Twelve months in India. Middle stature, fair, muscular. Headache; nausea and costiveness; fulness at the pit of the stomach; skin alternately hot and cold; tongue foul; anorexia; sleeps; urine scanty. Pulse 110, small and soft. Haust. Emet. statim. Ol. ricini mane. —2d day. Purged; no sleep; pain of the belly; bilious vomiting and dejections; prostration of strength; pain of the head. Pulse 90, soft, sluggish, irregular, and unequal. Tongue posteriorly foul; skin cool and moist; pains in the limbs, and giddiness. Venæsectio ad deliquium, emplast. canth. inter scap., calomel ℈ss. Pulv. antimon. gr. vj. horâ somni. Pulv. jalapæ comp. ʒj. cras.—3d day. Better. Pulse 96, soft, small, regular. Tongue moist, furred in parts; skin natural; no pain. Mist. nitro ammon. ℥ij. ter. —Ten months afterwards, *re-admitted*, with hepatic dysentery. (Case No. 112.)

*Observation.*—This case was hepatic congestion, with tendency to cerebral congestion. It occurred in this instance, and it is common in the stage of invasion, that the pulse sinks; but it soon changes and indicates venesection, which here led to prompt recovery. The connexion of this form of disease with hepatic affections is worthy of attention.

(130.) Ætat. 24.—Thirteen months in India. Middle stature, dark, muscular. Admitted with pain of the head, back, and legs; flushes succeeded by cold since his recent discharge, after suffering a bowel complaint. Pulse 92, full and hard; tongue white and excited; skin hot; urine

scanty; bowels open. Venæsectio ad ℥xxiv. Calomel et Pulv. Jacobi āā gr. v. horâ somni. Mist. purg. mane.—2d day. Head easier since bleeding; face flushed; tongue tremulous. Pulse 98, firm. Severe pain of the back continues; skin hot. Forty leeches along the spine; shave the head.—3d day. Had cold sweats, and some delirium. Pulse 124, small and soft. Tongue pale; skin cool; bowels freely open. Empl. Canth. inter scapulas. Mist. Salinæ ℥ij. ter die. Sulph. quininæ gr. viij. febre abeunte. Pulv. purgans p. r. n.—21st day. Discharged.

*Observation.*—The connexion that subsists between the varied forms of hepatic disease, and the certainty with which they are exchanged, one for another, is a truth of practical importance exemplified in this history. An hepatic bowel complaint yielded to treatment; continued intemperance soon produced congestion of the liver, and gastro-intestinal mucous surface. The ultimate success exceeded the indications of the third day, which partly announced the formation of hepatic abscess: abscesses are frequently formed in the liver, and pass away without suspicion of their occurrence. The early bleeding was mainly useful in promoting the cure; but its omission, the second day, was serious and nearly fatal.

(131.) Ætat. 22.—Four years in India. Middle stature, fair. Had fever these four days. Uneasiness at the stomach; pain of the head; costiveness; anorexia; flushes and sweats. Tongue furred. Pulse 90. Mercurial and antimonial purgatives, succeeded by quinine and Pil. hydrarg. with Ipecac.—After fourteen days' treatment, discharged.—The following day, *re-admitted*, with general pain; hot skin; quick pulse; thirst; soreness and fulness at the pit of the stomach. Emetics and purgatives were used, and he came under my care the third day. Pulse 106, small and soft; tongue heavily furred; hæmorrhoids; skin alternately hot

and cold; delirium. Shave the head; and apply vinegar and water all over it when hot. Hirud. vj. circum anum. Calomel gr. x. at bed-time. Pulv. Jalapæ comp. ℈iv. mane. —4th day. Stinging heat; pupils dilated; coma. Hirud. xxxvj. along the spine.—5th day. Fainted twice from the leeches; much relieved. Urine dark. Emplast. Cantharid. inter scap. Treated with quinine; occasional purgatives, leeches, and red wine, during convalescence, and discharged, quite well, on the thirty-sixth day.

*Observation.*—The first history is that of bilious fever, with hepatic congestion. The second attack soon became serious, owing to the omission of general bleeding, and to the consequent transfer of congestion from the liver to the head, threatening cerebral effusion. This event was checked by cold applications and leeches around the anus, the free use of leeches down the spine, and a blister between the shoulders. Coma being relieved, neutral salines, antimonials, occasional purgatives, the application of cold to the head, and leeches around the anus, prepared the patient for quinine and red wine. In all cases where there is a tendency to cerebral congestion, the head should be shaved without delay, to admit the application of leeches, cold lotions, &c., with promptness and advantage.

(132.) Ætat. 30.—Five years in India. Middle stature, muscular, fair. Admitted with gonorrhœa.—After thirty-five days' treatment, discharged.—*Re-admitted* ninety-nine days afterwards. Feverishness, and sometimes ague. The last nine days, severe headache; pains of the back and limbs. Pulse 120, soft; tongue excited; skin dry and hot. Bowels open; urine scanty. Vespere, pulse 100, small and compressed. Venæsectio ad deliquium. Hirud. xxvj. part. inferiori thoracis. Calomel et Pulv. Antimon. ā ā gr. vj. horâ somni. Ol. ricini ℥j. cras et pro re natâ.—2d day. Pulse 92, soft and dilated; no sleep; pain of the head, and diffi-

culty of breathing. Empl. Cantharid. regio. epigast. A cool wet skin, and collapse of countenance, similar to that of cholera. Flannel clothing. Vin. Alb. ℥vj. Pulv. cinchonæ ℥j. in mel bis die.—4th day. Tendency to collapse. Con. rem. Emplast. Cantharid. inter scapulas.—6th day. Skin natural. Pulse 86, rather strong, with free action. Hirud. vj. circum anum.—8th. day. Better. Omit. cinchona.—13th day. Discharged.

*Observation*[1].—Hepatic congestion and functional derangement, with abdominal congestion, were indicated by the early symptoms. After depletion and the blister, when collapse set in, the case being blended with intermittent, suggested the large doses of Pulv. cinchonæ, which were successful (as I think) by mechanically stimulating the vessels and follicles on the mucous surface of the ilium that were in an injected state.

(133.) Ætat. 22.—Four years in India. Subject to fever. Middle size, spare, pale. Four days since had rigors, succeeded by fever. Now severe pain of the head; nausea and vomiting. Pulse 106, large and full; bowels loose; tongue moist. Ipecac. ℈j. statim. Calomel gr. vj. horâ somni. Haust. purg. cras.—2d day. Hot fit from nine till eleven, P. M. Pulse 94, large and soft; severe headache. Hirud. xvj. capiti et vj. circum anum. Repet. pil. horâ som. et haust. purgans. mane.—3d day. Restlessness. Pulse 102, large and soft. Venæsectio ad deliquium, febre ineunte. Mist. Salinæ ℥iss. 2is. horis.—4th day. Febrile heat, coming on at eleven. Bled to deliquium, and fever disappeared.—5th day. Severe pain of the head continues. Venæsectio ad deliquium, postea quininæ gr. iij.

[1] Individuals remaining several days in hospital, with slight complaints, soon after recovery frequently return with some serious form of disease. The recumbent posture, prescribed alike for all, is injudicious. The bedridden only should have cots in the day.

4is. horis febre abeunte.—6th day. Pain across the forehead. Pulse 76, large and undulating. Hirud. xxvj. fronti. Con. med.—20th day. Discharged.

*Observation.*—This case shews the fever subsiding and disappearing after the free use of general bleeding. It shews also the tendency of this disease to cerebral congestion, and that after free depletion, quinine may be advantageously used.

(134.) Ætat. 23.—Four years in India. Tall, thin, fair. Subject to dysentery and fever. Four days vomiting, and had flushes of heat, succeeded by chills. Cramps of the inferior extremities; thirst; loss of appetite; restless and sleepless. Pulse 122, irregular, large, and bounding. Tongue moist, yellow, with heavy fur. Skin natural; dejections bilio-feculent; no pain. Shave the head. Venæsectio ad deliquium. Mist. Salinæ ℥ss. tertiis horis. Calomel ℈ss. Pulv. Antimon. gr. v. horâ somni. Pulv. Jalap. C. ℈ij. cras; fotus abdomini frequenter. Flannels.—2d day. Rather easier. Hirud. xij. super suturas capitis, et lotio frigida p. r. n.—3d day. Copious dejections; urine like decoctum cinch. A little fever at times; now none. Con. Hirud. viij. circum anum. xviij. scrob. cord. et xij. supra suturas.—4th day. Pulse 114, good; tongue cleaning; skin cool. Improving. Quininæ gr. iij. 2is. horis febre abeunte. Con. Mist. Salina 2is. horis, febre ineunte. —18th day. Recovered.

*Observation.*—The congestive tendency of this case was very marked; and the prompt arrest of its progress seems due—1st. To the general bleeding.—2dly. To shaving the head.—3dly. To the local bleeding.—4thly. To evacuants. —5thly. To the use of quinine.

(135.) Ætat. 24.—Two years in India. Tall, dark, muscular. Subject to dysentery and fever. Pains in the legs,

thighs, and hips; eyes injected and dull; bowels regular; sleeps. Pulse 84; the current continuous, large, and firm. Tongue red; skin dry, hard, and hot. Fever these three days. Venæsectio ad deliquium. Statim. Calomel gr. vj. Pulv. Ant. gr. v. hor. somni. Haust. emetic. cras mane.—2d day. Sleepless. Vomited and purged. Pain of the head, and heaviness. Pulse 80, round and firm. Tongue much furred, white; skin natural. Less pain of the inferior extremities. Venæsectio stat. ad deliquium. Shave the head. Empl. Canth. inter scapulas. repet. pil. horâ somni. Pulv. Jalapæ Comp. ℈ij. cras mane.—3d day. Eyes dull and injected. Pulse 88, large and soft. Tongue livid and clammy; skin dry, not hot. Hirud. xx. capiti super suturas, et lotio frigid. p. r. n. Ipecac. ℈ij. cras mane. Repet. pil. horâ somni.—12th day. Discharged.

*Observation.*—The prompt general and local bleedings, evacuants, blisters, and shaving the head, were the principal and successful agents employed in this case.

(136.) Ætat. 18.—Indo-Briton. Small stature, dark, often ailing with rheumatic and thoracic pains. Fever yesterday and severe headache; countenance dejected; thirst. Pulse 90, soft; tongue clean; skin warm; anorexia; bowels costive; urine scanty. Purgatives, calomel, antimonials, and neutral salines used for three days. No improvement. Pulse 110. Pains and febrile heat continue, with some cerebral engorgement. One general bleeding, and continuation of the purgatives, neutral salines, &c. for nine subsequent days. Discharged.

*Observation.*—The fugitive and thoracic pains marked the hepatic congestion; and, accordingly, the treatment shews that the ordinary means were unavailing, until the mass of blood was lessened by venesection, and from that period the remedies produced their ordinary effects. Hence recovery advanced daily.

(137.) Seized with remitting fever. Pulse not hard, 120. Tongue furred; skin very hot and dry; great prostration of strength; no appetite; general heaviness, and lassitude with pains; urgent thirst; urine scanty and dark; bowels very slow. The treatment consisted of mercurials, with antimonials, and occasionally other purgatives. No bleeding, and the disease became aggravated. Skin yellow and burning; pulse fleeting; tongue furred and often dry, livid; eyes suffused, and low delirium. The superintending surgeon (Dr. Boswell) saw the case with me, and finding that the ordinary doses only of purgatives had been given, he desired that three times the usual quantity should be employed at each time, owing to the then preternatural state of the gastro-intestinal tube. That course was adopted, and the abdominal contents and excretions were poured forth very largely. The patient recovered from that day. Bleeding was rarely hazarded in those days.

*Observation.*—It seems the patient was in that extreme state of debility when the gigantic practice was adopted, that marks an approaching crisis or termination, either in the disappearance of fever, or in death. The large doses of calomel and jalap then given, powerfully and promptly excited the liver and gastro-intestinal tube to pour forth their contents very profusely; and most probably recovery was mainly attributable to the salutary consequences of those evacuations.

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## SECTION VIII.

### ABRIDGED CASES OF CONGESTIVE NERVO-BILIOUS FEVER.

(138.) ÆTAT. 43.—20 years in India. Short, dark, and muscular. Lived freely. Suffered sundry bilious attacks.

Resided several months at an elevation of 2,500 feet, where the land has not been cleared; the trees and jungle cut down decaying on the surface. On descending to the valley, he was taken ill with fever; felt cold, though using blankets at the temperature of 86.—2d evening, took calomel gr. x.—3d day. I was consulted by the surgeon in attendance. Venæsectio ad ℥xxiv. Calomel ℈j. horâ somni. Haust. purgans mane.—4th day. Has been freely evacuated. No fever all day. Repet. calomel horâ somni.—5th day. Frequent vomiting and faintness in the night; complains of heat in the feet and hands, but they are marble cold. The head is very hot; countenance natural, but of a yellow tinge; extreme weakness; breathing rather embarrassed. Pulse 116 to 120, large, soft, full, and feeble; tongue slightly furred, moist; skin dry and hot, except in the extremities; headache; pains about the forehead, and feels as if the head was filled with lead; constant nausea. Emp. Cantharid. Mag. scrob. cordis. Purgative mixture and enema. Mist. Salinæ ℥iss. 3is. horis. Shave the head, and use cold applications.—6th day. Freely purged; dejections contain white filamentous substances. Con. Calomel and alia remedia.—7th day. Pulse 112, soft, not large; tongue less furred, clammy; skin cold; palms dry; urine scanty and red; general yellowness of the surface, and puffiness of the eyelids; restlessness. Emplast. Cantharid. capiti. Hirud. xij. circum anum. Calomel ℈ss., Camphoræ gr. iv. in pil. ij. horâ somni. Pulv. Jalapæ comp. ʒss. in syrup. mane.—8th day. Urine scanty; a little sleep. Pulse 116, not strong; tongue moist, little fur; thirst; prostration of strength; pain of the head, and heaviness; slight slow delirium, nearly imperceptible. Tried a little wine and water, but said it was like fluid fire, and would not take it. Repet. pil. c. calomel gr. xv. hor. somni et Pulv jalapæ comp. mane. Cont. mist. salina.—9th day. Blister removed, and slept a little. Pulse 102, better. Conjunctiva jaun-

diced; cold, but complains of heat. Calomel gr. x. horâ som. mist. purgans mane. Sinapisms were ordered, but not applied.—10th day. He expired comatose.

*Examination.*—The body is jaundiced; cerebral effusion between the convolutions, and in both lateral ventricles. Fluid in the spinal theca; spinal vessels engorged. Pericardium contained ℥viij. of yellow serous fluid. The internal surface of the aorta is minutely injected, and of a brilliant claret colour. Intestines pale; the ascending colon much inflated. The liver large, a chocolate colour, and natural consistence with several corrugated indentations or scars; sections dark and close, not granular. Spleen and pancreas natural. The stomach is contracted, corrugated, and dark, with vascular congestion. Honey-comb ulcers in the ileum, and very extensive congestion. The inferior sixteen inches has the mucous coat disorganized, apparently from excessive congestion. Mucous coat of the large intestines dark from sanguineous engorgement. Sections of the external cellular tissue are a yellow clay colour, resembling sections of the female mammæ.

*Observation.*—Death took place from cerebral effusion, consequent upon excessive capillary congestion. This peculiar form of fever originates from a congested state of the capillaries; and hence the remedy must be directed to remove that state of the system. In the very early stage of the disease, general bleeding and mercurial purgatives might have been successful; perhaps the first alone, early and freely employed, would have sufficed. In this case, the *first* and *second* days were lost by inactivity. *Fourth* day, temporary improvement from the active measures adopted on the *third* day. *Fifth* day announced cerebral, pulmonary, and abdominal engorgement. Probably, the free use of leeches over the head and trunk, might then have been too late: in the early stage, or even after the general bleeding of the third day, they might have been very useful.

I have some doubt whether calomel was not injurious in this case; it is certainly possible, and on that view wine was prescribed.

(139.) Ætat. 20.—One year in India. Middle size, muscular, pale. Febrile paroxysms of six hours these two days. Bowels costive; urine red; no appetite; thirst. Tongue very red, with long white thready fur. Pulse 126, soft; skin cool; twitching of the tendons. Ant. tart. gr. iij. statim. Calomel gr. xv. horâ somni. Pulv. rhei ʒj. mane.—2d day. General bleeding.—3d day. Pain under the ribs on each side. Hirud. xxx. part. dol. Pulv. Antimon gr. vj. Pulv. Ipecac. ℈ss. bis die.—6th day. Skin hot. Pulse 114; the surface sponged when hot. Mist. Salina 4tis. horis. Calomel gr. viij. Pulv. Antimon. gr. v. horâ somni om. nocte.—7th day. Hirud. x. circum anum. —8th day. Passed several dark dejections; subsequently, several large coagula of blood. Pulse 120, large, soft, and reduplicating. Tongue red, smooth, and dry; skin warm. Repet. Hirud. xij. et med.—10th day. Five leeches have been continued with the medicines daily. Pulse 118, not hard; tongue rather moist; skin cool; urine pale. Con. med.—12th day. Mouth sore, but no ptyalism; delirium. —15th day. Leeches and medicines continued; also delirium. Pulse very large, 120; skin hot; dejections dark and bilious; urine straw-colour. Con. rem. Emplast. Cantharid. inter scapulas.—20th day. Mouth very sore; no ptyalism. Pulse 110, soft; tongue moist; skin cool. Tumours appeared behind the ears, but are now declining. Omit. calomel. Pulv. Ipecac. et Antimon. ā ā gr. vj. ter die. Ol. ricini pro re natâ. Decoct. Cinchonæ ℥ij., Tinct. Cinch. comp. ʒiij., Tinct. Digital. gtt xxx. M. ter die febre abeunte.—25th day. Restlessness; great exhaustion. Pulse 140, soft; dejections bilious; urine straw-colour; low delirium. Con. Mist. Cinchonæ. Omit. Ipecac. et

Pulv. Antimon. Vin. rub. ℥vj. in die.—28th day. Pulse 160; no improvement.—30th day. Pulse 148. The body vibrates from vascular action; low delirium continues. Skin cool. Con. emplast. Cantharid. inter scapulas. Sinapismi pedibus.—35th day. Restlessness; delirium; dejections bilio-feculent; urine turbid; countenance collapsed. Pulse 140, large and soft; tongue sore; skin cool. Con. Mist. Ipecac. gr. vj. ter quaterve.—36th day. Singultus; cold sweats: sinking, and death.

*Dissection* twelve hours after death. Meningeal and cerebral engorgement; fluid, largely effused between the convolutions, elevates the arachnoid. The loose cellular tissue of the spinal canal gorged with semi-gelatinized fluid. Fluid freely effused within the theca, and the vessels of the cord are gorged with blood. The lungs dark from sanguineous engorgement; a tubercle, the size of a nutmeg, filled with dark brown sanies in the upper part of the right superior lobe. The adjacent tissue is greatly engorged. A stratum of yellow gelatinized lymph is interposed between the pulmonary pleura and tissue over and near the tubercle; also numerous contiguous false membranes and the adhesions are bounded by inflamed circles. The inferior lobe has an extensive induration, formed by a congeries of small tubercles that emit dark sanies, variously coloured, and pus, of which some is milky. The left lung is similarly diseased. Small patches of false membrane are situate on the heart's surface; the semilunar valves red like muscular tissue; the internal surface of the aorta is a light claret colour, and on being washed, resembles mucous membrane; the internal surface of pulmonary veins and arteries is red, and so is that of the descending vena cava. The carotid arteries have a slight blush. The thyroid gland is greatly enlarged, and pressure forces out small round glutinous bodies, more or less transparent. The stomach is pushed into the left side, and folded on itself: this displacement is occasioned by

flatulent distension of the ascending and transverse colon. The general peritoneal surface is pale, except that over the small intestines, which was inflamed, and marked with dark spots. The liver is full-sized, pale, and bloodless. The gall-bladder contains orange red bile, spleen diminished, mucous membrane of the stomach extremely vascular and engorged. Ilium contracted, extremely vascular, and strongly injected; proceeding downwards, some patches become darker, others more red, and there are some deep irregularly shaped ulcers, with dark red elevated margins, and depressed yellow centres; near the cæcum some of the ulcers are sphacelated, the peritoneal coat only remaining: two inches from the cæcum, ulceration occupies the inner surface, has destroyed the cæco-iliac valve, and perforated the intestine at that point. Great vascular engorgement throughout the mucous membrane of the large intestines. Kidneys are slightly engorged. The pancreas enlarged, firm, dark, and emits sero-sanguineous fluid on pressure. Capillary vessels on the mucous surface of the urinary bladder are injected.

*Observation.*—Those fevers whose invasion is marked by a cool skin, have that symptom from a congested state of the capillaries on the mucous surface of the lower part of the ilium. The cerebro-nervous and ganglionic systems become rapidly affected by engorgement, that progressively sinks the vital powers, and destroys their functions. When the sanguineous vessels are preternaturally dilated, or when the vital powers are depressed, from congestion in the envelopes of the ganglionic system, there is a tendency to engorgement. If this engorgement takes place in the gastro-intestinal mucous surface, ulceration follows. If in the cerebral vessels, then the serous membranes of the brain and spinal cord pour forth increased exhalations, and death ensues. In the present case, the bleeding was sufficient to alter the ordinary course of the fever from an early to

remote fatal termination; but it was insufficient for effecting the cure. In those cases, the soft pulse is a treacherous symptom; for local bleeding, at least, must nevertheless be promptly and largely used. Pain under the ribs, on the third day, indicated hepatic congestion. The coagula of blood passed on the eighth day came from vessels of the mucous surface destroyed by ulceration. The first, second, and third days, usually form the entire period in which remedies are successful. 1*st*, The general circulating column of blood should be discreetly and effectually reduced. 2*dly*, The capillary system ought to be freely and promptly evacuated by leeches. 3*dly*, The hepatic apparatus, and gastro-intestinal surface, should be unloaded and called into action by vascular depletion and mercurial purgatives. 4*thly*, The general system ought to be stimulated, and the tendency to partial engorgement relieved, by counter-irritants. 5*thly*, The use of quinine is required to restore tone to the capillary system. Copious general bleeding at first, and the application of leeches, should be repeated as often and largely, as tendency to congestion may indicate their use.

(140.) Ætat. 19.—Ten months in India; height six feet three inches, dark, muscular. Exposure to the sun in the jungle produced fever; three days back he was costive and took medicine. Now excessive restlessness and jactitation, urgent desire to drink, similar to that in cholera. Constant vomiting; pale and anxious countenance; speech hurried; prostration of strength; pain and burning of the head, with stinging heat; skin cool and moist; hands and feet very cold, but not livid; he feels a burning heat, and refuses to remain covered; the eyes watery, but sparkle, as if from wine; abdominal irritation and tenesmus; breathing short and embarrassed; pulse 110, soft, feeble, not large; tongue with a very slight fur, clammy; skin cold; dejections dark, like coffee; very

little urine, of a red orange. Treatment decided by consultation: twelve leeches to the head, a large blister between the shoulders immediately; and another to the pit of the stomach in the evening. Calomel gr. xxx., Opii gr. ij. statim.—2d day. Much vomiting in the night; very scanty coffee-like evacuations; a very little urine of a red orange; surface quite cold, but complains of heat, and will not be covered by the clothes: cannot get up, requires to be lifted. Breathing laborious; a very slight tendency to delirium; the eyes water, pupils dilated, little affected by light; countenance collapsed; burning of the eyes; heat at the stomach and vomiting; pain at the sigmoid flexure that runs down the thigh, increased by pressure. Fainted in the night. Pulse 106, feeble, with tendency to intermit. Tongue furred white. Skin cool. Constant vomiting of fluid taken. Pulv. jalapæ comp. ʒss. statim. Hirud. xv. reg. epigastr. sinistra. Sinapismi pedibus vespere.—Evening. No improvement. Calomel ʒij., Pulv. antimon. ʒss., Opii gr. vj. M. et divid. in chart. vj. Sumat j. quartâ quâque horâ.—3d day. Three doses of the medicine taken; vomited considerably; no dejections; urine scanty. Pulse 120, weak. Sinapisms taken off in three hours; a livid blush left, and even then the surface is marble cold; jactitation, restlessness, laborious respiration, faintness, thirst; stinging heat of the head, all other parts cold, but he complains of heat. Emplast. canthar. dorso. Pulv. jalap. comp. ʒj. statim. Enema purg. om. secun. hora donec alvus respond. Ol. ricini ℥ij. 2a hora, P.M., si opus sit.—Vespere. Copious dark green dejections, with two living lumbrici. Urine free; but no other improvement. Pulse 140, small and feeble.—4th day. No improvement; three slight dark muddy dejections; twelve oz. of high-coloured urine; no sleep, jactitation, pulmonary and cerebral engorgement, coma; pulse 150, fleeting, and intermits. Spts. æther. sulph. ʒj. mist. camphor. ℥ij. M. capiat ½ p. r. n.

Wine or dilute brandy and water. Death took place on the fourth day of treatment, the disease being severe from its invasion. Joints stiff, muscles rigid, no yellowness, the surfaces excoriated by blisters, and livid from the sinapisms.

*Dissection* twelve hours after death.—Extensive cerebral effusion; gas or air bubbles are observed in the cerebral vessels sufficient to afford crepitus. The large vascular trunks are engorged, and lateral ventricles filled with fluid. The arachnoid is milky throughout from extensive effusion. The pia mater between the convolutions has its vessels injected. Loose tissue of the spinal canal is injected with semi-gelatinized fluid. Considerable effusion within the theca, and the vessels of the cord are engorged. The lungs posteriorly engorged with blood; mucous coat of the air tubes is pale, but those tubes are filled with spumous fluid. Interior surface of the pulmonary artery darker than usual. The aortic semilunar valves are inflamed and fleshy; the interior of the aorta is of a claret colour to the termination of the arch, and thence to the iliacs there are claret-coloured patches; deep red patches encircle the origin of the cœliac and other abdominal arteries. The surface becomes very dark, and the coats thin, at the bifurcation. The colon prodigiously inflated, extends from the cæcum diagonally upwards to the left, and occupies the position of the stomach; that viscus is extremely contracted and compressed, is forced into the left hypochondrium, and quite hidden by the meteorized colon. Peritoneal surface pale; the liver full-sized, dark grey colour, texture close, sections smooth and shining. Gall-bladder contains three ounces of tarry granular black bile; spleen natural; kidneys large; vascular system injected; pancreas small and dark. Mucous membrane of the stomach very strongly engorged, and resembles ecchymosed spots; near the pylorus pale. Towards the cæco-iliac valve, vascular congestion is extremely pronounced, and at that part an ulcer exists, five

inches in length. Inflammation marked in the ascending and transverse colon, the remaining portions pale.

*Observation.* — The cold skin evinced disease in the mucous membrane of the ilium; the constant vomiting indicated inflammation of the internal coats of the stomach; and the embarrassment of the lungs, and heat of the head, proved the suffering of these parts from engorgement. The feeble pulse, and advanced period of the disease, prevented general bleeding. If leeches had been applied over the shaved head, to the trunk, and around the anus, the pulse would most probably have rallied, and the sinapisms and blisters would have been more efficacious. I have seen sinapisms to the lower extremities, both in the coma consequent on bilious fevers neglected in the early stages, and in that of cholera, produce determination of blood to the lower extremities, accompanied with great swelling and prompt relief. In this case they had not those effects. The large doses of calomel were ventured on, inferring, from the well-known fatal character of the disease, that ordinary means would be of no service. The calomel and opium were at least not very useful, and perhaps few cases can occur in which calomel can be advantageous, when it is so extensively used.

(141.) Ætat. 30.—Fourteen years in India; height six feet three inches, dark, thin, muscular. Suffered severely from hepatitis and dysentery. Ill five days, one general bleeding, leeches twice, and medicine very little used. I attended in consultation the sixth day: jactitation; bowels costive; extreme debility and faintness; very little urine; no appetite; urgent thirst; extremities very cold and wet; no pain. Pulse 106, soft and feeble. Tongue rather red and clammy, with heavy fur; head perspiring; trunk and head of natural temperature; moans; eyes sparkling; says he felt a burning heat all night. *Diagnosis.*

Inflammation of the inner coat of the great arteries, and that of the ilium, with cerebral and hepatic congestion. Emplast. canth. inter scapulas stat.; sinapismi pedibus. Ol. ricini ℥iss., Ol. terebinth. ℥ss., sumat ½ stat. et repet. post hor. ij., si opus sit. Enema vespere, si opus fuerit.—Vespere. Five doses of the oil given. Two free dejections, blister rose, sinapisms painful, faintness, extremities very cold. A little brandy and water given. Chicken broth, tea, and barley water. Camphoræ gr. vj., Calomel gr. xv. horâ somni. Ol. ricini ℥ij. mane. A little wine occasionally.—2d day. Passed a sleepless and restless night; sinapisms removed, and the surface quite cold; several bilious evacuations in the night, with some scybalæ; occasional vomiting. Pulse 130, feeble, thready, and variable. Tongue dry and red; skin covered with cold perspiration. Decided to give nourishment, apply heat, use stimulants moderately, and, if acceptable, to give all drinks warm. Seized with great difficulty of breathing. Emplast. cantharid. pectori. Spts. æther. vitr. ʒj. in mist. camph. ℥iss. M. sumat ½ p. r. n.—Vespere, retrograded. Extremities colder; pulse thready, intermits; mind clear; thirst excessive; says that he feels the liquid he takes does not enter his stomach; fluctuation; frictions with strong liniment along the spine. Repet. calomel horâ somni.—2d day of consultation he expired.

*Dissection*, eight hours after death. Meningeal and cerebral vessels engorged; colourless fluid, slightly coagulated, freely effused between the arachnoid and the pia mater. The arachnoid milky; minute air-bubbles very numerous, both in the fluid under the arachnoid and within the minute transparent cerebral vessels; great vascular engorgement at the base of the brain. On the anterior part of the pons varolii the sanguineous congestion resembles ecchymosis; sero-sanguineous fluid in the lateral ventricles, and the vessels ramified on its surface are dilated

and gorged. Effusion within the spinal theca; numerous adhesions of the arachnoid to the spinal cord, and some congestion in the spinal vessels towards the cauda equina. Slight pulmonary congestion; semilunar valves of the aorta fleshy, and a blush extends from them through the aorta to the termination of the arch, where it assumes a lighter colour, and again becomes darker near the cœliac artery; the carotids are dark, and the lining membrane appears altered or partially decomposed. The pulmonary artery internally has a reddish tint.—*Abdomen.* The cellular tissue is of the natural colour. The cardiac orifice is just under the fifth rib (on the left), and the stomach extends diagonally towards the opposite inferior ribs; intus-susception of the lower part of the ilium (most probably produced by the oil) found in four different places. The cæcum and ascending colon are prodigiously distended with gas, the latter displacing the stomach. The liver is full-sized, pale, mottled, and flaccid; a large corrugated scar on the convex surface, thickly covered with white false membranes, marks the site of a former abscess. The cyst of the abscess extends an inch into the hepatic substance; a second scar on the left lobe; sections of the tissue are pale, spongy, coarse, and it tears readily. No blood emitted. The gall bladder contains ʒx. of aqueous green bile. Spleen small and healthy; kidneys dark from vascular injection; pancreas dark, small, and firm; urinary bladder contracted, nearly empty, and its internal surface has the capillaries injected. The posterior part of its mucous coat has fourteen pustular ulcers, varying in size from a millet-seed to that of a small bean, each having its margin much inflamed. Mucous coat of the stomach flaccid, thin, and pale; no rugæ in the duodenum till the opening of the ductus communis; six feet down the ilium the intestine becomes contracted, and the first intus-susception takes place, marked by a little thickening, but no inflammation; very numerous honeycomb

ulcers also exist in this part. The fourth intus-susception is two feet from the cæcum. Approaching the cæco-iliac valve, the mucous surface becomes red, and the last fifteen inches of this inflamed surface are nearly all occupied by ulcers; three of these, instead of being elevated, are deep, and appear in the chronic stage. Considerable vascular engorgement in the mucous surface of the large intestines, and scars of numerous dysenteric ulcers are observed.

*Observation.*—One general bleeding, and leeches twice, did not arrest the progress of disease. The consultation decided, that the period even for local bleeding had passed, before the case came under medical care, and I concurred in that opinion. This case, however, is an additional proof, that the disease proceeds, 1st, to extreme congestion; 2dly, to cerebral effusion. It hence follows, that the indications of cure are, *first*, to relieve congestion; *secondly*, to remove the local determination by counter-irritants and stimuli. It would seem, that leeches very largely used over the sutures, along the spine, and over the liver, might be tried after the early stage had been neglected. In a similar case, I would counsel that course of treatment.

(142[1].) Ætat. 38.—Twenty-two years in India; height six feet three inches, muscular, dark, much on service; drunken habits. (Ephemeral fever, Case No. 19.) *Re-admitted.* Formerly was injured by a fall whilst intoxicated; subsequently subject to headache, pains, and stiffness of the trunk, with occasional flushes of fever. Now, a febrile attack; body very hot, extremities cold. Pulse 110, hard; excruciating headache, costiveness, no abdo-

[1] N.B. A colleague who has my respect and confidence furnished this case and dissection.

minal pain on pressure. Venæsectio ad deliquium, ℥xviij. only flowed. Ol. ricini ℥ij. statim. Enema vespere si opus sit.—2d day. Pulse 120, hard and full; trunk hot; extremities vary from alternate chills and flushes; pain in the top of the head; some dark dejections; urine scanty and dark; no abdominal pain on pressure; tongue furred; slight thirst. Venæsectio ad ℥xviij. Shave the head. Hirud. xxj. temporibus. Calomel et extract. col. comp. ā ā gr. x. Pulv. ant. gr. v. horâ somni. Pulv. jalapæ comp. ʒj. calomel gr. v. M. cras mane. Mist. salinæ ℔ij. ant. tart. gr. iv.; a wine glass full every two hours.—3d day. Night restless; headache continues. Pulse 120, softer; heat of the body less; bowels open. Venæsectio ad ℥xvj. The pulse rose to 140, and became small. Cont. mist. salina. Admoveantur aqua frig. et acetum constanter capiti. Repet. pulv. purg. cras mane. Emp. cantharid. nuchæ vespere. Calomel ℈j. opii gr. ij. horâ somni.—4th day. Violent heat of body; slept a little; very weak. Pulse 120, small, soft, and tremulous. Tongue moist, red; no appetite; bowels opened freely. Calomel gr. iv. Pulv. Antimon. gr. iij. Opii gr. j. M. 3a. quaque hora. Infricat. unguent. hyd. fort. ʒj. mane et vespere. Con. mist. salina. Vespere. Pulse 110, small, soft, and tremulous; great prostration of strength. Haust. card. pro re natâ.—5th day. Mouth tender. Pulse 120, soft, small, and tremulous; great exhaustion; no thirst or appetite. Tongue excited; no abdominal pain on pressure. Con. calomel, ung. hydrarg. fort., et haust. card. Vin. rub. ℥iv.—6th day. Not better. Pulse 125, soft and tremulous. Bowels open; urine pale; no ptyalism. Con. calomel 3tia. quaq. hora et alia.—7th day. Restlessness; jactitation; tremors; exhaustion; bowels costive; tongue dry and red. Pulse 100, soft, small, and tremulous; much thirst; no ptyalism. Ol. ricini ℥j. statim. Enema Vespere si opus fuerit. Con. alia.—8th day. Restless night; dysuria; pain in the fore-

head; skin hot in some parts, moist and cold in others. Pulse 120, small; tongue furred and red; urgent thirst; very weak; no stool; mouth not sore. Con. pulv., ung. et alia. Chicken broth and jelly.—9th day. Bowels freely opened, very weak. Pulse 112, soft, small, and tremulous; tongue red and dry; skin cool; urine pale. Ol. ricini ℥j. cras; con. omnia.—10th day. Flushes required cold applications. A little sleep; countenance collapsed; tremors, and tendency to coma; clammy perspiration; trunk hot. Pulse 104, small and soft; tongue dry; urgent thirst; mouth not sore; no dejection; urine dark. Omit. pulv. et unguentum. Haust. card. ter die. Vinum cum aqua pro potu commune. Cold applications occasionally to the body and head. Emplast. canth. epigastrio vespere.—11th day. Startings; tendency to coma; tremors. Pulse 124, small and soft; skin clammy; tongue furred moist; pupils contracted; senses clear. Vin. rub. ℥vj. in diem. Admoveatur vesic. utrique suræ. Con. alia. Vespere. Delirium and coma. —12th day. Coma. Pulse 150, fluttering; subsultus tendinum, tremors, and death.

*Dissection* twelve hours after death. The arachnoid milky; fluid largely effused between the convolutions, and elevates the arachnoid. Vascular engorgement of the cerebral vessels; ten drachms of serum at the base of the brain. There are no air globules in the fluid or cerebral vessels; fluid is effused into the spinal theca. Great engorgement of the spinal vessels on the posterior surface. Spumous fluid effused into the pulmonary air cells; interior of the aorta is of a rose colour. The stomach and intestines are distended with gas. Liver of the natural colour, except the inferior surface of the right lobe, which is a little green; sections of its tissue bloodless, and exhibit the usual appearances. Gall bladder contains ℥ij. of very viscid granular bile. Spleen natural. Kidneys and pancreas natural; mesenteric glands enlarged. Mucous membrane of the stomach

dark brownish red; rugæ in duodenum and jejunum, where the colour changes from brownish red to green, and small ulcers appear; a blush is observed throughout the ilium. Many ulcers in the colon, with patches of engorgement. Mucous membrane of the urinary bladder vascular.

*Observation.*—In this case, the ilium was less, and the head more affected. The case was controlled by the treatment, until the evening of the third day. The large dose of calomel and opium was then used, and from that period till the tenth mercurials were the principal agents employed. As those means failed in this and several similar cases, leeches applied daily over the sutures of the head, the spine, the liver, thorax, and occasionally around the anus, may supersede the mercurial treatment with advantage.

(143.) Previously in hospital, with acute dysentery. (Case No. 94.) Fever these two days. No appetite; bad taste; prostration of strength; costiveness; urine hot, dark, and scanty; cannot sleep; headache; thirst. Pulse 116, large, not full; tongue slightly furred; skin cold and wet; slight heaviness, and oppression of breathing. Says his skin is burning, yet it is very cold. Constant nausea. Venæsectio ad deliquium. Ol. ricini ℥j. vespere, et hirud. xl. abdomini. ℥xlij. of blood drawn from the arm, then deliquium.—2d day. Ol. ricini repeated and operated. Leeches bled freely. Abdominal pressure refers pain to the pit of the stomach. Pulse, sitting up, 140; lying down, 110. Tongue pale; skin cold; constant nausea; giddiness. Skin not burning; bad taste in the mouth; pain of right shoulder, and in the thorax, but easier. Emplast. cantharid. inter scapulas, statim. Ol. ricini ℥j. Ol. terebinth. rect. ℥ss. M. mane.—3d day. Gas constantly passed from the stomach; nausea, especially on moving; several copious fluid dejections; severe pain of the head on moving. Pulse 104, soft; tongue with a slight fur; skin natural. Con. Ol.

ricini, &c. Mist. nitro-ammon. ℥ij. bis. Calomel ℈ss. horâ somni. Sinapismi usque ad genua.—4th day. Sinapisms gave severe pain, and produced redness. One slight dejection. Urine scanty and dark, with copious deposit. Severe pain in the head, also at the cæcum from abdominal pressure. Pulse 92, hard; tongue livid, and teeth mark its margin; head not hot; superior and inferior extremities cold; nausea and gas constantly passed from the stomach. Hirud. vj. supra cæcum et x. circum anum. Repet. Sinapismi et med.—5th day. Urine, one quart, turbid and flocculent. Slept; less thirst; no pain; burning heaviness or nausea. Pulse 84; tongue with a heavy fur; skin warm, but hands and feet cold. Better. Con. mist. salina. Ol. ricini et calomel.—6th day. Urine copious, pale; three free dejections; slept; swelling in the feet and legs from sinapisms; bad taste. Saliva flows from nausea. Pulse 66, natural; tongue furred; skin cool. Con. rem. The natural heat returned, and on the fifteenth day discharged.

*Observation.*—The cold moist skin and depressed vital powers mark an injected state of the mucous surface of the ilium, and of the capillaries distributed to the tissue of the abdominal and thoracic ganglia and plexuses. The large intestines fill rapidly with gas; they press on, irritate, and displace the stomach, producing vomiting, cerebral embarrassment and congestion, that tends to terminate by cerebral effusion and death. This insidious and fatal disease is complicated and obscured by the symptoms resulting from inflammation of some part of the lining membrane of the aorta or its valves, together with some form of hepatic derangement. After very free general and local bleeding, the second day presented hepatic symptoms and cold skin. A blister was used, to relieve the head and equalize the circulation. Third day, neutral salines to relieve the mucous membrane; calomel to stimulate the hepatic secretion, and sinapisms to determine from the head and trunk to the in-

ferior extremities. Fourth day, leeches over the cæcum and around the anus relieved the remaining fulness of the entero-portal vessels, and the sinapisms tended to effect the same object.—5th day. Turbid and flocculent urine, with general improvement; regimen, neutral salines, refrigerants, occasional purgatives, and latterly tonics, sufficed for the cure.

(144.) Ætat. 29.—Five years in India. Middle stature, fair, and muscular. Fever for two days, which commenced with flushes and rigors; pains of the head, back, and extremities; fainting fits, and prostration of strength. Now severe headache, nausea, and pains of the whole body, especially the loins. Pulse 140, soft and small. Tongue not red, but with a granular fur. Skin natural or cool. Countenance slightly flushed, but clear. Bowels costive; appetite bad; no sleep; heaviness and weakness, with pains of the limbs, loss of spirits, and dulness. Venæsectio ad deliquium; ℥xlviij. drawn, and fainted.—Vespere. Haust. emeticus. Calomel gr. x., Antimon. tart. gr. ss., Pilul. ij. et emplast. canth. inter scapulas horâ somni. Shave the head.—2d day. Several dejections, no febrile accession, little pain of the head. Pulse 120, largely dilated, but soft. Tongue tremulous, acquiring a white flaky fur. Skin moist and cool; countenance natural; no thirst. Hirud. xvj. supra suturas. Pulv. antimon. Jacobi gr. v. 8is horis. Repet. calomel et pulv. antimon. horâ somni; mist. purgans mane.—3d day. Slept better, yet flushed. Pulse 128, volume large, rather full; tongue moist; skin natural. Contin. med. Cold applications frequently to the head; hirud. xiij. capiti, si dolor adest.—4th day. The leeches were applied; improving. Con.—5th day. Improving. Pulse 120, large and soft. Omit. med. Sulph. quin. gr. iij. 8is horis, febre abeunte. Ol. ricini ℥ss. pro re natâ. Hirud. repet. si dolor superven.—6th, 7th, and 8th

days. The pain returned, and was daily checked by the leeches and cold applications. Castor oil and quinine continued, and the patient recovered after twelve days' treatment.

*Observation.*—This variety of nervo-bilious fever is well marked. The tendency to cerebral and ganglionic engorgement was subdued by one general, and seven local bleedings, aided by a blister, mercurials, antimonials, and purgatives.

(145.) *Remittent fever and hepatic congestion.*—Ætat. 22.—Tall, slender, fair; twelve months in India. Skin hot and dry; severe headache, eyes sparkling. Pulse 110, bounding. Haust. emet. statim. Hirud. xij. capiti.—2d day. Came under my care. Pulse 124, soft, but full; skin hot and dry; tongue excited. Urine dark. Bowels open. Venæsectio ad ℥xxiv. Calomel gr. vj., Pulv. antimon. gr. v. horâ somni. Shave the head.—3d day. Fever continued; several dejections. Pulse 120, soft. Skin hot and dry. Tongue clean. Mist. salina tertiis horis; hirud. xij. capiti supra suturas. Pil. hydrarg. gr. viij., Ipecac. gr. iv. bis die.—4th day. Bowels open; feverish; soreness at the epigastrium. Urine natural; thirst. Pulse 105, soft. Tongue white. Emplast. canth. scrob. cordis. Ipecac. gr. iv. bis die.—6th day. Cool. Quininæ gr. iv. ter die. Con. calomel.—7th day. Slept a little; three light clayey dejections. Severe pain in the right shoulder, increased by lying on the left side; very hot through the night, now cooler. Tongue clean. Urine natural. Appetite better. Pulse 76, good; mouth tender. Con. quinina. Haust. purg. statim. Pulv. antimon. gr. v., Calomel gr. x. horâ somni omni nocte. Mist. salina ter die.—8th day. Pain in the side and shoulder continues. Con. rem. sed omissione calomel gr. v. Emplast. cantharid. lateri dextro. Ol. ricini pro re natâ.—10th day. Pain has continued in the right

side, blister healed. Emplast. cantharid. parti dol.—14th day. Some pain in passing the urine. Hirud. vj. perineo, et fotus abdom. Con. rem.—18th day. General health improving. Dejections natural. Pulse 88, soft. Tongue and skin nearly natural. Pil. hydrarg. gr. x., Pulv. antimon. gr. v. horâ somni. Infus. chereytæ ℥ij. bis die. Omit. calomel.—19th day. Pain in the side and shoulder returned, dejections and urine natural. Pulse 80, a little hard. Tongue clean; skin warm. Emplast. cantharid. part. dol. Con.—20th day. Better. Vespere, spontaneous purging, a white clay colour, pain in the side and shoulder. Calomel gr. viij., Opii gr. j. M. horâ som. omni nocte.—21st day. Less pain, slept. Pulse 78, good. Tongue rather excited. Skin cool; appetite good. Ol. ricini ℥j. statim, et pro re natâ. Omit. pil. calomel et opii, et sumat pil. ut antea hor. somni.—38th day. After the repeated use of blisters, leeches, laxatives, and pil. hydrarg., cum ipecac., discharged.

*Observation.*—This case is an additional evidence of the very intimate alliance between febrile cases and hepatic derangement. The fever claimed early attention and treatment. When fever was removed, instead of the return of health, symptoms of hepatic congestion ensued. The treatment of the second stage was very defective; a second general bleeding was distinctly indicated from the third till the fourteenth day, and leeches should have been used repeatedly, and freely over the hepatic regions. Mercurials and blisters would then have been more efficacious.

(146.) Ætat. 26.—Five years in India; middle size, florid, fair. The body is tremulous, with tendency to slight rigors; skin cold. Pulse 104, feeble. Tongue loaded; bowels loose, nausea and constant vomiting, thoracic pain and dyspnœa, ailing six days. Pulvis emeticus statim. Hirud. v. circum anum. Calomel gr. viij. horâ somni.

Pulv. purgans cras.—2d day. Pulse 80, small, a little hard. Skin hot; tongue tremulous, furred. Slight pulmonary embarrassment. Stethoscope indicates over fulness of the heart and large vessels. Venæsectio ad deliquium.—3d day. Profuse sweats, skin cold and wet, nausea, vomiting, and restlessness. Heart's action very violent. Repet. pil. horâ somni.—4th day. Venæsectio ad deliquium, 11a horâ. Repet. pil. horâ somni.—5th day. Improved. Less tremulous. Calomel ℈ss. horâ somni. Pulv. purg. cras.—6th day. No nausea or vomiting. Quininæ gr. ij. secundis hor., febre abeunte. Pulv. purg. pro re natâ.—20th day. Discharged.

*Observation.*—This case partakes of the intermittent and congestive nervo-bilious characters, the treatment was adapted to that variety of disease, quinine being given freely on the disappearance of congestion.

(147.) A female. Ætat. 36.—Five years in India; middle size, fair, pale; complained in June at Madras of cold and chilliness for an entire day.—2d day. Skin very cold, debility, anorexia, collapse, sinking and faintness, nausea. Pulse 104, soft, small, and feeble; tongue moist. Calomel gr. vj., Opii gr. iss. M. statim. Emp. cantharid. statim inter scapulas. A little hot water, with brandy and water from time to time.—3d day. Considerable improvement. Stimulants continued, with laxatives.—4th day. Only debility remaining.—8th day. Quite well.

*Observation.*—This case shows the invasion of disease, arrested by stimuli, which at that early period sufficed to remove congestion, and restore an equal and healthy distribution of blood to the several organs, and of nervous energy to all parts.

## SECTION IX.

### ABRIDGED CASES OF MERCURIAL ERETHISM.

In 1808, two cases came under my observation in the Madras European regimental hospital, wherein continual vomiting, with dilated soft pulse, and continued faintings, set in suddenly, during a course of mercurial treatment for fever and a dysentery. All remedies proved unavailing, the patients sunk rapidly and died; the mercurials were continued, but camphor, æther, and opium, were also used. The pathological examinations afforded no other traces of disease than cerebral and spinal effusion, and some engorgement of the abdominal circle. I consulted the surgeon of the regiment (Mr. George Anderson, a very respectable practitioner) repeatedly; and he stated, that he observed similar cases frequently, but could not account for the symptoms or termination, which was always fatal. The reflection of after years induced me to believe, that both symptoms and termination resulted from the use of mercury.

(149.)—In 1817, on account of hepatic derangement used calomel gr. viij. every four hours, and after two days suddenly complained of constant vomiting, faintness, and sinking, with irregular, quick, large, soft pulse, great anxiety and faintness, with restlessness, and profuse sweats, alternated with flushes. I was then consulted, and I attributed the symptoms to the mercury; its use was discontinued, and wines with jellies were freely used. The symptoms were moderated; the gastro-intestinal functions became natural; and in three days the case was free from danger. Ptyalism,

however, came on with great violence the fourth day, although no mercurials (or medicine of any kind) had been intermediately used. The alveolar vessels ruptured, and considerable hæmorrhage took place from the gums. The tenth and eleventh days the gums healed, and ptyalism was nearly gone.—16th day. Health nearly restored, and the patient was able to take carriage exercise. He went to Europe, returned, and died some years afterwards from the rupture of an hepatic abscess.

(148.)—An assistant surgeon, in 1814, formed the rash theory, that if the calomel employed in divided doses for the cure of syphilis, was all administered at one time, the disease would be more effectually cured. He accordingly took ʒiv. at once! I was called to see him on the third day; he could not speak from excessive swelling of the tongue, &c.; he could only swallow fluids sparingly. He wrote, that he had suffered severely from vomiting and purging, with faintness, and want of sleep. Pulse 120, large and soft. Tongue swollen. Skin perspiring profusely; a sense of sinking or faintness, with great restlessness and irritation. Wines and jellies were used, neutral salines, blisters to the throat, warm bath, &c., and the patient removed to the sea-coast. The health in some degree recovered, but he became afflicted with general pains, especially severe in the long bones, and accompanied with nodes. Sudorifics, alterative mercurials, laxatives, and nitro-muriatic acid bath and mixture were used without success. The pains continued throughout the night, and prevented sleep or repose. This state continued for eight months, and had reduced him to an emaciated state; when accidentally bathing in very hot weather, he felt greatly refreshed, and he observed, that the usual hour for the accession of pains passed whilst in the water, without their attack. When he moved out of the bath, the pains set in, and again, on his return into the

bath, they abated. He then arranged a plan for resting the shoulders, neck, and head, and he continued to sleep every night in a large tub of cold water, in a sitting posture. The pains ceased, the functions became natural, and in four months the ordinary strength and health became perfectly re-established. I looked in repeatedly after his hour of retirement, and found him in the tub of cold water, arranged for the night. He discontinued sleeping in water three months afterwards, during the cold and wet season; and he died about twelve years subsequent to these extraordinary transactions.

(150.) *Bilious remittent, with congestive bilious fever; subsequently mercurial erethism.*—Ætat. 28.—Twelve years in India; small, spare, dark; subject to hepatic disease. After great exposure on the hills, seized with fever; had pains in the right side for some time previously; febrile heat was preceded by rigors, pains in the head, back, loins, and extremities; chills, flushes, and constant restlessness, succeeded. Abdomen meteorized; deadly nausea; pains in the iliac regions, loins, and lower extremities. Occasional bilious vomiting, headache. Pulse 104, small and hard. Tongue foul. Skin hot. Dejections dark; urine scanty; urgent thirst; no appetite. Venæsectio ad deliquium; ℥xl. drawn. Symptoms abated for seven hours, and then recurred. Hirud. xxx. part. dol. abdominis. Calomel ℈j., Opii gr. iss. statim. Ol. ricini ℥j. mane. Mist. salina 4tis horis.—2d day. Night restless; less yellowness of the skin and eye; pains better. Pulse 106, small and soft. Tongue foul; skin warm; urine copious, dejections biliofeculent. Calomel gr. iv., Pulv. antimon. gr. ij. 3a quâque horâ. Ung. hydrarg. fort. ʒss. ter die inunguitur. Repet. calomel cum opio horâ somni omni nocte.—3d day. Heat of skin, nausea, extremities cold, head and trunk hot. Pulse 104, soft. Tongue cleaner, considerable exhaustion, eva-

cuations dark. Urine pale, copious. Con. ol., pilul., frictio, et calomel cum opio horâ somni.—4th day. Slept; pain of the stomach, vomiting, and febrile heat, in the morning, succeeded by copious sweat; dejections biliofeculent. Pulse 100, soft. Tongue cleaner; skin moist; mercurial fœtor. Emplast. cantharid. epigastrio.—5th day. Nausea and vomiting; no ptyalism; tongue presents the mercurial fur; skin cool; great debility and jactitation. Urine straw-colour, copious. Pulse 88, small, soft, and feeble. Urgent thirst. Infus. cinchonæ ʒij. secundis horis. Vespere, eight P.M., I was called in consultation. I stated the case to be sinking from mercurials, recommended their use to be discontinued; wines, jelly, and stimulants, to be substituted; and Dr. Ward entered the following note in the journal. "Dr. Conwell saw him about eight, and pointed out in a note the nature of the case, and the tendency of the pulse to intermit." The opium and calomel bolus had been previously given. Mulled port and Burgundy occasionally were then ordered.—6th day. Empl. cantharid. lat. dextro, statim. Con. vin.—7th day. Night very restless. Pulse 102, small and feeble. Tongue dry, with red edges; constant jactitation, with copious sweats, occasional vomiting, and great oppression of the præcordia; dejections bilious, urine natural, no sleep nor ptyalism. Mist. camph. ℔j., Spts. ammon. aromat. ʒss. M. a wine glass full occasionally. Wines, &c., continued.—Vespere. The pulse intermitted throughout the day, and general collapse took place, relieved by two additional blisters, and the very free use of wine. The vomiting has abated; skin cold and clammy; breathing hurried; tongue clean and moist; urine natural. Pulse intermits every third or fourth beat, and is extremely feeble. Persevere diligently with wine; Champagne, Burgundy, Hock, or Port, as the taste may direct. Hot applications to the feet, and champooing. —8th day. Takes one bottle of Champagne and half a bottle

of Burgundy daily, with a little soup and jelly through the night. Pulse 104, small, soft, and feeble; extremities cold and clammy, trunk of the natural temperature, breathing easy; mercurial fœtor; had two grains of opium last night, which, with the wine, has not excited the spirits.—37th day. The stimuli were gradually diminished as the patient became enabled to use his ordinary diet, and health is nearly restored to the usual standard. A long sea voyage, and residence for some time in a cold climate, is deemed necessary, and he accordingly returned to Europe.

*Observation.*—The large, soft, fleeting pulse, sinking, faintness, vomiting, jactitation, and intermitting pulse, are the symptoms observed in those cases, where mercurials, not having excited ptyalism, affect the nervous, and vascular systems. The free use of the best wine usually suffices for the cure. Champagne, Burgundy, or very mellow perry, are those prescribed in preference. Blisters and opium are occasionally requisite.

(151.)—Had dysentery ten months since, not then or since salivated, although mercurials were very freely employed. At intervals for years suffers from looseness and pain of the bowels, but since his former severe attack, never quite free from it. Recently, exposure, heat, and fatigue, brought on the present attack, which has been especially severe these twenty days. Eight days since, he complained of excessive pains in his bowels, increased by pressure, passing from fifteen to twenty muco-sanguineous dejections daily; little or no sleep; much thirst; no appetite. Tongue white; skin soft; eyes dull; countenance pale and languid. Pulse 90, soft. Calomel gr. vj., Pulv. ant. gr. ij., Opii gr. $\frac{3}{4}$ M. bis die.—14th day. No improvement nor salivation. Calomel gr. x., Pulv. antimon. gr. ij., Opii gr. ss. M. bis die sumend.—16th day. No improvement or salivation.

I was requested to attend in consultation. Patient in bed; countenance dejected, pale, sharp, and anxious. Eyes glassy and heavy; languor; mental dejection, and great prostration of strength. Pulse 126, large, soft, and feeble. Tongue furred white, with livid margins; skin moist; restless, cannot sleep day or night; constant thirst; no appetite. Ingesta produce immediate abdominal pains and evacuations; hence the patient believes it passes directly through the bowels. Constant heaviness, and pain of the abdomen at intervals of fifteen or twenty minutes greatly increased; each paroxysm continues from one to three minutes, and produces one or more painful evacuations. Tenesmus is very distressing. Evacuations muco-sanguineous, with a peculiar fleshy smell; no fæces; pressure over the abdomen produces pain; the cæcum, umbilicus and sigmoid flexure are the most tender. Urine scanty and high-coloured, not passed freely. *Diagnosis.*—Nervous irritation from the use of mercury; chronic inflammation, and thickening with greatly increased exhalations of the intestinal mucous membrane, and immediate tendency to ulceration.

Admoveantur hirud. iv. circum anum; 2da. quaque die. Pulv. Ipecac. gr. iv. in mel, jejuno ventriculo bis die sumend. Sago and red wine.—19th day. The leeches bled throughout yesterday, and induced syncope twice. Medicine produced squeamishness.—21st day. Leeches again bled freely; stools less frequent, and pain abated. Con. hirud. et ipecac.—22d day. Leeches bled all day. Is decidedly better; very little pain. Twelve or fourteen seromuculent stools; no blood; sleeps much better. Con. hirud. et ipecac.—25th day. Much better; appetite returning; thirst and restlessness abated. Con.—26th day. Has continued the ipecac. and leeches; no pain; little thirst; appetite good; sleeps well; five natural dejections daily, with a little mucus, especially in the morning; strength and appetite nearly natural. Quite well. Discharged.

## SECTION X.

### ABRIDGED CASES OF ACUTE HEPATITIS.

(152.) ÆTAT. 28.—Short and lymphatic. Previously suffered greatly from liver disease, dysentery, and cholera, which have left abdominal effusion, latterly decreasing; scanty urine, bowels irregular, belly sounds dull, severe pain of the loins, and over the cæcum. Pulse 94, large, a little hard. Tongue red, with patches, smooth, and unhealthy. Skin natural. Pains of the shoulders.—*Treatment.* General bleeding, calomel, purgatives, blisters, and ipecacuanha. Twenty-seven days' treatment. Discharged. —Twenty-five days after, *re-admitted.* Pain in the right side, difficulty of breathing. Pulse 120, hard; skin hot. Tongue smooth and red. Pains of the head, neck, and shoulders. Urine scanty; no sleep.—*Treatment.* General and local bleeding, mercurials, blisters, and purgatives. Fifteen days' treatment. Discharged.—Two months afterwards, *re-admitted.* Acute pain in the right side, and in the back, with fulness, oppression, difficulty of breathing, and short cough. Pulse 110, large, round, and hard. Tongue excited; skin hot and dry. Three copious general bleedings were practised in three days, leeches and calomel were freely used, and blisters on the third day. A fourth general bleeding became necessary on the fifth day, and full ptyalism was induced on the ninth; but leeches were requisite subsequently from time to time. The symptoms of acute disease abated from this period. On the twelfth day, the urine became like decoct. cinchonæ; on the twenty-third, it became purulent for three days, and then cleared. After thirty-eight days' treatment, discharged.

*Observation.*—Afterwards admitted into hospital, and admission report thus stated his case. Beri-beri, oppression of the thorax, shortness of breathing, pain in the right side, severe pain in the loins, paralysis of the lower extremities, pain of the forehead, with vertigo, giddiness, and partial loss of sight. Bowels regular. Pulse 80, weak; skin cool; tongue white; urine free. Treated with purgatives, local bleeding, blisters, and stimulants. Expired after forty days' treatment. This case appears to have been acute disease of the abdominal viscera, that terminated in effusion, which extended ultimately to the thoracic and spinal cavities, affected the equinal nerves, and produced pains and partial paralysis. There may have been hepatic abscess.

(153[1].) By L. Geddes, Esq.—Ætat. 31.—Six years in India; admitted with acute pain at the cæcum, increased by breathing, these seven days. Pulse quick, short, and jerking. Tongue and skin natural.—*Treatment.* Venæsectio. Fotus. Hirud. xx. abdomini. Calomel ℈ss. statim. Ol. ricini ℥j. vespere. Spoon diet.—2d day. Fainted from bleeding. Pain now under the eleventh and twelfth ribs. Pulse small and quick; skin cold; tongue white; thirst. Con. cal., fotus, et ol. ricini.—3d day. Hirud. xv. part. dol. Ipecacuan. ʒss.—Vespere. Passed much bile, acute pain in the right side, increased by pressure or inspiration. Pulse small, quick, and depressed. Faint, exhausted, cannot sleep. Calomel gr. x. et tinct. opii g$^{tt}$xx. horâ somni.—4th day. Pain continues, cannot lie on the left side; on attempting it, he feels a heavy substance fall down from the right side. Emplast. cantharid. part. dol. Calomel gr. vj., Ipecac. gr. iij., Opii gr. ¼, M. tertiis horis.

[1] A case furnished by a much respected colleague, and being instructive, I publish it.

—5th day. Pain not better. Con. rem.—6th day. Indications of ptyalism, pain subsiding.—Vespere. Omit. calomel. Haust. anodynus hor. som. Mist. purgans p. r. n. —8th day. Vespere. Pain returned. Hirud. xx. part. dol. —9th day. Pain continues. Emplast. cantharid. p. d.—Vespere. Easier; profuse perspiration, preceded by rigor and pain, shooting upward from the right hypochondrium, increased by full breathing, Pulse quick. Ptyalism decreased, mouth sore. Opii gr. j., Calomel gr. x. horâ somni. Haust. purgans mane.—10th day. Ptyalism. Pulse soft and quick; skin damp; no rigors; puffiness of the right side. Cataplasma lateri dextro. Haust. anodynus et haust. purg. p. r. n.—12th day. Urine paler, with a cloudy deposit.—15th day. Pain in the right side.—16th day. Increased pain. Pulse excited, quick, and strong. Tongue presents the mercurial fur; skin hot and dry. Hirud. xij. part. dol. Con. alia rem. Neutral salines.—18th day. Breathing painful.—19th. Pain increased. Pulse quick. Skin moist. Mouth sore. Con. emplast. cantharid. part. dol.—31st day. Discharged.

*Re-admitted* nine days afterwards. Severe acute pain, with tenderness throughout the belly, cannot bear the least pressure; griping, loss of appetite, debility. Pulse small and quick. Skin heated. Tongue furred brown. Thirst; countenance and lips pale. Was not on duty since his discharge. Calomel ℈j. statim. Venæsectio. Admov. hirud. xx. abdomini, postea fotus.—2d day. ℥xviij. of blood taken from the arm, not buffy, cupped. Pain easier; nausea; tongue furred brown. Pulse 100, soft and full. Repet. hirud. xx. et fotus. Ol. ricini ℥ij. p. r. n. Baln. tepid.—Vespere. Calomel ℈j., Pulv. ant. gr. v. horâ somni sumend. —Vespere. Pain and heat continue. Repet. hirud. xxv. et fotus. Admoveatur cataplasm. ampl. abdom.—3d day. Pulse 96, full, thirst. Tongue dry and furred; skin warm. Pain continues, but relief was experienced from the poul-

tice. Hirud. x. part. dol., et con. om. rem.—4th day. Restless, a dragging pain of the side, and heavy shooting pains about the scapula; palpitation, anxiety, face collapsed, tongue dry and excited. Pulse 108, soft; obvious hepatic enlargement. Emplast. cantharid. part. dol. Calomel gr. v., Pulv. ant. gr. iij., Opii gr. $\frac{1}{4}$, M. ter die. Ung. hyd. fort. ʒj. infric. mane et vesp. Bal. ex acido nitro-muriatico. Vesp.—5th day. Pain of the side less, that of the shoulder increased; profuse sweats. Pulse 108, soft; feels better. Con.—6th day. Thoracic oppression. Pain about the scapula and right side, cannot lie on the left. Pulse 94, hard. Tongue dry; skin wet; slight ptyalism; urine pale. Blister not raised. Emplast. canth. statim. Con. med., sed sine balneo.—7th day. Relieved; ptyalism; urine copious and turbid, with a purulent deposit. Pulse 88, moderate; slight appetite. Con.—8th day. Less pain, improving. Con.—9th day. Improving; copious ptyalism.—10th day. Improving.—12th day. Pain returned in the side and shoulder. Pulse 94, small and quick; skin warm; tongue dry. Pil. hydrarg. gr. vj., Pulv. ant. gr. viij. horâ somni. Nitro-muriatic lotion to the side.—13th day. Pain during the night, now easier. Tongue clean, a bright florid red; skin warm and dry. Pulse 100, some ptyalism. Con.—14th. Pain of the shoulder and side. Pulse, tongue, and skin, as yesterday. Con. ung. hyd. fort. ʒj. bis die inung. —15th day. Urine deposits largely.—16th day. Urine turbid, pain and ptyalism continue. Con. Pulv. ipecac. comp. gr. x. horâ som. sum—18th. No ptyalism. Urine deposits largely; tongue red and dry; skin warm and moist; pulse small and quick. Omit. pil. et ung. Capiat haust. amar. et haust. cum opio hor. som.—22d day. Opiates, &c., continued. Tongue and skin dry. Mist. salinæ ℥ij., Vin. ant. g$^{tt}$xv., Mist. camphor. ℥j. M. ter die. Con. alia rem.—26th day. Pain in the side, with fulness. Pulse small and quick. Tongue white; skin

warm. Utat. ung. tart. ant. part. dol. Con. pil. hyd.—31st day. Pain continues; tongue clean; skin warm; pulse small; feeble. Urine like beer, with a white purulent-looking sediment. Con. rem. et pil. purg. pro re natâ.—32d day. Empl. canth. part. dol. Con. Urine like thick stale beer, with sediment.—33d day. Pain continues. Urine as before, with more copious sediment. Capiat vini ℥vj. in diem.—35th day. Last night acute pain; urine turbid, with copious purulent deposit; skin warm. Pulse 110, small and weak; eight leeches and fomentations have not relieved the pain. Empl. canth. part. dol. Calomel gr. viij., Pulv. ant. gr. iij., Opii gr. ¼, M. bis die. Pulv. ipecac. comp. gr. x. horâ somni.—37th day. Skin warm and dry. Pulse 108, small and weak; dyspnœa. Tongue clean; sweats; pain continues; less sediment in the urine. Con. med. et vin.—42d day. Hepatic symptoms stationary. Pulse 108, jarring. Urine like high-coloured beer, with copious sediment.—45th day. Severe pain of the head and shoulder, with dyspnœa returned. Pulse 120, small and irritable. Tongue very dry; skin warm and dry. Urine very turbid, with copious deposit. Emplast. cantharid. part. dol. Con. alia rem.—46th day. Urine invariably purulent and turbid; dyspnœa and pain are severe. Con. om. rem.—48th day. Has paroxysms of cough, with copious purulent sputa. Urine purulent; improves.—51st day. Improves; copious purulent expectoration, at times streaked with blood. Tongue clean; skin warm; pulse small and weak; little pain. Con.—53d day. Cough and severe pain returned. Pulse 115, sharp. Tongue clean; skin hot; urine still turbid, with sediment. Emplast. cantharid. part. dol. Tinct. digital. gᵗᵗx. bis die. Con. alia med.—55th day. Pulse 120, small, jerking. Con.—57th day. Profuse sweats; tongue red and dry; skin warm. Pulse 98, small and soft. Expectorates ℥iij. of bloody purulent matter daily. Urine straw-coloured, with flocculi and deposit.—60th day.

Improves.—62d day. Thoracic pain. Hirud. x. part. dol.—65th day. Improving; purulent sputa. Cont. rem.—67th day. Hectic sweats. Con.—68th. Purulent bloody sputa. Pulse 96, small and jarring; rawness of the throat; œdema of the feet.—72d day. Severe cough continues, with bloody purulent sputa. Pulse 108, small and weak. Tongue red and dry; skin warm.—80th day. Sleeplessness; copious expectoration. Pulse 104, small. Tongue red and dry; skin warm; urine turbid and pale; chest sore; pus also appears in the dejections. Flannels and con. rem.—90th day. Improves; expectorates, and passes pus with his stools; urine turbid, with large flakes of mucus. Pulse 98, soft. Tongue pale; skin warm. Con.—95th day. Improving. Urine has a muco-purulent deposit; sputa ℥iv. daily. Appetite improves. Con.—100th day. Cough and expectoration continue; health improves. Con.—107th day. Continues to improve. Sputa ℥j. daily. He continued improving, and passing purulent urine, till the 136th day, on which he was transferred for the advantage of a change.

*Observation.*—This case throws a strong light on the dangers and sufferings a patient is subjected to from the early mismanagement of hepatitis. The calomel seems to have been the first remedy used. On the contrary, a first, and perhaps a second general bleeding, and the free application of leeches, should precede its use. After general and local bleeding have effectually relieved the vascular system, then calomel may be commenced, and a blister should be applied. The second day was lost; on the third day, the pulse indicated general bleeding, yet fifteen leeches only were used, with calomel, and an opiate! The fourth day, symptoms announced great congestion and tenseness of the liver, indicating both general and local bleeding; whereas, a blister was applied, and calomel given, with opium. 5th, 6th, and 7th. The same treatment, with little improvement, the absence of ptyalism

proving the existence of plethora. 8th. Pain increased; twenty leeches. 9th. Rigors, succeeded by profuse sweats, announced the formation of an hepatic abscess. A temporising use of local bleedings, blisters, purgatives, alteratives, antimonials, and neutral salines, was then adopted: the acute symptoms subsided, the urine became turbid, and the patient recovered sufficiently to move about, but continued unfit for occupation.

Discharged; and in ten days after he returned, with aggravated symptoms of chronic abscess. General and local bleeding was then adopted to arrest the extension of the abscess, and the invasion of dysentery. It is unnecessary to pursue this case through its protracted course. Hepatic abscess tends either to enlarge and perforate the diaphragm (as this abscess actually did), or to open into the abdominal cavity, the gastro-intestinal tube, or to penetrate the abdominal parietes. Whilst ulceration advances, the hard, depressed, or jerking pulse, will announce that course, and bleeding arrests it. After free employment of the lancet and leeches, blisters are very safe and useful; but not before.

This case proves three facts respecting ptyalism: *first*, that it may be effected during the existence of hepatic abscess; *secondly*, that its occurrence takes place apparently when the disease is in progress of cure by the absorption of the pus into the circulation; *thirdly*, that ptyalism being effected in this stage of disease, it does not afford those advantages experienced from it in cases of primary hepatitis. In this, as in various other cases of chronic hepatic abscess, we see that time, careful management, and attention, directed to check acute symptoms as they occur from time to time, are the best means known to secure a happy issue. In my practice, the solution of kali ppt., neutralised with acid. sulph., has seemed to promote the absorption of pus into the circulation. It is singular, but

very certain, that the mucous membrane of the lungs and intestinal tube throw off pus largely in cases of hepatic abscess by a kind of metastasis, without perforation, or any direct communication. In this case, the pus taken up from the cyst was thrown out on the pulmonary, or on the gastro-intestinal mucous surfaces.

(154.) Ætat. 25.—Seven months in India; strong, healthy, tall, muscular. Pain in the chest and belly these three days; pressure painful; breathing gives pain at the epigastrium, with a sense of fulness. Tongue very red, with fur in patches. Pulse 114, very large and full; trembling and twitching of the tendons; profuse nocturnal perspiration; costive; no cramps. Urine scanty, dark, and bitter.—*Diagnosis.* Hepatitis, with congestion of blood in the entero-portal vessels.—*Treatment.* Bleeding general and local,—calomel et pulv. antimonialis, purgatives, blisters, and neutral salines. Thirteen days' treatment. Discharged.—Five days subsequently *re-admitted.* Purging, black viscid mucus, like bile; pulse 96, soft; tongue and skin natural; pain of the head; extreme debility.—*Diagnosis.* Accumulation of bile. Emetics and mercurial purgatives for three days; great pain then came on in the right side, and hepatitis set in. General and local bleeding, followed by mercurials and blisters, removed the complaint. Sixteen days' treatment. Discharged.—Three months afterwards, *re-admitted,* in a dangerous state of intoxication. Examination the following day: some fulness, and slight elevation at the epigastrium, with pain on pressure; dry cough; severe pain in the left knee; cannot breathe fully; margins of right ribs elevated, puffy, painful on pressure; cannot sleep; some appetite, much thirst, flushes of heat; bowels costive, urine scanty, of a red orange; pulse 100, large and firm; tongue with white fur; skin cool. —*Treatment.* Bleeding general and local, calomel, blisters,

purgatives, and neutral salines. The urine became purulent on the twelfth day, and continued so for nine days; afterwards it became a pale green. Thirty-five days' treatment. Discharged.—Three months afterwards *re-admitted.* Pain in the right side and shoulders, breathes short, cannot sleep, bowels costive, no appetite; tongue furred; pulse quick and small; skin moist; pain in the right hypochondrium, round the umbilicus, in the right iliac region, and darting up to the right shoulder, and between the scapulæ; pain and weakness in the left knee.—*Diagnosis.* Hepatic abscess, and chronic hepatitis.—*Treatment.* General and local bleeding, mercurials, blisters, opiates, and neutral salines. The urine became purulent on the 4th day.—14th day. Discharged.

*Observation.*—Intemperance, hepatic obstructions, and congestion, followed by chronic disease, are the characters of this case; and the same causes will produce similar effects, only modified by the circumstances peculiar to each case.

(155.) Ætat. 22.—Two years in India; tall, thin, fair. Pain in the left side; pain of the shoulders, head, and back. Pulse 90, full; tongue furred; skin hot. Venæsectio ad deliquium. Calomel gr. x. hor. som. omni nocte, et emplast. cantharid. lateri sinistro. Pulv. rhei ℈j. cras.—6th day. Pain in the side continues. Hirud. xviij. part. dol.—8th day. Emplast. cantharid. part. dol. et con. calomel.—10th day. Omit. calomel; ipecac. ℈ij. bis die. Repet. empl. cantharid.—12th day. Lancinating pain in the right side and shoulder, with a sense of heaviness. Con. ipecac. mane; calomel gr. viij. omni nocte.—19th day. Discharged.—Eight days afterwards *re-admitted.* Pain of the right side, anorexia, thirst, frequent scanty yellow dejections, prostration of strength. Pulse 84, soft. Tongue and skin natural; lancinating pain in the right side and shoulder,

with nausea. Calomel ℈ss. bis die. Emplast. cantharid. lateri dextro.—8th day. Pain in the lower angle of the scapula, and under the right short ribs. Con. calomel.—9th day. Ptyalism. Omit. calomel mane, sed con. nocte.—13th day. Emp. cantharid. lateri dextro.—16th day. Ptyalism. Omit. calomel. Hydrarg. cum cretâ ℈j. omni nocte hor. somni.—20th day. Urine turbid. Con.—24th day. Pain in the right side. Hirud. xx. part. dol.—29th day. No ptyalism. Con. hyd. cum cretâ.—35th day. Quite well. Discharged.

*Observation.*—There are several objections to this practice, notwithstanding its ultimate success. First, Leeches should have been freely and repeatedly used on the early admission over the parietes covering the liver, previous to the application of a blister, and most probably a second general bleeding should have been practised. That course would have afforded the opportunity of observing whether additional bleeding was requisite. The delay of leeches till the sixth day, when pain indicated their use, left the disease to make unchecked progress for the intermediate period. The consequences of that error are sufficiently pourtrayed in this case by protracted illness, augmented suffering, and increased risk of life.

(156.) Ætat. 27.—Five years in India; tall, fair, muscular. Three months previously in hospital with hepatic diarrhœa. (Vide Case No. 47.) Pain in the left side and at the epigastrium, headache, giddiness, sleeplessness, some appetite, bowels irregular, urine scanty, thirst, tongue white. Pulse 104, small and soft. Skin cool and damp. Has been drinking very freely.—*Treatment.* Hirud. vj. temp. Tinct. camphor. comp. ʒij. mist. camphor. ℥j. bis die.—3d day. Refused his medicine. Severe headache, vertigo. Pain in the left side under the ribs. Tongue clammy, white. Pulse 96, contracted and hard; skin warm. Has

febrile exacerbations, attended with increased pain of the side, and pulmonary oppression. Countenance pale, anxious, and collapsed. Venæsectio ad deliquium. Hirud. xij. part. dol. Calomel gr. x. horâ somni.—5th day. Better, and urges to be discharged.—Twentieth day after discharge *re-admitted.* Pain in the left side. Bowels open; urine dark and red. Pulse 106, small and soft. Skin moist and cool; tongue furred; debility, restlessness, anorexia. Haust. purgans statim.—2d day. Pain in the left side, extending to the spine, in the hepatic region, with difficulty of breathing. Pulse 98, full and hard; headache; skin warm. Venæsectio ad deliquium. Calomel gr. x. omni nocte.—3d day. Con. hirud. xij. part. dol.—6th day. Pains of the loins, cramps in the toes and fingers. Con.—8th day. Ptyalism, soreness or burning at the epigastrium. Omit. calomel. Hirud. xij. scrob. cord. Transferred for the advantage of a short sea voyage. Pain of the side and hepatic symptoms continue.

*Observation.*—The symptoms developed after excesses, frequently pass off with the use of mild remedies. In this case, we see the pulse recover energy, and indicate bleeding on the third day. Spare diet and confinement, although absolutely necessary to recovery, are greatly disliked by drunken soldiers, and they pray to go out immediately after their pains are relieved; their object is to procure ardent spirits. The early history, compared with that of re-admission, shows that the original hepatic affection had not been cured; and in the second reception reports that disease proved chronic. Chronic cases are more dangerous than acute; hence the entire removal of disease in its early period is the grand end of treatment.

(157.) Ætat. 26.—Tall, strong, muscular; intemperate and irregular habits. Seven months resident in India. Tenderness at the epigastrium; abdominal pain and sore-

ness; muco-sanguineous purging. Pulse 80, full and large; tongue furred; skin moist; no appetite; bitter taste. *Treatment.*—General bleeding; two scruple doses of ipecacuanha daily; half scruple of calomel at bedtime, and blisters. After twelve days' treatment, discharged. Twenty-three days afterwards, *re-admitted*, with hepatic diarrhœa. General bleeding, and leeches around the anus; scruple doses of ipecacuan. After six days' treatment, discharged. Thirty-nine days afterwards, *re-admitted*, from intoxication; discharged in four days. One month afterwards, *re-admitted*, from effects of intemperance. After eight days' treatment, discharged. One month subsequently, *re-admitted*, with hepatitis. Pain in the right side, with difficulty of breathing; no appetite; bowels irregular; urine red and scanty. Pulse 120, a little hard; tongue furred; skin hot and dry. *Treatment.*—General and local bleeding. Calomel, purgatives, blisters, and neutral salines. Forty-three days' treatment. Discharged.

*Observation.*—The urine became turbid and purulent after the fourth day's treatment; continued so for two days, and in the course of treatment again became purulent, from time to time. The consequences of intemperance, entero-portal congestion, with tendency to intestinal disease, and the ultimate accession of hepatitis, are prominent points for reflection in this case.

(158.) Ætat. 20.—Three years in India. Acute pain in the right hypochondrium, extending to the shoulders. Formerly had hepatitis at the Mount. Pulse full, 90; skin hot; tongue foul; bowels costive. General and local bleeding, mercurials, and purgatives. Twenty-one days' treatment; discharged. Eight days afterwards, *re-admitted.* Pain of the head and at the epigastrium; no appetite; thirst. Pulse 88, large and soft; tongue and skin natural. Three days' treatment; discharged. Two months afterwards, *re-*

*admitted*, after long continued excess in drinking. Pain in the hepatic region. Pulse soft and irregular; skin hot and dry; tongue foul; slight purging; occasional nausea; cannot sleep; heaviness; hands and feet puffed. General and local bleeding, blisters, mercurials, and purgatives. Nine days' treatment; discharged. Six months afterwards, *re-admitted*. Severe pain in the right hepatic region; weakness of the knees; want of sleep; frequent dark fœculent dejections. Pulse 64, large and soft; tongue moist; skin natural. *Diagnosis.*—Hepatic abscess. *Treatment.*—Local bleeding, blisters, alterative mercurials.—2d day. The urine became purulent, and continued so for six days. Ten days' treatment; discharged.

*Observation.*—The accession of intestinal disease is well marked in the present instance, as a consequence of liver derangement. This, and many, (if not all,) of the other chronic cases serve to shew clearly that a healthy condition can only be re-produced by removing the existing engorgement, and the tendency to that condition of the portal system of vessels, both hepatic and abdominal. The well marked connexion of excesses in drinking with hepatic disease, and again that of hepatic with intestinal disease, is extremely obvious in this case.

(159.) Ætat. 30.—Middle stature, muscular. Pain across the epigastric region, and of the head; nausea; giddiness; flushes of fever, and cold sweats. Pulse firm, small, 110; skin warm; tongue clean; appetite bad; sleeps. Antimonial emetics, mercurials, purgatives, large doses of ipecacuanha, and after nine days' treatment, discharged. Two months afterwards, *re-admitted*, with gonorrhœa. Seventeen days' treatment; discharged. Seven months afterwards, *re-admitted*, from the effects of intemperance. After three days' treatment, discharged at his own request. One month afterwards, *re-admitted*. Tenesmus, with griping; frequent

muco-sanguineous dejections. Pulse 88, soft; tongue white, nearly dry; some appetite; great thirst. Ill six days. *Diagnosis.* — Hepatic dysentery. *Treatment.* — Leeches around the anus; calomel, with antimony, at night, and ol. ricini, mane. Two days' treatment. The urine became extremely purulent, perfectly opaque and green. That state continued five days, and the patient, after eight days' treatment, requested to be discharged.

(160.) Ætat. 22.—Two years in India. Pain of the right side these three weeks. Purged for three days; cannot sleep. Pulse 92, full; tongue furred, and red; skin cool. Pain on pressure over the descending colon; tension and soreness in the hepatic region. General and local bleeding, large doses of ipecacuanha, blisters, and pil. hydrarg. Nine days' treatment, discharged. *Re-admitted*, six months afterwards. Pain and sense of burning in the right hypochondrium, felt occasionally these two months, for which he took at times calomel at night, and a purgative in the morning, which gave relief. Observed blood and mucus in his dejections yesterday; cannot sleep; skin warm, moist. Pulse 112, small, soft; tongue furred. Hirud. part. dol. et circum anum. Mercurial alteratives, ol. ricini, and blisters. The urine became purulent on the third, and continued so for several days, but not exactly in succession. Twenty-three days' treatment, discharged.

*Observation.*—In this case, suppuration of the liver was indicated by the patient's state and symptoms on the last admission.

(161.) Ætat. 28.—Four years in India. Tall, healthy, dark, muscular. Pains of the left arm, and of the thorax in breathing; pain of the head. Pulse 98, full, strong, a little hard. Tongue excited; skin hot; no appetite; bowels regular; restless. *Diagnosis.*—Hepatitis. *Treatment.*—

Bleeding, general and local; mercurials; purgatives; counter-irritants, and large doses of ipecacuan. Fifteen days' treatment, discharged. Forty-five days subsequently, *re-admitted*, after a convulsive fit. Pain in the head, shoulder, and right side; enlargement in the right hypochondrium. *Treatment.*—Bleeding, general and local; calomel, and blisters. The swelling at the epigastrium enlarged, with a sense of burning and stinging; much pain in the clavicle. The urine became turbid and purulent. Setons being employed, after seventy-five days' treatment, became quite well. Discharged.

*Observation.*—This individual is now a healthy, serviceable man, having partly abandoned his habits of intemperance.

(162.) Ætat. 19.—Seven months in India. Very muscular and healthy; middle stature. Pain of the bowels; nausea, and loss of appetite. Calomel gr. vj. hora somni. Pulv. jalapæ comp. ʒj. mane. After three days' treatment, discharged. Forty-nine days afterwards, *re-admitted*, with pain in the left hypochondrium; enlargement, and pain of the liver; irregularity of bowels; no appetite; cannot sleep. Pulse 100, very large and strong; tongue furred in lines; pain in breathing, also felt in the hip, groin, and thigh; cannot stand firm on the left foot; little urine. General and local bleeding; blisters; free use of calomel and purgatives. After twenty-five days' treatment, discharged.

*Observation.*—This being a very muscular man, four general bleedings were required. Half a scruple, or fifteen grains of calomel were given every night till the symptoms were relieved. Free ptyalism was not excited. Subsequently re-admitted twice, with hepatic diarrhœa. (Case No. 39.)

(163.) Ætat. 29.—Two years in India. Thin, muscular.

Subject to pain in the right side since arrival in India. Now ill six days, with abdominal pain and swelling; also pain of the side; frequent dejections, chiefly mucus. General bleeding; leeches around the anus; calomel; purgatives, and a blister. After ten days' treatment, discharged. Eleven days subsequently, *re-admitted*, with hepatic dysentery. Pain over the right hip, and in the side. Mucosanguineous dejections. Pulse large, 90; tongue and skin natural. Antimonials; mercurials; leeches; large doses of ipecacuan.; general bleeding, and blisters. After twenty-six days' treatment, discharged. Twenty-two days afterwards, complained of pain of the right side; cannot sleep; no appetite. Urine dark and scanty; pulse 81, large and full; tongue furred with irregular patches; skin natural. Large doses of ipecacuan., general bleeding, mercurials, and a blister. After twenty-three days' treatment, discharged.

*Observation.*—Hepatic obstruction and engorgement produced congestion of the entero-portal system, and intestinal disease: the complaint ceased when the causes were removed. Re-admitted with ephemeral fever (Case 23,) and subsequently with chronic hepatitis. (Case No. 208.)

(164.) Ætat. 23.—Two years resident in India. Has suffered from bowel and liver complaints. Tall, thin, and pale. Anorexia; no pain, but very weak. Ipecacuanha ℈ij. 11a. horâ sine bibendo, om. die.—4th day. Quite well. Discharged. Six months subsequently, *re-admitted.* Pain in the right side; bowels irregular; urine red and scanty. Pulse 108, small and hard; skin warm; tongue furred and dry, margins red; lips parched; great thirst; pain on pressure in the hypochondriac regions; breathing hurried; short cough. Bleeding, general and local; calomel; purgatives; blisters, and neutral salines; and after forty-two days' treatment, quite well. Discharged.

*Observation.*—This case seems to have commenced by congestion of blood in the abdomino-portal system, which led on to hepatitis.

(165.) Ætat. 46.—Twenty-five years resident in India. Severe pain in the left side and loins, that affects his breathing. Can rest only on the right side these last four days; sense of fulness and heaviness at the epigastrium. Pulse 108, soft; skin cool; tongue white; bowels regular, urine scanty and red; occasional cramps of the legs. Has been drinking the last four days, in the hope of curing these pains.—*Diagnosis.* Inflammation of the inferior and posterior portion of the left hepatic lobe. Venæsectio ad deliquium statim; ℥xvi. drawn.—Vespere. Hirud. xij. part. dol. Empl. canth. hor. somi. Calomel gr. viij. omni nocte.—2d day. Thirst, nausea, cramps in the lower extremities, countenance collapsed, less pain in the back, side, and chest. Calomel et pulv. ant. āā gr. v. bis die.—4th day. Improving. Capiat cal., &c., nocte.—5th day. Delirium last evening. Pulse 108, small; tongue red and excited; skin warm. Shave the head, and apply cold occasionally. Empl. canth. inter scapul. Con. cal. om. nocte. Ol. ricini ℥ss. om. mane. Mist. feb. ℥iss. ter.—6th day. Better. Con.—7th day. Pulse 100, small and irritable, yet soft. Empl. cantharid. nuchæ. Con.—8th day. Restless, delirious, conjunctiva injected. Pulso 80, thready, and intermits. Omit. cal. Con. alia.—10th day. Improved. Con. ol. ricini.—11th day. Convalescent. An abscess formed, with considerable swelling, and pain in the left leg.—16th day. Health good. Abscess opened.—17th day. Quite well.

*Observation.*—The general bleeding, followed by leeches, reduced the circulating volume of blood sufficiently to admit of the application of a blister with advantage. The metastasis, or transfer of congestion and irritation to the

head, on the fourth and eighth days, marked symptomatic injury of the cerebral membranes. It is uncertain whether this unusual occurrence was due to the effects of mercury on a peculiar constitution, or to a tendency to nervo-bilious congestive fever. However, this case improved from the period metastasis took place, to the lower extremity, and hence the latter seems to have been the true cause.

(166.) Ætat. 26.—One year resident in India. Robust, florid, healthy. Pain of the head and limbs, prostration of strength, abdominal tenderness and fugitive pains, fulness and tenderness in the hepatic region, anorexia. Pulse 86, large and soft. Tongue and skin moist. Bowels costive; urine scanty.—*Diagnosis.* Hepatitis, and congestion of the liver.—*Treatment.* Bleeding general and local, purgatives, mercurials, counter-irritants, and ultimately tonics. After fifty-one days' treatment, discharged. Subsequently *re-admitted* with rheumatism.

(167.) Ætat. 39.—Stout and plethoric; irregular habits; violent pain in the right hypochondrium, shooting inwards; difficulty of breathing, dry cough. Tongue white; bowels costive, urine scanty and red. Eyes yellow, countenance anxious. Pulse 104, contracted and firm.—*Diagnosis.* Congestion of blood in the liver, irritating the diaphragm by pressure and engorgement, and deranging the biliary apparatus. Venæsectio ad deliquium statim; ℥xxxv. drawn. Ol. ricini ℥iss. cras mane. Empl. canth. magnum lat. dol. —Vespere. Cal. et pulv. ant. āā gr. vj. sextis horis.—2d day. Pain of the side better; free bilious dejections. Pulse 110, small and soft; tongue moist; skin warm. Con. calomel et pulv. ant. in pilul.—3d day. Pain in the back and head, lancinating from the epigastrium occasionally to the scapula. Hirud. xxv. regioni epigastricæ. Con. pil.—4th day. Purged; stools bilious; pain of back, head, and loins,

continues. Pulse 100, soft. Emplast. cantharid. regioni epigastricæ.—7th day. Mercurial fœtor, no ptyalism, pain of the back and side. Pulse 100, small and soft. Tongue moist and white; thirst; bowels open; skin warm. Con. pil.—8th day. No change. Emplast. canth. lat. dol. Con. pil.—9th day. Slight ptyalism, pain of the head and back easier; pulse 96, small, soft. Tongue white; skin moist. Con. pil. Ol. ricini ℥ss. pro re natâ.—10th day. Complete ptyalism, no pain, urine clear and copious. Omit. pil. Con. ol. ricini.—12th day. Flushed. Pain in the right side on breathing. Pulse small, 106; tongue moist and white; skin moist; bowels open. Pil. hyd. gr. v. ter die.—14th day. Headache, hectic flush, pain in the hepatic region. Pulse 105, small and hard; urine dark. Con. pil. Emplast. cantharid. lateri dextro.—Vesp. Pain in the liver increased. Hirud. xxx. lat. dextro statim.—21st day. Improving, but hectic. Con. pil.—24th day. Hectic; pains of the shoulder and right side. Pulse 90, small and hard. Con. pil. et ol. Empl. canth. lat. dextro.—27th day. Hectic, and pain in the side. Introduced a seton.—33d day. Nocturnal hectic and sweats. Pulse 120, small and hard. Tongue furred; skin moist; seton runs. Pil. hyd. et ipec. āā gr. v. omni nocte. Mist. salina ter die. Haust. purg. pro re natâ.—55th day. Pain in the head, fulness in the right hypochondrium. Pulse 96, small and hard; startings in sleep. Urine copious, turbid, opaque, purulent. Tongue white and moist; bowels open; seton runs. Hirud. xvj. temporib. Emplast. canth. lat. dex. Con. pil. et ol. ricini.—Eighty days' treatment. Chronic abscess and derangement of the liver distinctly established. Discharged, for the advantage of a sea voyage and return to Europe.

*Observation.*—The depletion should have been repeated the second day, and on the whole, the treatment of this case is extremely defective. Plethoric habits, or individuals

with a pulse full, firm, surging, or small, compressed, wiry, sharp, hard, or jerking, should invariably undergo repeated venesection and copious local bleeding, before the treatment is changed to the use of stimulants, namely, blisters and mercurials. In this case the blister was prematurely applied, and it seems to have favoured the supervention of abscess; the hepatic pain, and compressed small pulse, indicated the repetition of general and local bleeding.—*(Extracted from the Medical Journal of the Penang General Hospital, but the case was not under my care.)*

(168.) Ætat. 32.—Pain in the lower part of the chest, with difficulty of breathing, dry cough, and pain in the shoulders.—*Diagnosis.* Congestion of blood in the liver, with tendency to inflammation. Venæsectio ad ℥xxxij. statim. Calomel gr. x. horâ somni. Blood much cupped. —2d day. Purged, bilious dejections, urine dark and scanty; pulse 88, large and heavy; tongue with a slight fur; skin natural; tension of the thorax, and difficulty of breathing. Venæsectio ad deliquium; ℥xxiv. drawn. Hirud. xxxvj. regioni epigastricæ. Emplast. canth. part. dol. horâ som. Repet. calomel horâ somni. Pulv. jalap. comp. ʒj. mane.—3d day. Breathing relieved; fainted several times. Pulse 90, small and soft. Tongue moist; skin natural; no cough. Repet. calomel horâ somni.—4th day. Dejections bilious, dark. Urine light orange, scanty; blister rose, breathing easy, no cough nor pain in turning or rising. Tongue slightly furred; skin moist; gums tender. Con. calomel. Haust. salinæ nitro-ammon. ℥ij. bis die.—5th day. Urine copious; dejections of a natural colour; no pain nor cough. Pulse 88, soft. Tongue with the mercurial fur; ptyalism and fœtor. Skin natural. Con. haust. salinus. Calomel gr. v. hor. som.—10th day. Quite well. Discharged.

*Observation.*—The frequent and local bleeding relieved

the vascular system from engorgement; and the mercurials, blister, and purgatives, removed the undue determination of blood from the liver and entero-portal system, and equalized the distribution of blood to all the organs of the body. The neutral salines, regimen, and diluents, confirmed the healthy condition, by tranquillizing the vascular system.

(169.) Ætat. 24.—Four years resident in India. Pain in the right side, difficulty of breathing, and constant cough. Tongue excited; skin cold; pulse sharp, 100. Bowels regular.—*Diagnosis.* Hepatitis. Venæsectio statim ad deliquium; post hor. 4r. Ipecac. ℈ij.—Vespere. Hirud. xvj. part. dol. lateris. Emplast. cantharid. hor. somni. Ipecac. et calomel āā gr. ij. ter die.—2d day. Better. Pulse 70, soft; tongue clean; skin cool. Con. pil. nocte maneque.—10th day. Came under my care; cough continues, slight pain of the side; morning pill has been omitted; mouth better. Con. pil. hor. som. Repet. vesicat. lateri. —17th day. Cough, with muco-purulent expectoration. Slight ptyalism. Pulse 72, soft; tongue red and excited; skin natural; hepatic pain. Omit. pil. Hirud. xij. part. dol. lat. Ipecac. gr. vj. ter die.—21st day. Improving. Con.—28th day. No complaint. Pulse 80, soft; sleeps; tongue and skin natural. At his own request (though certainly not recovered, yet) discharged.

*Observation.*—The treatment in this case was defective; the local bleeding, or the copious use of leeches, should have been practised every day, until the hepatic pain, fulness, tension of the thorax, and cough, were removed, and then blisters and mercurials would soon have eradicated the remaining traces of disease.

(170.) Ætat. 23.—Three years resident in India; prone to excesses; pain in the right side, arm, and shoul-

ders; dry cough. Pulse 90, contracted and hard. Skin dry and harsh; tongue foul.—*Diagnosis.* Congestion of blood in the liver, with hepatitis. Venæsectio ad deliquium; ℥xvj. drawn. Pil. hydrarg. sub. gr. ij. nocte.—2d day. Pain decreased. Con. pil. Empl. canth. lateri.—4th day. Had chills and rigor yesterday, with more pain in the shoulder; skin cool. Pulse 70, soft. Con. pil.—7th day. Pain of the side. Hirud. xx. part. dol.—8th day. Came under my care; easier. Pulse 94, soft; tongue cleaning; skin natural; slight cough, and pain in the right shoulder. Repet. hirud. xv. part. dol. Calomel et ant. āā gr. vj. horâ somni, omni nocte.—11th day. Convalescent. Omit. med.—16th. Discharged.

*Observation.*—In this case, local bleeding was improperly omitted in the early period of treatment. Leeches should be largely and repeatedly used, until the disappearance of tension, fulness, cough, and pain, shows that the portal system of vessels is perfectly relieved from congestion.

(171.) Ætat. 28.—Eight years in India. Pain in the epigastrium, shooting into the chest. Skin cool; pulse 60, full; tongue white; bowels regular; constant cough; restless, cannot sleep.—*Diagnosis.* Congestion of blood in the liver, the precursor of hepatitis. Haust. emet. stat. Calomel gr. x. hor. som.—2d day. Restlessness; costive; tongue darker; cough; pulse natural. Ol. ricini stat. Enema purg. meridie. Vesicat. epigastric. Pil. col. comp. gr. vj. om. nocte.—8th day. Came under my care; difficulty of breathing, cough; tongue clean and red; skin warm. Pulse 75, soft, rather large; cannot sleep from stuffing of the chest. Bowels open. Ipecac. gr. vj. pil. ter die. Ol. ricini ℥ss. pro re natâ mane.—12th day. Improving. Ipecac. ʒss. 11a hora om. die. Omit. alia.—17th day. Quite well. Discharged.

*Observation.*—This case shows the efficacy of nauseating and purgative medicines in removing hepatic congestion. This course, nevertheless, is full of risk, and I would, in preference, at the least employ local bleeding, until the cough and pain ceased, then nauseating medicines may suffice for the cure.

(172.) Ætat. 22.—Seven years resident in India. Seized suddenly with acute pain in the right side, and difficulty of breathing; slight cough and fulness in the hepatic region. Pulse soft, 108. Skin cool; tongue clean.—*Diagnosis.* Hepatitis. Hirud. xxiv. part. dol.; admoveatur postea emplast. cantharid. Calomel ℈j. statim. Ipecac. gr. ij., Pil. hydrarg. gr. v. in pil. ij. ter die.—4th day. Cough and difficulty of breathing easier. Pulse 60. Tongue and skin natural.—5th day. Came under my care. —12th day. Continues easy. Pulse, tongue, and skin, good. Ipecac. ℈ij. 12a horâ omni die.—15th. At his own request, discharged.

*Observation.*—This case proves, that in the very early stage of hepatic congestion and inflammation, slight local bleeding, followed by a blister, ipecacuan., occasional purgatives, and alteratives, suffices to remove the symptoms of disease. In similar cases, if the individual continues exposed to the causes that produced the disease, a tendency to that condition remaining in the system, the disease shortly returns; in other words, hepatic derangement is but partially removed by those inefficacious medicines; and hence that mode of treatment exposes the patient to considerable eventual risk.

(173.) Ætat. 29.—Six years resident in India. Pain in the right side and shoulder, nausea, cannot sleep, flushes, and cold sweats; pulse, tongue, and skin, natural.—*Diagnosis.* Derangement of the stomach and biliary apparatus,

with tendency to hepatitis. Calomel gr. x., Ipecac. gr. viij. M. in pil. iv. stat. sumend. Emplast. lyttæ part. dol.—2d day. Better; bowels freely opened; blister rose; no med. —3d day. Fever last evening; slight cough; pulse, tongue, and skin, natural. Ipecac. ʒss. 12a hora om. die.—14th day. Quite well. Discharged.

*Observation.*—Hepatitis was threatened, but not established, in this case; hence the stimulus exerted by the ipecacuan. and calomel over the gastro-intestinal mucous membrane and biliary apparatus, with the stimulant effects of the blister, sufficed to restore health.

(174.) Ætat. 26.—Eight years in India. Constantly subject to pain in the right side and shoulder; now pain, heaviness, and soreness in the liver; numbness of the right arm. Pulse 128, hard; bowels free; tongue clean; skin dry; has been lately drinking.—*Diagnosis.* Congestion of blood in the liver, and incipient hepatitis. Venæsectio ad deliquium; ℥xxx. drawn. Calomel et pulv. ipecac. āā ss. horâ somni.—2d day. Bowels open, dejections natural. Pulse 90, soft; skin warm and dry; tongue clean; thirst. Mist. purgans bis hodie. Emplast. canth. lat. dextro.—4th day. Pulse 84, soft; tongue and skin natural; bowels open. Mist. salinæ ℥iss. ter die.—9th day. Restless, sleepless. Pulse 82, soft; heaviness, tightness of the thorax. Pil. hyd. gr. vj. om. nocte.—14th day. No change. Con. Enter two setons in the side.—28th day. Improving generally but slowly. Pulse 90, small and hard; fulness and tenderness in the hepatic region. Venæsectio ad ℥xij. Con. pil.—30th day. Fulness and tenderness continue; constant cough; pulse 88, small and hard. Tongue excited; skin hot; bowels open, urine copious, some appetite, sleeps badly. Repet. venæsectio ad ℥xij. et con.—33d day. No improvement; pulse 90, compressed and hard; no sleep, restlessness. Skin cool and dry. Repet.

venæsectio ad ℥xij. et con.—37th day. Rather better, but fulness of the chest; a little pain, and some cough remains. Emplast. cantharid. lat. dextro. Con. pil. Transferred from Dr. C. to another surgeon.—44th day. Pulse 78, soft; tongue clean; skin cool; urine free, bowels open; some appetite; pain in the side and shoulder continue. Setons discharge. Con. pil.—59th day. Little change. Emplast. cantharid. lateri dextro. Con. pil.—67th day. No better. Repet. emplast. canth. et con.—74th day. No improvement. Cataplasm. part. dol.—79th day. Dissatisfied with the poultice. Omit. cataplas. Emplast. cantharid. part. dol. Con. pil.—100th day. Fever yesterday, accompanied with headache; passed twelve dark dejections, with several coagula of blood, pain in the side and shoulder continues. Pulse 94, soft; tongue clean; skin cool; ol. ricini ℥j. statim. Ipecac. gr. x. horâ somni.—110th day. Continues the ipecac.; bowels become regular; cough, pain in the chest and side continue. Pulse 84, soft; tongue and skin natural. Empl. picis burgund. part. dol.—120th day. Improves slowly. Ipecac. The plaster and setons continued.—136th day. Improving slowly.—140th day. General health improved. The case, however, is well pronounced chronic hepatic disease. This individual is disorderly in the hospital, and has practised several irregularities, and hence discharged.

*Observation.*—The history of this case proves that hepatic abscess existed at the time of admission. It is, nevertheless, just to add, that the treatment was defective. Leeches should have been repeatedly and freely used, certainly before the application of a blister. Previously to his transfer from my care, the danger became greatly augmented by acute symptoms and cough, indicating an extension of the abscess, that threatened to perforate the diaphragm; which was checked by repeated venesection: this individual ultimately recovered.

(175.) Ætat. 24.—Born in the country. Pain in the right side, and pains in the shoulders and anus; severe pain in right hypochondrium. Pulse 80, soft; skin warm; tongue white; bowels slow. *Diagnosis.*—Hepatitis. Hirud. xviij. p. d. statim, postea fotus. Haust. purg. merid. Vespere. The leeches have bled freely; pain in the side is now extremely acute; some cough. Pulse 96, small and hard. Venæsectio statim ad deliquium, ℥xxxij. drawn.—2d day. Better. Pulse 92, soft; bowels open. Calomel gr. viij. horâ somni. Ol. ricini, mane. ʒiij. Empl. cantharid. p. d. Vesp.—3d day. Fever. Pulse 112, hard and small; thirst; nausea and pains; skin hot and dry. Venæsectio ad deliquium.—4th day. Better. Con. cal.—5th day. Improving. Con.—6th day. Better. Omit. calomel. Pil. hydrarg. gr. vj. omni nocte.—10th day. Quite well. Discharged.

*Observation.*—The symptoms and course of disease in this case are of the ordinary kind. A second general bleeding effectually checked the disease. The reappearance of acute symptoms was due to the excitement of the blister. The treatment throughout was correct, excepting that thirty or forty leeches should have preceded the blister.

(176.) Ætat. 27.—Nine months in India. Constant pain in the right side, which has been, this last month, more severe. Pulse 96, hard and full; tongue white; skin hot and dry; urine high coloured; cannot sleep; no appetite. *Diagnosis.*—Hepatitis. Venæsectio ad deliquium statim, ℥xxiv. drawn. Calomel et ipecac. ā ā gr. v. horâ somni sumend.—2d day. Better. No pain about the shoulders; a little in the right side. Pulse 66, good; tongue and skin natural. Emplast. cantharid. p. d. stat. Pil. hydrarg. gr. vj. hor. som. om. nocte.—6th day. Pain in the side; no other complaint. Insert two setons.—14th day. Pulse 120, small, compressed; tongue has purple points; skin natural.

Venæsectio ad ℥xxiv. 11a. horâ. Con. pil.—20th day. Pain in the right shoulder and arm. Bowels very irregular; pain at the epigastrium, with nausea, and pain in the side. Pulse 80, compressed and firm; skin cool and soft. Con. pil. Venæsectio ad ℥xxiv. statim. Hirud. xij. part. dol. vespere.—22d day. A little improved. Repet. hirud. xij. et pil. hyd. nocte maneque.—23d day. Sleepless, yet relieved by the leeches. Repet. hirud. Calomel gr. viij. Ipecac. gr. vj. horâ somni omni nocte.—25th day. Considerable discharge from the setons; no abdominal pain; dejections dark green and bilio-feculent; some pain of the side. Omit. calomel. Ol. ricini ℥ss. pro re natâ. Con. pil. hydrarg. ut antea.—30th day. A little pain of the side; bowels slow; health improving. Con. emplast. canth. part. dol. Transferred from Dr. Conwell to another surgeon.—32d day. Ptyalism. Con.—46th day. Severe pain in the side. Pulse 80, soft; tongue bloodless; skin natural; bowels open; no appetite; restless; sleepless; enlargement of the right side; ptyalism disappeared. The pills lately discontinued. Hirud. vj. part. dol. Vespere. Pain increased. Hirud. xxv. part. dol. et emplast. cantharid. horâ somni.—48th day. Pulse 100, full and soft; bowels slow; tongue bloodless; skin warm. Cal. gr. vj. om. nocte. Con. ol. pro re natâ—51st day. Great pain over the left eye, and in the side. Hirud. vj. fronti. Empl. cantharid. lat. dextro. Con. med.—59th day. Not so well. Pain of the side increased. Pulse 82, soft; tongue and skin as before; bowels open. Con. emplast. canth. part. dol.—66th day. Considerable enlargement in the right side, with soreness, feverishness, and irritability. Cataplasm. mag. tertiis horis lat. dextro. Flannel clothing.—80th day. Blue pill, continued at night, and the poultice, has afforded considerable relief. The same hepatic state continues. The side is painful. Hirud. iv. part. dol. Con.—90th day. No improvement, yet not worse. Con. pil. Admov. emplast. canth. lat. dex. Fu-

gitive pains in the shoulders, anus, thorax, the region of the heart, and the lower extremities, are complained of from time to time.—100th day. Bowels open; pulse 74, soft; tongue brown; skin warm and soft. Pains and general state as before. Liniment has been used, and alleviated the pains. Con.—110th day. Pain of the side has occasionally increased, and was checked by leeches; little change. Con.—120th day. Very little change; pain increased to-day. Repet. hirud. viij. part. dol. et pro re natâ.—124th day. Great oppression at the epigastrium; respiration laborious, and he appeared to be dying. Vol. alkali and stimuli given. Flatus was extricated from the stomach, and he got relief.—127th day. Very weakly; no improvement. Pulv. rhei ℈j. Mag. carb. ℈ij. M. pro re natâ. Omit. alia.—132d day. Hirud. x. epigast. postea bal. calid.—152d day. Pain at the epigastrium. Emplast. lyttæ part. dol. Con. med.—155th day. More pain in the shoulder. Hirud. v. lat. dextro. Con. med. Ipecac. gr. vj. om. mane.—165th day. No improvement; pain of the side continues. Con. rem. Vesicat. lat. dex. Bal. nitro-muriat. statim cruribus pedibusque om. die.—175th day. Blister was repeated, and medicines and bath continued. No marked improvement, but looks better. Pain in the side and shoulder as before.—185th day. The remedies continued. Severe cough came on four days since, which was relieved by a general bleeding of ℥x., ten leeches, and a blister. Now he is better.—195th day. Hepatic enlargement, tenderness, and pain continue, with fugitive pains in the shoulders, neck, and extremities. The remedies have been continued, and he is now transferred to the Presidency for the advantage of a change.

*Observation.*—The long, painful, and dangerous course of disease exposed in the history of this case, shows the extreme importance and value of time in the early period of treatment. On the second day, a blister was applied, in the hope that the general bleeding of the preceding day

would have sufficiently prepared the vascular system of the liver for the transfer of local irritation from that organ to the surface. The sequel is positive proof that the blister was prematurely applied, and injurious. The application of forty or fifty leeches in a circle around the trunk, over the parietes covering the liver, should have been made the second day instead of the blister; and the state of the pulse, respiration, pains, &c., would have indicated the extent to which bleeding or leeches should have been repeated on the third day. The exhibition of calomel should only have commenced, and the blister should only have been applied on the third day, after the free use of leeches on the day preceding. (See *general bleeding* and *calomel.*) An improper remedy, or rather a remedy prematurely and improperly applied, as in this case, produces the very consequences which all our efforts are directed to avert.

(177.) Ætat. 31.—Fifteen years resident in India. Subject to constant attacks of liver complaint. Pain in the right side and shoulders, with short cough, these last three days. Tremor from drinking; bowels irregular; skin warm. Pulse 90, contracted. *Diagnosis.*—Hepatitis, with gastric derangement. Venæsectio ad deliquium, ℥xxiv. drawn.—2d day. Pain of the side and tremor continue. Bowels open; skin cool; tongue excited. Pulse 86, soft. Empl. lyttæ lateri dextro.—3d day. Slight rigors; skin cool; tongue furred. Pulse 84, small and soft. Cal. et pulv. ant. āā gr. viij. horâ somni om. nocte. Pulv. jalap. comp. ℈ij. statim.—4th day. Better. Con. pil.—5th day. No pain in the side; yesterday had ague, and now it threatens to return. P. cinch. ℥j. statim in mel, et con. pil.—9th day. Quite well. No med.—16th day. Discharged.

*Observation.*—One general bleeding sufficed in this case to prepare the system for the stimulant effects of the blister; hence it appears, that hepatic disease had only commenced,

and was not perfectly established. It is obvious, that some cases of this kind will be successful; but much care and discrimination are necessary to decide where local bleeding may thus be omitted, without ulterior risk.

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## SECTION XI.

### ABRIDGED CASES OF CHRONIC HEPATITIS.

(178.) ÆTAT. 26.—Middle stature, dark complexion, muscular. Drinks to excess. Had diabetes on his passage to India. Cold perspiration, ushered in fever four days back; headache; nausea; loss of appetite; parchment-like countenance, and some pain about the hypochondrium. Pulse 102, large and soft; tongue a deep creamy fur; skin hot and dry. *Diagnosis.*—Hepatitis supervening on hepatic abscess. General and local bleeding, calomel, et ol. ricini. —3d day. Urine copious, like decoction of cinchona flava, and copiously blended with pus. Local bleeding, calomel, and purgatives, were continued, with a blister. The urine was charged with pus until the twenty-fourth day. Two small general bleedings were employed in addition during that period, and 124 leeches and two blisters were applied. Calomel was continued, but the mouth did not become affected, although the tongue was swollen. The urine became deep straw-coloured, tinged with bile, and again on the twenty-fifth became purulent. The pulse was continually large, and never under 108; pain in the side constant, and was attended by very considerable tumefaction. Two setons were introduced, and the local bleeding, calomel, blisters, and purgatives continued.—30th day. Urine copious, purulent, and opaque. Seized with violent cough

and oppression of the chest. Pulse 134, soft and large. *Diagnosis.*—Hepatic abscess, which has perforated the diaphragm; and the pressure thus made on the lungs and pericardium occasions the large pulse. Con. rem. Tinct. digital. g$^{tt}$. xxv. ter die.—35th day. Expired suddenly; but permission for examination could not be obtained. The urine was copious, purulent, and opaque, to the last.

*Observation.*—The circumstances peculiarly deserving attention in this case are—1st. The connection between excesses and hepatic disease.—2d. The parchment-like countenance.—3d. The removal of hepatic inflammation and congestion by general and local bleeding, &c.—4th. The presence of pus in the urine, and concomitant improvement.—5th. Salivation—of rare occurrence where hepatic abscess exists.—6th. Pulse continues large, either where pressure is made upwards on the heart, laterally on the lungs, or posteriorly on the aorta, especially the first.—7th. Continued appearance of pus in the urine was accompanied by improvement.—8th. Oppression of the chest, and difficulty of breathing, with cough; eventual expectoration, and quickened pulse, mark perforation of the diaphragm. I regret that military arrangements prevented inspection of the morbid appearances. Pressure on the heart, from hydro-pericardium or hydro-thorax, frequently terminates in this sudden manner. There is a question whether or not the pus might have been removed from the thoracic cavity by absorption. I fear not. The pressure on the chest and viscera being removed, and the pus being introduced between the costal and pulmonary pleura, new consequences and relations would result. In similar cases, paracentecis thoracis should neither be forgotten, nor rashly undertaken. In cases where the pus merely enters the pleural cavity, without perforating the pulmonary tissue, the sole resource remaining to the patient, is the having recourse to this operation.

(179.) Ætat. 28.—Three years in India. Middle stature, muscular. Has been for five days drinking, without taking food; was fighting, and has numerous bruises on different parts of the body and head. Pulse 100, large, and very compressible; tongue white, with excited fur on a red surface; skin natural; tremors. *Diagnosis.*—Entero-portal congestion of blood. General and local bleeding; neutral salines and purgatives. After four days' treatment, discharged. *Re-admitted* three months afterwards. Ill this fortnight, from excesses in drinking. Pains in the bones; tenesmus, yet bowels costive; no dejections these three days. Pulse 100, large and soft; tongue white, erectile fur, with a pink spot. Pain in the back these two months; no appetite; cannot sleep; skin warm. *Diagnosis.*—Hepatic disease, and probably abscess, simulating rheumatism. Ol. ricini ℥j. statim, fotus frequenter, calomel et pulv. antimonial āā gr. iv. h. s. Ol. ricini ℥ss. mane. Flannels.—2d day. Bowels better. Severe heavy pain in the back; lancinating under the left breast. Great heaviness of the body; dulness and pain of the right shoulder and arm; easiest when resting on the left side. Pulse 80, very large and soft; tongue pink; skin natural. *Diagnosis.*—Hepatic disease, most probably abscess. General and local bleeding; neutral salines; calomel et ipecac. h. s. Ol. ricini et fotus pro re natâ.—3d day. Pain of the back more severe and distinct. Hirud xxvj. part. dol. Con. rem.—4th day. Pains in the calves of the legs, and cramps. Urine like decoction cinchonæ. Con. hirud. et remed.—7th day. Not well, yet better. At his urgent desire, discharged. *Re-admitted* fifteen days afterwards. Severe pain in the right side and shoulder; pains generally throughout the body and limbs; headache; giddiness; bowels irregular. Pulse 68, small and soft; skin natural; tongue furred. He is constantly drinking to excess, and just now under the influence of liquor.—2d day. Bowels open. Pulse 72, soft;

tongue presents a white fur, in large clusters; skin natural; great thirst; tremors, from intemperance. Neutral salines. —3d day. Severe pains in the right shoulder. Hirud. xij. circum anum statim. Emplast. cantharid. lateri dextro vespere. Con. med.—5th day. Pain of the knee, shoulder, and right arm. Calomel et ipecac. āā gr. iij. om. nocte.—6th day. Urine like decoctum cinchonæ.—7th day. Urine quite opaque.—16th day. Better, and urges to go out. Discharged. *Re-admitted* ten days afterwards. Has been drinking, with little or no intermission. Frequent muco-sanguineous dejections; tenesmus; abdominal pain, and pains throughout the body and limbs. Pulse 86, soft; skin warm and moist; tongue furred. Calomel gr. vj. tart. ant. gr. ss. h. s. Ol. ricini mane. Cataplasma abdomini. Ipecac. gr. ij. secundis horis. After eight days' treatment, at his own desire, discharged. The turbid urine, and clammy skin, during the period of treatment, indicated hepatic abscess. *Re-admitted* twenty-two days afterwards. Abdominal pain; frequent bilio-feculent dejections, with traces of blood; heavy dull pain, and weakness of the loins; pains all over. Pulse 108, very soft; skin cool and clammy; tongue excited, pink, and pale. Suffers from singultus. Was drinking as usual. *Diagnosis.*—Hepatic abscess, with excessive secretion of bile; entero-portal congestion, and intestinal irritation. Hirud. x. circum anum et xiij. reg. hepaticæ. Calomel et pulv. ant. āā gr. viij. h. s. Emplast. canth. scrob. cord.—2d day. Urine like infusum cinchonæ. —3d day. Very ill. Urine like decoctum cinchonæ, and opaque with pus. Con. rem.—5th day. Pus largely blended with the urine; cannot sleep, from pains. Hirud. vj. circum anum et perineo. Con. rem. Vin albæ ℥vj.— 6th day. Urine pale, colourless, and turbid; frequent palpitations. Hirud. iij. circum anum. Con. rem.—7th day. Urine like very dark serum of decomposed blood, a dark red opaque orange, and deposits a little yellow pus. Omit.

pil. cum calomel. Emplast. canth. hypogastrio dextro. Con. hirud. et fotus. Neutral salines.—10th day. Urine like porter, but copious; intestinal functions natural. Con. med. Mist. nitro-ammon. ℥ij. bis die.—11th to 13th day. Urine slightly purulent and stained with bile.—14th day. Right side of the face flushed. Con. rem. Hirudin. vj. circum anum. Calomel ℈ss. hâc nocte. Emplast. cantharid. lateri dextro.—25th day. The urine has been turbid, but dark; and leeches have been repeatedly applied at the anus, when indicated by occasional pains, and by redness of the tongue.—32d day. At his own desire, discharged.—*Re-admitted* ten days afterwards. Abdominal pain on pressure, frequent yellow bilio-feculent dejections, tenesmus, pressure painful over the liver, across the back, opposite the liver, and at the umbilicus; pains of the extremities. Pulse 88, small and soft; tongue pink and pale; skin natural. Hirud. viij. abdomini, et xiij. perineo et circum anum. Fotus frequenter. Ipecacuan. gr. v. 4tis horis. Ol. ricini pro re natâ. Balneum calid. horâ somni. Flannels.—3d day. Hirud. xij. Empl. canth. abdom.—4th day. Occasional cold sweats; lancinating pains at times in the back and in the left shoulder. Con. rem. Hirud. ij. apud anum.—8th day. Remedies continued. Urine copious, turbid. and opaque. The leech-bites over the belly festered, and became extremely sore open ulcers.—14th day. He has improved progressively, and the remedies were omitted in a corresponding ratio: he desires to go out, and is discharged.

*Observation.*—The prominent points for consideration in this case are: 1*st*, the effects of intemperance in producing and maintaining hepatic disease. 2*dly*, The probable influence of the blows received prior to the first admission in causing hepatitis. 3*dly*, The condition of entero-portal congestion, with which he was first admitted. 4*thly*, The tendency of hepatic disease, when combined with con-

gestion of the abdomino-hepatic vessels, to simulate rheumatism. 5*thly*, That pains and cramps of the lower extremities are symptomatic of congestion of blood in the entero-portal vessels. 6*thly*, That local pain from inflammation or congestion, subsequent to the formation of an abscess, requires local bleeding to prevent additional suppuration. 7*thly*, That neutral salines are useful in promoting the passage of pus through the circulation from hepatic abscesses. 8*thly*, The third admission shows the effect of intemperance in maintaining hepatic disease. 9*thly*, The appearance of the urine. 10*thly*, The fourth admission with hepatic disease from intemperance. 11*thly*, The tendency to intestinal disease in liver cases, or where inflammation, obstruction, or congestion of blood, exists in the hepatic distributions of the portal vessels, either state producing a strong tendency to turgescence of the great abdomino-portal vessels; and thence congestion of the entero-portal capillaries (being the opposite extremity of the portal system) must consequently ensue. 12*thly*, A fifth admission with the same disease, aggravated by the continuance of the exciting cause. 13*thly*, The appearance of the urine, diagnostic of hepatic abscess. 14*thly*, A sixth admission with the same disease, reproduced by the same cause. 15*thly*, The connexion between hepatic disease and entero-portal congestion well marked. 16*thly*, The combined symptoms of these united diseases. 17*thly*, The treatment with neutral salines, local bleeding, and laxatives, is directed to remove the pus, and to obviate urgent symptoms.

(180.) Ætat. 20.—Thirteen months in India; short, muscular, previously in hospital (Case No. 62). Costiveness, bowels irregular, urine scanty and red. Pulse 108, soft; tongue foul; skin clammy. Pain in the right side increased on pressure; dry cough. General and local bleed-

ings, mercurials, blisters, and purgatives. After thirty-five days' treatment, discharged.—*Re-admitted* eighteen days afterwards with hepatic symptoms, caused by six days' violent drinking and intemperance. Local bleeding, blisters, mercurials, and purgatives, were used. After twenty-two days' treatment, discharged.—Three years afterwards: severe pain in the right side these last six days, increased by moving, but easy when lying on the right side. Tongue clean; pulse and skin natural. Hirud. xx. p. d. Pulv. jalapæ comp. ʒj. statim.—4th day. Pain on pressure over the liver. Pulse, tongue, and skin, natural. Venæsectio ad ℥xvj.—6th day. Quite well. Discharged.—*Re-admitted* nine months afterwards. Frequent muco-sanguineous dejections, with tenesmus, griping, and pain. Pulse 96; skin warm; tongue furred. Mercurial purgatives.—5th day. Discharged.—*Re-admitted* one month afterwards, with syphilis. After thirteen days' treatment, consisting of local bleeding and applications, purgatives, and pil. hydrarg. gr. v. every night. Discharged.—*Re-admitted* six days afterwards, has been drinking; frequent muco-sanguineous dejections, with griping, these last two days; no appetite, cannot sleep. Pulse 72, large and soft; tongue excited; skin natural; purgatives, and large doses of ipecacuanhæ.—6th day. The urine like decoctum cinchonæ rub., and opaque, with pus. The countenance like old yellow parchment.—16th day. Urine progressively more and more purulent; a large poultice has been applied over the region of the liver and the abdomen for several days.—20th day. Discharged.—*Re-admitted* fifteen days afterwards. Pain of the right shoulder and both arms, also of the lower extremities; giddiness, nausea, loss of appetite. Pulse 80, very soft; tongue furless near the extremity, clammy, posteriorly foul; skin moist, clammy, and cold; aching pains, and cold sweats; cannot sleep.—*Diagnosis.* Hepatic abscess. Flor. sulph. et Nitr. pot. āā ℈j., Mur.

ammon. et pulv. antimon. āā gr. vj. M. horâ somni omni nocte. The urine became turbid the second day, and largely blended with pus on the fourth.—6th day. At his own desire, discharged.

*Re-admitted* thirty-four days afterwards: frequent dark green, bilio-feculent, scanty dejections, with tenesmus, abdominal pain on pressure. Pulse 80, large and soft. Tongue furred, moist; skin natural; cannot sleep; no appetite, much thirst; tenderness over the liver. Forty-four leeches the first, and repeated the second day. Emplast. cantharid. part. dol. vesp. Pulv. cum sulph. &c., ut antea omni mane. Pilul. hydrargyri gr. x., Ipecac. gr. ij. omni nocte. Ol. ricini pro re natâ.—3d day. The urine like decoctum cinchonæ flavæ, and quite opaque.—7th day. Urine continues purulent and opaque; health improving, but a tendency to fulness of the pulse. Con. rem. Hirud. j. apud anum omni die.—12th day. Urine straw-coloured; valetudinarian health re-established, but subject to sudden sweats, accompanied by nausea and coldness. Con. vin. rub. ℥vj. omni die.—16th day. At his own desire, discharged.—*Re-admitted* six days afterwards; frequent muco-sanguineous dejections, with abdominal tenderness, and pain on pressure, pain in the right shoulder and in the hepatic region; loss of strength; no appetite; cannot sleep. Pulse 86, inclined to hard. Tongue furred, yellow; skin natural; a bruised pain over the shoulders and back of the neck. Hirud. vj. circum anum. Calomel gr. j., Antimon. tart. gr. j. omni nocte. Ipecac. gr. v. ter die. Ol. ricini pro re natâ. Flannels. Fotus frequenter abdomini.—6th day. The urine became turbid, like decoctum cinchonæ flavæ, and opaque. Bowels regular, and general health improved.—10th day. At his own desire, discharged.—This individual was again *re-admitted* with the same symptoms of disease, and again discharged.

*Observation.*—The points especially worthy of remark in

this case are: 1*st*, the tendency of portal hepatic engorgement to produce entero-portal congestion, evidenced by symptoms on the second admission. 2*dly*, The third admission proves the absence of hepatic symptoms at that period. 3*dly*, The fourth admission shows the effects of intemperance in reproducing hepatic disease, entero-portal congestion, and in causing the invasion of intestinal disease. 4*thly*, The return of health keeps pace with the continued presence of pus in the urine. 5*thly*, The fifth admission indicates that he was prematurely discharged. 6*thly*, The return of health is again marked by the presence of pus in the urine; and again the patient is prematurely discharged. 7*thly*, The sixth admission with hepatic dysentery in its early stage shows the intimate connexion that subsists between affections of the liver and of the muco-intestinal surface, or, in other terms, the connexion between congestion, obstruction, irritation, and abscess, in the hepatic ramifications of the portal vessels, and congestion, obstruction, irritation, and ulceration, at their opposite and remote extremities, distributed to the mucous surface of the large intestines. Again, the return of health is preceded by purulent urine. 8*thly*, The seventh admission with incipient hepatic dysentery, the re-appearance of pus in the urine, and again the return of health; these are the principal facts worthy of notice. On the whole, this case is an useful illustration of congestion or obstruction at one extremity of the portal vessels, causing congestion at their opposite extremity; and it evidences the absorption of pus from hepatic abscesses, and its excretion by the kidneys.

(181.) *Ætat.* 22.—Three years in India; under size, slender, fair, prone to intemperance. Admitted with gonorrhœa, and after fifteen days' treatment, discharged.—*Re-admitted* eleven days' subsequently; frequent muco-sanguineous dejections, with tenesmus, abdominal pains, and griping, cannot sleep, appetite bad. Pulse 64, soft;

skin moist; tongue furred; ailing these seven days. Calomel gr. vj., Antimon. tart. gr. j. horâ somni; fotus frequenter. Ol. ricini ℥ss. omni mane. Hirud. viij. circum anum, et xiij. abdomini. Ipec. gr. iv. omni tertia hora.—4th day. Urine like decoctum cinchonæ flavæ, opaque, and turbid, copiously blended with pus.—6th day. Health improving; pulse 88, soft; bowels regular; appetite good. He urgently desires to go out. Discharged.—*Re-admitted* thirteen days afterwards; frequent muco-sanguineous dejections, with tenesmus, griping, and abdominal pain; no sleep; appetite bad. Pulse 60, small and hard; skin dry; tongue furred; ailing ten days. Venæsectio ad ℥viij.; blood cupped. Hirud. xviij. abdomini, et v. circum anum. Ol. ricini ℥ss. mane; Calomel gr. v., Ipec. gr. ij. omni nocte; fotus frequenter.—3d day. Countenance like old parchment, and bloodless. Pulse varies from 120, large and bounding, to small and compressed; skin dry and hot. Hirud. xxxviij. abdomini, et v. circum anum. Emplast. cantharid. vespere, region. hepat. Con. alia rem.—7th day. Urine like stale decoctum cinchonæ. Leeches have been used daily in small numbers around the anus. Ipecac. ℈ij. omni mane. Con. rem. alia.—14th day. Improved; no pain; urine more natural, and deposits less pus. Pulse 62, moderate. Ipecac. ℈ij. omni mane; omit. alia.—21st day. Improving. Calomel gr. ij. omni nocte, et ol. ricini pro re natâ.—28th day. Urine milky; improves.—32d day. Health tolerably good; at his urgent request, discharged.

*Re-admitted* eleven days afterwards. Frequent dark-coloured dejections, with tenesmus and abdominal pain. Blood noticed this morning; soreness and pain along the course of the colon on pressure, pain in the right hepatic region, no sleep, flushes, headache; pulse 112, small; constant nausea; tongue excited; skin moist; has been drinking since his discharge. Decoctum sem. lini pro potu commun. Calomel gr. iv., Ipecac. gr. iij. omni

nocte. Ol. ricini ʒss. mane, et pro re natâ.—3d day. Urine opaque; health improving.—7th day. The urine has continued opaque. Emplast. canth. part. dol. regio. hepat. Con. alia rem.—23d day. The treatment has been varied according to symptoms, and the urine continued purulent for eleven days, which was shown repeatedly to the superintending surgeon (Geo. Adams, Esq.) The health is now good, he urges to go out, and the hospital is crowded. Discharged.—*Re-admitted* ten days afterwards. Frequent muco-sanguineous dejections, with tenesmus, griping, and abdominal pain. Pains of the lumbar and dorsal vertebræ; pulse 80, soft; tongue natural; skin cool; urine free, clear, and yellow; countenance like old parchment. Hirud. ij. circum anum pro re natâ. Calomel gr. x. horâ somni. Oleum ricini ʒss. mane. Fotus ter die.—2d day. Bowels easier; leeches bled freely. Nitr. pot. et flor. sulph. āā ʒss. M. bis die. Omit. calomel et ol. ricini. Con. alia remed.—3d day. Urine turbid. Con. rem. Bal. nitro-muriat. abdomini bis die.—10th day. Discharged.—*Re-admitted* ten days afterwards with the same symptoms. Calomel gr. v., Tart. ant. grss. horâ somni. Ol. ricini ʒss. mane.—2d day. Better.—3d day. Urine like infus. cinchonæ. Pilul. hyd. gr. viij., Ipecac. gr. iij. omni nocte. Ol. ricini pro re natâ.—8th day. Urine copiously blended with pus, and opaque.—10th day. A seton inserted over the liver. The urine dark, like infus. sennæ, but deposits yellow pus; dejections are natural; appetite good; but there is considerable pain in the side. Hirud. ij. omni die apud anum.—24th day. The urine continues largely blended with pus; dejections are natural; appetite good; but there is still considerable pain in the side. Hirud. ij. omni die apud anum.—24th day. The urine continues largely blended with pus, and the general health is improving. Discharged on sick certificate.

*Observation.*—1*st*, There was no complaint of hepatic

disease during his original period of treatment; and very little of mercury was then employed. 2*dly*, He began to pass pus four days after re-admission, having been out of hospital eleven days, of which he was ailing for seven. The fact is, he was engaged in excesses during the eleven days; the purulent urine proved that abscess of the liver had taken place during that period, and the intestinal affection indicated an existing congestion of blood in the entero-portal vessels. 3*dly*, Health progressively improved, with the continued appearance of pus in the urine. 4*thly*, His premature discharge. 5*thly*, Speedy re-admission with entero-portal congestion of blood, being the invasion of hepatic dysentery, and then the general bleeding was only one-third of what it should have been. 6*thly*, The removal of entero-portal congestion by general and local bleeding, calomel, castor oil, and counter-irritants. 7*thly*, The continued presence of pus in the urine, its disappearance and re-appearance under the same treatment. 8*thly*, Premature discharge again, and speedy re-admission with entero-portal congestion of blood from congestion in the hepatic ramifications of the portal vessels. 9*thly*, The re-appearance of pus in the urine, and concomitant improvement.—10*thly*, Premature discharge, and re-admission with entero-portal and hepatic congestion of blood. 11*thly*, The appearance of the countenance, like old parchment. 12*thly*, The sulphur and nitrate of potass less efficient in promoting the excretion of pus by the urine, than neutral salines, especially the kal. prt. neutralized by sulphuric acid. 13*thly*, Speedy re-admission, with a re-appearance and continuance of pus in the urine for sixteen days, accompanied by progressive improvement under medical treatment.

(182.) Ætat. 22.—Two years in India. *Re-admitted.* (See ephemeral bilious fever, Case No. 20.) Severe lan-

cinating pain, of a heavy oppressive character, in the right hepatic region; tenderness to the touch; constant pain in the left shoulder for three days; sleep disturbed by starting; anorexia; debility; heaviness, and sense of fulness; thirst. Pulse 90, large and full; tongue furred; skin moist; bowels regular. Venæsectio ad deliquium; postea hirud. xiij. reg. hepat. Vespere. Emplast. canth. part. dol. Calomel gr. viij. Pulv. antimon. gr. vj. h. s.—2d day. Pulse 104, large and soft; pains easier. Calomel ℈ss. h. s. mist. salin. ℥ij. bis die.—3d day. Pulse 96, soft. Pain in left shoulder and right side on breathing; left shoulder painful. Calomel ℈j. omni nocte.—4th day. Urine like decoctum cinchonæ flavæ, and opaque with purulent deposit. Pulse 96, large and soft. Calomel gr. x. omni nocte.—5th day. Urine quite opaque with copious deposit of pus. No pain, except a little at the epigastrium; occasional cold sweats; mouth tender. Calomel gr. iij. omni nocte. Con. mist.—6th day. Urine opaque; pain increased. Emplast. cantharid. part. dol.—8th day. Urine like dark-coloured oil; profuse sweats; some pain. Hirud. vj. circum anum. Calomel gr. v. h. s. omni nocte. Con. mist.—9th day. Urine purulent. Con.—14th day. The urine continues opaque, with copious purulent deposit. No pain. Calomel gr. iij. omni nocte.—17th day. Slight ptyalism. Improving. Urine opaque. Con.—19th day. Pain in the side. Empl. cantharid. part. dol. Con. rem.—24th day. Urine continues opaque, with very copious deposit; profuse sweats. Pulse 108, very large and soft. Health improves. Omit. calomel. Con. alia rem.—25th day. Urine like blood and water, copious and turbid. Fulness, and pain of the side. Hirud. xij. part. dol. et vj. supra renes. Unguenti albi ℥ss. Ant. tart. ʒj. M., to be rubbed between the leech wounds, and over the hepatic region.—26th day. Pulse 108, small. Pain continues. Urine like brandy, no deposit. Hirud. xij. part. dol.—27th day. Urine turbid and opaque, with

yellow purulent deposit. Pulse 96, natural. Repet. hirud. supra renes. Con. alia rem.—32d day. Urine purulent since last report, now a turbid orange colour. Con.—33d day. Urine like viscid dark oil. Con.—35th day. Urine opaque. Con.—54th day. The urine has continued, and now is, turbid, purulent, opaque, and stained with bile. Health generally good. Pulse 68, natural; tongue and skin natural; wishes to go out. Discharged. *Re-admitted* twenty-two days afterwards. Has been drinking. Pain in the right breast, both shoulders, and the back; tenderness of the hepatic region; startings in sleep. Pulse 94, small, soft; tongue loaded; taste bad; skin warm; bowels regular; debility. Hirud. xxxv. part. dol. statim. Emplast. cantharid. part. dol. vespere. Calomel gr. viij. Antimon. tart. gr. j. h. s.—2d day. Urine opaque, like infus. cinchon. rub. Mist. salina, ℥iss. 4is. horis. Con.—5th day. Urine continues opaque. Omit. calomel. Pil. hydrarg. gr. vj. Antimon. tart. gr. j. om. nocte. Con. mist. salina.—8th day. No pain. Urine milky, copious, and opaque. Pulse, tongue, and skin natural.—11th day. Urine still opaque; health good. At his own request, discharged.

*Observation.*—This re-admission renders it more than probable, that bleeding was not originally practised to the proper extent for the preceding attack of ephemeral bilious fever. The purulent urine, cold sweats, the course of symptoms and effects of treatment, are proofs of hepatic abscess; that condition becoming relieved on the fifty-fourth day of treatment. The re-admission, after twenty-two days, with hepatic symptoms aggravated by intemperance, is an additional proof that hepatic disease is very liable to return, especially after excesses.

(183.) Ætat. 21.—Two years in India; middle stature, fair, muscular. Admitted with bubo. After thirty-eight days' treatment, and when nearly recovered, was suddenly

seized with purging, vomiting, and collapse. Pulse quick and small; tongue clean; skin hot. Venæsectio ad deliquium. Tinct. opii et spts. ammon. aromat. āā $g^{tt}$. xxx. in aquâ statim. Dejections and collapse advancing. Calomel ℈j. Opii gr. ij., given with brandy and water, the latter repeated occasionally. After seventy-three days' treatment, patient recovered, and discharged. *Re-admitted* eight days afterwards, with pains in the right leg and heel, arm and wrist. Bowels slow. Purgatives, liniment, and diet. After thirty-two days' treatment, discharged. *Re-admitted* twenty-eight days afterwards. Cough; pain of the side; oppression in the chest; had acute lancinating pains some days since, now easy. Thorax, on the right, dull on percussion. Pulse 112, dilated and soft; tongue furred, margins red; skin natural; countenance pale, formerly florid; lips livid; urine scanty; no sleep, from pains. Has been drinking. *Diagnosis.*—Chronic pneumonia. Venæsectio ad ℥viij. statim. Emp. cantharid. No. ij., one to each side. Calomel gr. v. omni nocte. Ipecac. ℈j. om. mane.—2d day. Pain less severe in turning on bed; easiest on left side; pain first came on in both heels, subsequently in the back. The diagnosis is incorrect; the disease is hepatic.—5th day. Superintending surgeon Cuddy remarked, whilst inspecting this patient, that putting out the tongue produced an intermission of the pulse as often as the act was repeated. In similar cases, intermission of the pulse is frequently produced by mercury: here, in the recumbent posture, it intermits every other beat; in the erect posture, intermission occurs twice in a minute, and every time he puts out his tongue.—7th day. Urine turbid, not quite opaque.—12th day. Urine latterly turbid and opaque; health good. At his own desire, discharged. *Re-admitted* seven days afterwards, with frequent muco-sanguineous dejections; tormina; tenesmus; debility; sleeplessness; anorexia, and thirst, which came on the day after his discharge. Pulse 104, full

and soft; tongue furred; skin natural. Calomel gr. viij. Antimon. tart. gr. j. om. nocte. Ol. ricini ℥ss. omni mane. Fotus frequenter.—2d day. Pulse 120, large and firm. Venæsectio ad deliquium. Con. rem.—3d day. Hirud. xxv. abdomini et v. circum anum. Con. pilul. h. s. Ipec. ʒj. omni mane.—4th day. Hirud. iv. circum anum. Con. med.—5th day. Hirud. viij. circum anum. Con. med.—6th day. Improving; mouth tender. Ipecac. gr. v. tertis horis. Con. ol. calomel gr. ij. Ant. tart. gr. ss. omni nocte. Emplast. cantharid. abdominis part. dol.—13th day. Ptyalism.—18th day. Pulse jerks. Venæsectio ad ℥viij. Con.—21st day. Ipecac. gr. v. ter die. Omit. alia.—23d day. Pulse 96, irregular. Hirud. viij. circum anum. Con. —24th day. Repet. hirud. et medicam.—25th day. Con. med.—27th day. Hirud. ij. apud anum. Con. med.—28th day. Pain in the side. Emplast. cantharid. part. dol. Pil. hydrarg. gr. xij., Ipecac. gr. ij. omni nocte. Hirud. ij. apud anum om. die.—32d day. Omit. hirud. Con. med. —35th day. Urine opaque.—39th day. The urine being quite purulent and opaque, yet, at his urgent desire, discharged.

*Observation.*—The invasion of disease took place in the form of cholera, which requires a period of careful after-treatment, to prevent the establishment of congestion. The pains of second admission resulted from congestion; and general, with local bleeding would have cured the complaint safely and promptly, by removing its cause. The third admission was hepatic congestion, simulating chronic pneumonia, and was detected the second day. The treatment by calomel and ipecac. removed urgent symptoms in twelve days. The fourth admission shows that general and local bleeding, with other means, having removed congestion and vascular disturbance, then the urine became purulent and opaque, and health progressively improved. Briefly, hepatic congestion terminated in abscess; and

when the reduction of engorgement and swelling permitted the hepatic vessels to dilate, pus was admitted through them into the circulation, excreted by the kidneys, and discharged with the urine.

(184.) Ætat. 35.—Six times in India, and now nine months in the country. Healthy, and brought up to a sea life. Twenty-two days back, seized with headache; vomiting; pain of the right side; sometimes easy two or three hours, then a violent burning heat is diffused over the surface, followed by perspiration. Seven days back, says he was bled to the extent of ℥xl. Now prostration of strength; frequent rigors; no appetite; constant nausea, and sometimes vomiting. Bowels open; urine red, and very scanty; pain of the head lately decreased; pain of the left side, and soreness in the hepatic region continue. Pain is also referred to the spleen, and there is a considerable soft swelling in the left hypochondriac region, with fulness and softness at the epigastrium. Pulse 108, small, soft, and feeble; skin cold and clammy; tongue slightly furred; bedridden. *Diagnosis.*—Hepatic abscess. Spoon diet. Red wine ℥ij. in sago. Decoct. lini semin. ad libitum. Pil. hydrargyri gr. x. bis die. Ol. ricini ℥ss. statim, et emplast. cantharid. regioni epigastricæ, pro re natâ. Fowl soup, and sago pudding.—10th day. Great debility. Pulse 112, small, soft, and weak; mouth and gums much swollen; saliva flowing. Emplast. cantharid. lateri dextro. Two setons in the left side. Nitr. potasse ℈j., Mur. ammon. gr. xij., Aquæ ℥ij. M. bis die. Calomel gr. ij. Extracti col. comp. gr. v. M. semel vel bis die.—12th day. Rigors; delirium. Urine red. Pulse 160, thready. Con.—15th day. Several tarry dejections. His mind clear at times. He thought the abscess burst in the night. The swelling is now less; the face is of a peculiar bright copper colour, dry and withered. Pulse 140, soft and small, feeble; tongue pre-

sents the mercurial fur; skin hot and dry. Feels extremely weak. The swelling in the hypochondrium is lobular, one being superior to the other. Sulph. quininæ gr. iij. in pilula bis die. Vini rub. ℥viij.—18th day. His appearance, and characters of the pulse have improved; continued delirium; extremities paralyzed; tarry bilious dejections; urine pale; the tumor much decreased, and the base more firm. Medical treatment confined to an occasional enema, and to milk and fruit diet.—21st day. The pulse 90, volume soft and natural; tongue and mouth very sore, and swollen; skin moist; setons discharging; urine free and turbid; dejections numerous, copious, tarry, bilio-feculent, and seem also to contain a considerable quantity of pus. Con. regim. Decoct. sem. lini ad libitum.—31st day. Has been unable to speak for several days, but on the whole he is not worse. Takes milk only, and a little opening medicine from time to time.—34th day. Urine like ale, and very turbid; speaks a little, and is stronger and better.—60th day. He is acquiring strength, notwithstanding the continued existence of hectic; and the hepatic tumour remains, but decreased. —75th day. Pulse 86, force and volume natural; tumor decreases; urine generally a little turbid; hectic remains. —90th day. Still weak, and cannot walk, but generally improving.—105th day. Improving generally; knees only weak.—130th day. At his own request, discharged. The hepatic tumor decreasing, and the general health improving.

*Observation.*—This individual repeatedly urged me to open the abscess, but it was deep seated, and I have never seen very deep incisions terminate favourably; hence I chose not to operate. I have observed mostly a successful issue in those cases of hepatic abscess conducted with care, and a prudent reserve from the knife, whilst the cyst is deep seated. I would only cut where the abscess had made some way towards the surface, and then neither rashly nor deeply.

In a case similar to the present, I would make an incision over the abscess so deep, that the contents would be enabled to cause a partial elevation at the bottom of the incision, as has been suggested by Dr. Graves, of Dublin.

(185.) Ætat. 25.—Two years in India. Healthy and muscular. Bowels irregular these ten days, now sero-sanguineous; purging, with tenesmus. Pulse 110, large, full, and hard; skin hot and dry; tongue pale, furred; urine scanty, and red; cannot sleep; thirst; restless. Venæsectio ad ℥xx. statim. Large doses of ipecacuanha in the day, and of calomel at bedtime. General bleeding repeated; leeches not procurable. After ten days' treatment, much improved, but the urine remained dark and scanty.—20th day. General health improving. Alterative treatment, with ipecacuanha.—30th day. Cramps in the lower extremities, and urine dark. After fifty-one days' treatment, discharged. Nineteen days afterwards, *re-admitted.* Hepatic dysentery. Constant headache. Pulse 66, very soft and irregular; skin hot; night sweats; muco-sanguineous purging, with tenesmus; abdominal pain; urine dark; some pain in the right shoulder at times. *Diagnosis.*—Hepatic abscess, and dysentery. Calomel at bed-time; large doses of ipecacuan. in the day; leeches around the anus daily, and fomentations constantly. Seventeen days' treatment, discharged. *Re-admitted* five days afterwards. Hectic at night; copious sweats; cannot sleep; belly puffed; dejections muco-sanguineous and bilio-feculent; no pain. Pulse 96, large and soft; tongue and skin natural; urine scanty, clear. *Diagnosis.*—Hepatic abscess. Small general bleeding, and leeches around the anus; mercurials, and occasionally ol. ricini; neutral salines, and large doses of ipecacuanha occasionally. Pain and soreness in the left lobe of the liver came on, with increased dysenteric symptoms, after the twentieth day's treatment, apparently from the use of animal

food. Regimen was again enjoined; leeches and blisters, with large doses of ipecac. used, and flannels constantly worn.—30th day. Improving. Urine pale and purulent. —40th day. Improving.—50th day. Uses linseed tea. Gastro-intestinal functions natural. — 51st day. Severe pain in the left side of the thorax, for which leeches and a blister were employed. — 56th day. Discharged by transfer.

*Observation.*—This was a chronic hepatic case, and the disease of the gastro-intestinal mucous membranes occurred from the congestion communicated to the entero-portal system of vessels by obstruction in their hepatic extremities. Moreover, it appears that the pulmonary mucous surface very frequently assumes a morbid action in these cases; and then, when any one of the three parts becomes subjected to a greater degree of suffering, the other two are relieved.

Re-admitted again fifteen days afterwards. Rheumatic pains all over. Countenance pale and puffed; tremulous, from hard drinking; giddiness; deadness of the limbs and body; no strength. Pulse 94, large and soft; tongue and skin moist. *Treatment.*—General bleeding; blisters very repeatedly; mercurials, and ol. ricini.—16th day. The urine became quite opaque, like stale decoctum cinchonæ, and changed next day to the appearance of equal parts of pus and water. The pulse then rose, and all symptoms of bodily pain soon subsided, except in the hepatic region. Leeches were employed occasionally, with mercurials and ol. ricini, until the fifty-sixth day. Medicines were then decreased, but the urine continued purulent until the sixtieth day. Mercurial alteratives were alternated with small doses of ipecacuan., bitters, and aperients. Setons and blisters were used; and he was discharged after six months' treatment, for the benefit of a sea voyage; a tumour in the

left hypochondrium and hectic still indicating the continued existence of hepatic disease. During the last thirty days' treatment, the urine was frequently coloured green by bile, but it was generally pale and not purulent.

*Observation.*—The exact time when hepatic abscess was formed seems uncertain; but there can be no doubt of its existence at the time of last admission. The absorption of the pus into the circulation, its excretion by the kidneys, and the constant care necessary to conduct those lingering cases to a happy issue, are circumstances claiming particular attention.

(186.) Ætat. 28.—Previously in hospital with dyspepsy. (Case No. 14.) Pain in the back and loins, increased on the right by inspiration; pains in the legs; shooting pains of the right shoulder; continual giddiness; dry cough; soreness of the chest; cannot sleep these twelve months; can only lie easily on the belly; no appetite; some thirst. Pulse 90, large and soft; tongue moist, with irregular sulci; skin natural; fulness, and some softness in the left hypochondrium. *Diagnosis.*--Chronic hepatic abscess. *Treatment.*—Calomel and ipecac., as alteratives to stimulate the hepatic function, and improve that of the gastro-intestinal surface; local bleeding, and ol. ricini, pro re natâ. After sixty-nine days' treatment, discharged.

*Observation.*—At first the urine was very scanty, and of a red orange-colour; after leeches, a blister, and medicine, it increased, and afforded a deposit. The giddiness, cough, and pains remained; want of sleep being very distressing. After ten days' treatment, the urine became like decoctum cinchonæ flavæ. Leeches were applied frequently around the anus, and calomel prescribed freely. The urine became turbid and opaque, as if largely mixed with pus, on the nineteenth day of treatment. Some muco-purulent expectoration and swelling at the epigastrium, notwithstanding the pulse has

been soft, under 100; and four blisters have been used. From the twentieth day, the urine continued either purulent, or resembled decoction of cinchona; and calomel was prescribed daily. Thirtieth day, breath mercurial; slight ptyalism; cough less; a little sleep obtained occasionally; urine purulent. Leeches round the anus, blisters, and mercurials continued. Fortieth day, urine like pus and water. Fiftieth day, urine copious and purulent; expectoration and pains nearly gone. Sixty-ninth day; the blisters were repeatedly used, according to the state of hepatic fulness or pain; leeches were applied over the liver, and more especially around the anus, according to the state of the pulse, and the indication of entero-portal congestion of blood, or of pain in the region of the liver. Mercurials, in small doses, were employed constantly, and ol. ricini occasionally. The general health being too good to admit of the individual's confinement in hospital without injury, he was discharged.

*Re-admitted* sixty-four days afterwards. Pain in the right shoulder, and deep-seated pain in the head; cannot sleep; no appetite; some thirst; bowels regular; urine scanty and red. Pulse 108, small and soft; tongue furred; skin moist and warm. *Treatment.*—Blisters to the side repeatedly, and to the back of the neck; mercurials and purgatives. Little or no amendment took place, until leeches were again employed around the anus, and over the liver. Setons also were very useful, and slight mercurials were continued with advantage. This individual, after a considerable period of treatment, recovered perfectly; and he is now, after several years, a useful man.

*Observation.*—This case shows, that abscess of the liver occasionally remains confined in its cyst for a longer period than might be expected, without producing any very material derangement of health. Those cases are of daily occurrence here; they require to be carefully kept in view,

so that when a new inflammation takes place, it may be immediately checked by depletion and counter-irritants. They recover after a long stage of valetudinarianism, if they are properly managed.

(187.) Ætat. 27.—Ten months resident in India. Constant vomiting and purging; pain in the bowels; alternate chills and flushes. Pulse 120, hard, not large. *Treatment.*—General and local (circum anum) bleeding. Calomel, ol. ricini, and neutral salines. Eleven days' treatment, discharged. *Re-admitted* twenty-nine days afterwards. Was exposed to cold, from which pain in the belly and short breathing came on. Easier in the back and chest when sitting; worse on lying down; pain between the shoulders. Pulse 104, small and soft; tongue swollen, no fur; indented by the teeth. Had constant rigors before admission; bowels costive; little urine; pain at the epigastrium, and of the right side on pressure. *Diagnosis.*—Hepatic disease, probably abscess. *Treatment.*—Local bleeding; blisters; mercurials and ol. ricini occasionally; neutral salines. The countenance rapidly became haggard and sunken; the urine dark, turbid, and copious. Patient obliged to lie on the left side.—9th day. The urine became like milky decoction of cinchona, and next day like decoctum cinchonæ rub., largely blended with pus. This condition of the urine continued till the thirtieth day.—46th day. Discharged at his own request. *Re-admitted*, three days afterwards, from debility, and pain of the right side. Local bleeding; setons; blisters; calomel, and ol. ricini.—15th day. Continued the remedies. Pain in hypochondrium occasionally recurring.—30th day. Urine lately turbid, and hectic has set in.—45th day. Pains in hypogastrium, shooting to the back.—60th day. The urine has been purulent, and the symptoms of active disease have decreased.—75th day. Tenderness in the abdomen, with intestinal

derangement, threatened an attack of dysentery, which has been obviated by leeches, ipecac., and pil. hydrarg.—77th day. Transferred, for the advantages of a change.

*Observation.*—I have no doubt that an abscess of the liver formed in this case previously to the second admission report. It follows hence, that the first period of treatment was not well conducted. After free general and local bleeding, counter-irritants and a regular period of mercurial ptyalism should have been carefully employed. The practice formerly was erroneous in the adoption of unnecessarily severe and prolonged mercurial courses: now it has just gone to the opposite extreme. A steady period of ptyalism for sixteen or twenty-one days, after the decline of hepatic symptoms, is the best security against the ravages of this disease.

(188.) Ætat. 21.—Two years in India. Middle size, fair, muscular. Admitted with syphilitic sores. Treated with purgatives. Pil. hydrarg. gr. v. ter die. Lotio sulph. cupri.—5th day. Discharged. Eleven days subsequently, *re-admitted* with a bubo, said to originate from the former affection. Purgatives; local bleeding; a blister, and mercurial frictions used. After twenty-eight days' treatment, discharged. *Re-admitted* twenty-five days afterwards. Ulcers in the left groin. Pil. hydrarg. gr. v. bis.—5th day. Intestinal disease has been making progress this last week; great pain and anxiety expressed by the countenance, which has become contracted and sharp. Pulse 98, soft and feeble; tongue furred white, its tissue pale; skin natural; no natural fæces these two days; frequent muco-sanguineous dejections; pain at the umbilicus periodically, and always felt from pressure. General and local bleeding; fomentations; calomel et pulv. antimon. āā gr. vj. M. h. s. Suppositorium si opus sit. Flannel clothing.—6th day. Passed several coagula of blood; pulse stronger; less pain. Em-

plast. cantharid. abdomini. Vanæsectio ad deliquium et postea hirudines vj. circum anum. Con. med.—15th day. He has improved, and the intestinal disease, checked by the bleeding, disappeared as the mercurials affected the system.—21st day. Discharged. *Re-admitted* five months afterwards, with severe abdominal pain; frequent muco-sanguineous dejections, no tenesmus; slight griping; appetite good; countenance flushed; sleeps badly; pain of the head. Pulse 60, large and full; skin cool; tongue furred. Ill for the last six days, and was previously drinking to great excess. Calomel ℈ss. at bed-time, and ol. ricini in the morning, to clear the bowels, that the symptoms might become more distinct.—2d day. Pulse 78, large, full, and strong; tongue excited, and furred; skin generally flushed. General and local bleeding. Ipecac. et pil. hydrarg. āā gr. vj. h. s. Ipecac. ℈j. sine bibendo, mane. Flannels; fomentations.—3d day. The pulse became small and firm, with augmented hepatic symptoms. Again, general and local bleeding.—4th day. Hepatic pains more severe; pains of the head, and cold perspiration. Local bleeding.—7th day. Urine turbid and milky. Pulse 60, and vibratory. Local bleeding.—8th day. Urine quite opaque, and largely blended with pus. Pulse stronger and vibrating. Again, hirud. xij. Con. rem. The urine continued perfectly opaque until the eighteenth day, when it assumed the appearance of decoct. cinchonæ for two days, and then again for two days was quite purulent and opaque. —26th day. At his own desire, discharged.

*Observation.*—The prominent points worthy of notice are,—1*st*, That the individual's first introduction to the hospital was for slight disorder.—2*dly*, That the intestinal disease was originally congestion of the entero-portal vessels.—3*dly*, The disappearance of intestinal disease, as the mercury affected the system.—4*thly*, The invasion of hepatic symptoms; the congestion having been transferred to the

portal vessels on being removed from the intestines.—*5thly*, The separation of pus with the urine, showing that abscess had actually taken place in the liver from congestion.

(189.) Ætat. 26.—Four years in India. Middle stature, fair, and pale; of extremely intemperate habits. Pain across the abdomen and small of the back; vomiting; giddiness; nausea, and pain of the head. Pulse 80, soft, and as if emptied each diastole; skin cool; tongue natural; urine scanty, and red. Has been drinking. Calomel gr. v. h. s. Ol. ricini ℥j. mane.—3d day. Pain at the cæcum. Hirud. xxj. part. dol. et fotus frequenter. Mistura nitro-ammoniata, ℥ij. ter.—4th day. Urine like decoctum cinchonæ rub., purulent and opaque. *Diagnosis.*—Hepatic abscess.—5th day. Urine opaque; pain continues. Hirud. xiij. part. dol. Calomel ℈ss. Antimon. tart. gr. j. h. s.—7th day. Hirud. iv. circum anum. Con. rem.—9th day. Urine straw-colour. Omit. calomel gr. v. omni nocte. Con. alia remed. Urine again turbid on the eleventh day, and pain felt extending from the ribs to the cæcum. Hirud. xij. part. dol. Omit. calomel gr. iij. h. s. et sumat tantum gr. ij. Emplast. cantharid. h. s. part. dolent.—14th day. Urine like decoctum cinchonæ rub., and turbid.—17th day. Urine like whey and pus; opaque.—36th day. Discharged; the urine having continued turbid and opaque nearly throughout: the general health tolerably re-established. *Re-admitted* ten days afterwards. Griping pains, preceded by vomiting and cold sweats; enlargement in the hepatic region, with great tenderness, especially at the epigastrium; pain of both shoulders, of the back, and of the knees; no appetite; thirst; cannot sleep. Bowels open; pulse 80, small, full, and inclined to hardness; tongue red, slight fur; skin moist. *Diagnosis.*—Hepatic abscess, and entero-portal congestion. Hirud. xxv. part. dol. postea fotus frequenter. Calomel gr. vj. Antimon. tart. gr. j. h. s. Ol. ricini mane.

—2d day. Urine like infus. digitalis, turbid, dark, and opaque. Pulse 120. Hepatic symptoms more acute. Venæsectio ad ℥xvj. Hirudin. iv. circum anum. Emplast. cantharid. vesp. part. dol. Cont. fotus et pil. c. calomel.—3d day. Little change. Hirud. viij. circum anum. Con. alia.—4th day. Con. hirud. et remedia sed omissione calomel gr. iij.—5th day. Severe pain continues at the cæcum. Hirud. xxv. part. dol. et apud anum. Con. alia remedia.—6th day. Urine nearly opaque. Repet. hirud. iij. Emplast. cantharid. abdomini. Calomel gr. ij. et Ant. tart. gr. j. h. s. —13th day. The urine has continued copious and purulent, like stale infus. cinchonæ rub. The leeches and medicine continued.—15th day. Improving. Omit. calomel. Nitr. potassæ ℈j. et Flor. sulph. ℈ij. M. omni nocte.—23d day. The bowels are regular; appetite good; sleeps well. The urine continues dark and turbid, but has no pus. He requests to go out. Discharged.

*Observation.*—1*st*, When the pulse empties, it is the extreme of softness; and, succeeding to inflammation without bleeding, it is indicative of suppuration having taken place. —2*dly*, The necessity for repeated local bleeding, to prevent the extension of inflammation and suppuration is well illustrated in this case.—3*dly*, The improvement advanced with the continued appearance of pus in the urine.—4*thly*, On the second admission, hepatic abscess was promoting entero-portal congestion, and favouring the invasion of intestinal disease.—5*thly*, After the distinct formation of hepatic abscess, inflammation may be announced in other parts of the gland, that will require modified general and local bleeding, blisters, calomel, &c. to prevent the formation of additional collections of matter.

(190.) Ætat. 25.—Two years in India. Tall and fair. Has been drinking to great excess. Pain in the right side and shoulder, with flatulency; appetite good; sleeps badly.

Pulse full, 82; tongue foul; skin natural. Haust. emet. statim. Haust. purgans mane. Three days' treatment, discharged. *Re-admitted* five months afterwards. Pain and oppression of the chest, with difficulty of breathing; pain in the right shoulder, back, and knees. Two days since, had cramps of the toes; cannot sleep; appetite bad. Pulse 80, soft, volume natural; tongue brown, furred; skin moist and cool. Has been drinking. Haust. emet. stat. Calomel gr. v. h. s. Mist. purg. mane.—2d day. The hepatic symptoms are more distinct. Hirudines xxxvi. part. dol. postea fotus. Pulv. ipecac. gr. viij. ter die. Con. cal. h. s.—3d day. Urine like opaque ale. Emplast. cantharid. part. dol. Con. rem.—7th day. Urine like decoctum cinchonæ rub., flocculent, and opaque.—8th day. Blister repeated. Bal. calid. Calomel ℈j. bis die.—9th day. Urine like brandy. Emplast. cantharid. part. dol. Con. remed.—11th day. Better. Urine like decoctum cin. rub.—12th day. Urine quite opaque, largely blended with pus, and coloured with bile. Omit. calomel. Nitr. potass. ʒss. et Sulphur. sub. ℈ij. bis die.—13th day. Urine a little turbid.—14th to 16th days. Urine only turbid; pain of shoulder increasing. Hirud. iv. circum anum. Calomel gr. x. omni nocte.—17th day. Mouth sore, but no salivation. Urine dark green, and turbid. Calomel gr. iij. omni nocte. Hirud. iij. circum anum. Emplast. canth. reg. hepat.—18th day. Repet. remedia.—19th day. Hirud. vj. circum anum. Con. alia.—20th day. Urine like decoctum cinchonæ, largely blended with pus, and quite opaque.—31st day. The urine has continued mostly purulent. The calomel was decreased, and ultimately omitted. Leeches were employed almost every day, and purgatives occasionally. General health improving.—40th day. The urine has been, and continues turbid, and deeply stained with bile. General health good. Discharged.

*Observation.*—In this case, hepatic abscess resulted from

congestion of blood in the liver; hence, the premonitory symptoms attendant on abscess from inflammation were wanting. Leeches, ipecacuan., counter-irritants, and calomel, were used with advantage to promote the removal of pus from the old cyst, and to prevent the formation of more extensive collections.

(191.) Ætat. 25.—One year in India. Middle size, fair, slender. Admitted complaining of pain in the shoulders, neck, and head. Pulse 92, firm; tongue foul; skin hot. General and local bleeding, blisters, mercurials, and purgatives, were employed. A large swelling took place about the 30th day, a little above the right groin; and on the 35th day, there was a profuse discharge of pus from the intestines. The tumour disappeared, and the health from that period has been improving.—65th day. He came under my care; pain still continues in the right and centre of the liver, generally acute, but sometimes dead and heavy. —66th day. Blister not healed. Pulse 86, soft; tongue slightly furred; skin, bowels, and urine, natural; cannot lie on the left side. Mist. acid. nitr. ter die. Ipecac. ℈j. omni die 11a horâ.—68th day. Pulse 110, small and compressed. Hirud. xij. part. dol. et hirud. iv. om. die sequente part. dol. Con. rem.—78th day. Acute pain in the side. Venæsectio ad ℥xxiv. Emplast. cantharid. part. dol. Con. rem. The practice was afterwards varied through the stages of convalescence according to symptoms; and after six months' treatment, the patient was discharged.

*Observation.—First*, The purulent discharge from the groin was supposed to be from an hepatic abscess, that perforated the fascia, and ran down between the muscles. *Secondly*, The continuance of hepatic congestion of blood, after sixty-five days' active treatment, in which period salivation was excited three times; the general bleeding, however, was rather trivial. *Thirdly*, One general bleeding,

and the frequently repeated application of leeches (sometimes only one), recovered the patient in two months and thirty-five days after he came under my care. This case indicates some important practical points. 1*st*, Salivation, being merely induced, and not maintained for a certain period, although repeated once or twice, does not effectually remove hepatic congestion, obstruction, and tendency to inflammation. 2*dly*, General and local bleeding, with counter-irritants, neutral salines, ol. ricini, and occasional mercurials, will effectually remove chronic hepatic congestion without salivation. 3*dly*, The constantly reiterated use of leeches, and even of one leech, according to the state of the pulse, the tongue, or the feeling of pain, is in these cases the most powerful deobstruent remedy. 4*thly*, Diet, warm flannels, occasional use of ol. ricini, pil. hydrarg., ipecac., and a close room, appear requisite to render the best practice successful.

(192.) Ætat. 25.—Six years in India; middle stature, fair, muscular, and healthy. Suffered severely from fever and bowel complaint at Kamptee formerly; recently a month in hospital with pain in the left side. Now has fever and headache, pains at the cæcum, increased by pressure; bowels costive. Pulse 84, soft; skin moist; tongue clean; urine very scanty and red; face flushed; anorexia; cannot sleep. Haust. purg. statim, et enema purgans post horas duas, si opus sit.—2d, 3d, and 4th days. Bowels very costive. Purgatives, enemas, and leeches, freely used.—5th day. Pain at the epigastrium, increased by pressure. Free general bleeding on that and the succeeding day. Calomel, purgatives, and leeches, were repeatedly and freely used.—32d day. Discharged.

*Observation.*—This case appears to have been entero-portal, combined with hepatic congestion. The purgatives, therefore, afforded very little relief, until venesection was

freely employed. The local pain and fulness gave timely notice that depletion was requisite. General and local bleeding, associated with appropriate auxiliary remedies, effectually removed the complaint in twenty-seven days.

(193.) Ætat. 23.—One year in India. Pain of the head and shoulder, slight cough, difficulty of breathing, cannot sleep, anorexia. Pulse 110, compressed. Tongue foul; skin natural. General and local bleeding, mercurials, purgatives, and blisters.—65th day. Pulse 91, soft; tongue and skin natural. Constant pain in the right side. Thorax deformed by increased convexity, especially on the right; pain in the right shoulder, arm, thigh, and knee. Regimen, blisters, large doses of ipecac., ol. ricini, pro re natâ, and low diet, were used.—86th day. Discharged.

*Observation.* — This case presented hepatic congestion after sixty-five days; a proof that bleeding had not been sufficiently employed in the early period of treatment. The cure was ultimately effected by severe regimen, &c., which decreased the volume of fluids and solids, whilst the blisters removed local irritation, and promoted an equable distribution of the blood to all parts. The ol. ricini prevented evils that might have resulted either from the condition or accumulation of fæces in the intestinal canal. The ipec. promoted a free flow of bile, whilst it cleansed and stimulated the mucous crypts and follicles of the gastro-intestinal tube, re-established healthy action of the capillary system, and thereby materially contributed to the restoration of health.

(194.) Ætat. 21.—Two years in India. Weakness; skin cold and clammy; pain of the back and under the false ribs, especially on the right; the arms sore and heavy; easily tires, and cannot apply to, or do, any thing. Pulse

64, round and soft, with a tendency to rebound. Tongue presents a series of irregular large sulci, (these sulci are the indications of former intestinal disease, and this individual suffered from fever for five weeks in Europe, that disease, doubtless, being then formed.) Little appetite, much thirst, cannot sleep, countenance haggard, and expresses pain.—*Treatment.* Small general and local bleedings, blisters, pilul. hydrarg., two scruple doses of ipecacuanhæ every morning.—8th day. Much improved; the ipecac. does not vomit, but passes downwards. Pulse 68, good; tongue natural, the sulci having acquired fur; no pain; sleeps; the urine has not been purulent.—11th day. At his own desire, discharged.—*Re-admitted* six months afterwards. Weakness, pain, soreness and heaviness in the belly, aggravated by pressure over the liver; has been ailing a week. Pulse 60, soft; tongue moist, traversed by sulci; skin natural; no appetite; cannot sleep; cold sweats; shortness of breathing. A blister, large doses of ipecac. in the morning, calomel at bed time, and ol. ricini occasionally, formed the treatment.—6th day. Discharged.

*Observation.*—This case may have been an abscess of the liver, or possibly a passive state of engorgement: but the former seems more probable. The contents of hepatic abscesses, especially if they are small, frequently remain confined in their cyst for a very considerable period, and most probably often pass with the urine unnoticed.

(195.) Ætat. 31.—Eight years in India; fair hair, muscular, middle stature, married. Had hepatitis and dysentery several times. When doing duty as sentinel, was exposed to the wet, and acquired pain in the bowels and of the right side; pain in the right shoulder and arm; bowels costive; no sleep; no appetite; thirst; pulse 92, large, strong, full, and heavy; tongue covered by erectile white fur.—*Diagnosis.* Congestion of blood in the liver,

produced by deranged circulation from cold. Venæsectio ad deliquium; hirudines xxx. part. dol. lateris; hirud. xx. part. dol. abdom. Calomel ℈ss., Pulv. antimonial. gr. vj. horâ somni. Pulv. jalap. comp. ℈ij. mane. Blisters, purgatives, and mercurials, were freely used.—9th day. A contracted pulse again called for general bleeding. Venæsectio ad ℥xx.—11th day. Pulse again contracted. A general bleeding of eight ounces.—12th day. Ptyalism suddenly came on.—20th day. Says he is very well, but a deadly sallow appearance indicates debility and a very inactive condition of the liver. Omit. rem. Ipecacuan. ℈ij. in mel. om. mane sine bibendo.—21st day. Discharged.—*Re-admitted* six weeks afterwards, with a sprain from an accident, received whilst intoxicated. Five days' treatment. Discharged.—*Re-admitted* three months afterwards. Vomiting and purging from drunkenness; face flushed; pulse 86, surging; tongue foul; skin moist.—*Treatment.* Purgatives and neutral salines. Five days' treatment. Discharged.

*Observation.*—The invasion shows how readily a deranged state of the portal circulation produces serious hepatic symptoms. The active continued treatment, and the subsequent admission reports, show that congestion of the portal system had been effectually removed in the first period of treatment.

(196.) Ætat. 29.—Felt severe pain across the head, attended with fever. General bleeding, purgatives, and a blister, were used. He seemed convalescent for thirteen days; then acute pain was felt in the hepatic region. Calomel occasionally, combined with opium, purgatives, and a second blister, were employed, and he came under my care on the nineteenth day. General emaciation; rigors occur at times, often twice daily, succeeded by copious cold sweats; sharp lancinating pains under the right tenth

and eleventh ribs. Tongue furred white. Pulse 100, small, soft, and feeble. Urine copious, a little turbid.—*Diagnosis.* Hepatic abscess. A seton to be inserted on the right side. Calomel gr. ij. horâ somni omni nocte. Ol. ricini pro re natâ.—12th day. Urine purulent and opaque; the case slightly improved. Blisters and neutral salines were used in addition.—34th day. He continues slowly improving.—65th day. Discharged.

*Observation.*—This case inculcates that we should never risk the patient's life in the hope that one general bleeding may prove sufficient. The condition of disease is congestion or inflammation; and general and local bleeding should be repeated until either state of the vessels is effectually removed.

(197.) Ætat. 22.—Muscular, plethoric, and ruddy. Headache and febrile symptoms required the repeated use of the lancet. The febrile symptoms subsided, but constant vomiting or nausea remained, with griping, and abdominal pains. Frequent serous and mucous dejections. On the 9th day pain at the epigastrium set in, for which he was blistered and used purgatives. He came under my care on the 18th day. Extremities cold and wet, with clammy sweat. Pulse 120, large, soft, and feeble; tongue with slight fur; great debility. Urine pale; cannot sleep. Stomach very irritable, and dejections numerous.—*Diagnosis.* Inflammation and ulcers of the intestinal mucous membrane, deranged liver, and most probably hepatic abscesses.—*Treatment.* Mercurials and opium occasionally; ol. ricini, neutral salines, flannels, fomentations, cataplasm to the abdomen, sago and arrowroot, with wine.—24th day. The urine turbid, like decoctum cinchonæ.—25th day. Urine perfectly opaque and purulent, and continued so till the thirtieth.—36th day. Convalescent. Discharged.

*Observation.*—This gentleman came under my care when

bleeding was no longer prudent. The complaint appears to have been originally congestion of blood in the liver, that terminated in abscess, which was discharged into the hepatic veins, and excreted with the urine. In the course of a few months his health became perfectly re-established. This case adds one to the number in which hepatic abscess took place without any remarkable precursory or concomitant indications; and at the same time it proves, that under a well directed treatment, a happy issue may be generally expected.

(198.) Ætat. 21.—Middle stature, muscular, fair, pale; four years in India. Two and a half years back had dysentery in the Persian Gulf, cured by ptyalism. Since that period was subject to pain in the right side at times, recently aggravated by a fall. The pains extend into the right groin and thigh, and severe pain on bending the knee. Now suffered diarrhœa for several days; dejections vary from green to colourless; urine dark. Pulse 66, languid, natural calibre. Tongue white and moist; skin natural; pain under the ribs on the right, and on pressure, over every part of the liver; also puffiness of the integuments in that part. General and local bleedings, calomel, ol. ricini, blisters, and neutral salines. Ten days' treatment. Discharged.

*Observation.*—This case, on admission, may have been either congestion of blood throughout both distributions of the portal system, or an hepatic abscess. It frequently occurs, that in a case of abscess after depletion, the sufferer experiences transient gleams of apparent health. In those cases, the pus remains for the time as an extraneous body.

(199.) Ætat. 22.—Middle size, slender. Two years in India. Ill three months at Bombay with a pulmonary

complaint. Now twelve days' suffering from exposure to the sun. Fulness, and pains in the right side, with difficulty of breathing. Had pains in the legs a week before he fell ill. Pulse very hard and large, 100, surging. Skin hot and dry; tongue nearly natural. Venæsectio ad ℥xxxij. Blood drawn cupped, and dark. Hirud. xij. part. dol. Calomel gr. vj. horâ somni. Ol. ricini mane. Next day a little easier, but pains worse at times. Rep. venæsectio et hirud. ut heri, postea emplast. cantharid. part. dol. Calomel ℈ss. horâ somni et mane omni die.—3d day. Pulse small and hard; pain easier. Venæsectio ad ℥xxviij. et con.—4th to 7th day. Con. rem. Improving; ptyalism induced.—8th day. Acute symptoms returned. Venæsectio ad ℥xxx. Con. rem. Subsequently the urine became purulent, and the patient improved.—20th day. Quite well. Discharged.

*Observation.*—I apprehend, that the pulmonary complaint this individual experienced at Bombay was in effect an inflammation on the superior convex part of the liver; and that the illness he experienced under my care was the chronic stage of that disease. This case shows the advantages of prompt and repeated depletion, followed by mercurials and counter-irritants.

(200.) Ætat. 32.—Tall and sickly. Ill of dysentery three months and ten days on shore and at sea, and was three times affected with mercury, and thereby relieved during the short periods that he experienced ptyalism. Placed under my care at the end of this time, in a very debilitated state. Pulse 82, large, not full, but surging. Tongue very clean, moist, and presents white elevations; gums sore, cheeks excoriated; skin clammy; appetite improving; urine dark and opaque, with a copious dirty white deposit; frequent bilio-feculent dejections. — *Diagnosis.* Chronic hepatic disease, most probably abscess, and ulcers

on the surface of the large intestines now disposed to heal. ℞. nitrat. potass.; Muriat. amm. et pulv. ipecacuan. āā ℈ss. Calomel gr. iss. M. bis die in mel. sine bibendo.—17th day. The urine has continued purulent for two or three days occasionally. The intestinal functions have become natural, and there is improvement of health generally.—23d day. A tumor has been forming these last three days at the insertion of the left gluteal muscles. I suspect this tumor will transfer the pus from an hepatic abscess; it may, however, be a critical abscess. Discharged to join his ship, with a statement of his case.

*Observation.*—I have seen the pus from an hepatic abscess discharged from the superior part of the thigh, from the scrotum, from the lumbar, from the dorsal, and from the abdominal parietes.

(201.) Ætat. 25.—Eight months in India. Tall, thin, and pale. Constantly ailing with gastro-intestinal affections; pains of the head, shoulders, right side, and limbs; slight cough. He has been salivated twice, also leeched and blistered, but the pains continue. Sleeps; some appetite. Pulse 96, large and soft; tongue slightly furred, moist; bowels open; dejections of a natural colour; urine pale. Pain on pressure over the liver, the cæcum, and course of the colon. Leeches and large doses of ipecacuan. were used. After ten days' treatment, improving. —30th day. Little change.—40th day. Hepatic pains and cough increased; also pains in the back of the neck, and in the legs. Pulse more full and frequent. General and local bleeding repeatedly; blisters; alterative mercurials; ol. ricini, and ipecacuan.—48th day. The urine became quite opaque, like strong decoctum cinchonæ, for three days.—55th day. Urine a dark green, like bile and water.—57th day. Urine again like decoctum cinchonæ, blended largely

with pus. The symptoms all improving, and continued so for two days. Ptyalism set in about the fifty-third day, and the mouth again became healthy on the sixtieth. No pain on pressure over the liver.—70th day. The urine has been opaque occasionally. Ipecac. ol. ricini, and leeches are used from time to time. Three months and twenty-two days' treatment; discharged, quite well.

*Observation.*—There was too much of hepatic congestion originally, and the enlarged and swollen liver caused and suffered too much pressure to admit of the symptoms being sufficiently distinct; but when the treatment had, in some degree, relieved that congested state, the hepatic symptoms were well pronounced. This, and many similar cases, show that congestion of blood in the liver terminates directly in suppuration, without the ordinary symptoms usually marking hepatitis, and preceding hepatic abscess.

(202.) Ætat. 23.—Eighteen months in India. Short, and lean. Three days' pain in the abdomen; and the bowels became constipated. Now, pains in both limbs; headache; sleeplessness; no appetite; thirst. Urine high-coloured; pulse 108, soft; tongue presents a brown fur; skin natural.—*Diagnosis.* Congestion of blood in the liver and kidneys. Free purgatives. The following day, acute pain of the head and temples, with a shooting pain in the right hypochondrium. Slight general and local bleeding. Calomel at bed-time, and ol. ricini in the morning.—7th day. The urine became turbid, like decoctum cinchonæ, and ptyalism set in.—20th day. Discharged. *Re-admitted* six days afterwards, from extreme debility; feverishness; pain of the right side; oppression in breathing. Skin hot; pulse 98, quick and hard; bowels loose, from oil; tongue white, and dry. Local bleeding; mercurials; blisters, and occasional purgatives. After seventy-six days' treatment, transferred.

*Observation.*—This case shows the progress of entero-portal congestion in the production of hepatic disease. On the first admission, the symptoms marked that state, and the gorged system was not evacuated by sufficiently repeated bleeding; but purgatives were principally employed. The disease thus partially checked, ran into abscess, and assumed the chronic form. Frequent bleeding, and the continued use of leeches around the anus, were the means really indicated; and that course of treatment would have effectually removed the disease, if followed by a regulated ptyalism.

(203.) (As certified by ———, Esq., Assist. Surgeon.) —Intermittent fever for three weeks. Treated with three-grain doses of sulph. quininæ every second hour, and used occasional doses of calomel and rhubarb. After fourteen days' treatment, pain in the right hypochondrium came on. Mercurials were then used, but without producing ptyalism, and considerable hepatic enlargement is now observed. Three months from the commencement of this affection, the case fell under my care. He states that he had regular paroxysms of intermittent, either every day, or second day, for the last three months. The liver is extremely enlarged and prominent; some appetite; much thirst; bowels regular; cannot sleep. Pulse 80, soft and small; tongue very clean; skin natural. Pain in the right shoulder; no cough; cannot lie on the left side.—*Diagnosis.* Chronic hepatitis, and most probably abscess. ℞. carbon. potass. ℥j., Aquæ ℔ij., Acidi sulphur. dil. q. s., ut.mist. neut. fuerit. Capiat ℥ij. bis die. Pilul. hydrarg. gr. v. hor. somni, omni nocte.—7th day. The urine became like decoct. cinchonæ.—20th day. Urine clear.—21st day. Urine again purulent, and continued so for six days; it then was clear for one day, and again became purulent.—34th day. The urine has

continued purulent. Two setons inserted, and a poultice applied. Mouth became slightly tender from mercurials.—40th day. General health has improved; the urine is less turbid, and frequently stained with bile. The abdominal enlargement is less, and the countenance clearer.—60th day. Discharged.

*Observation.*—Quinine used to excess, occasions congestion in some of the cavities: in cases of obstruction, its use is objectionable.

(204.) Ætat. 24.—Previously in hospital with a slight cold. Short, fair, and muscular. *Re-admitted.* Pulse 120, hard; tongue and skin natural. Severe pain in the small of the back, and under the ribs on the right, increased by breathing or pressure; short dry cough. Bleeding, general and local; calomel; blisters, purgatives, and neutral salines. About the fifth day, ptyalism came on; the pulse and febrile symptoms lowered; and the urine became like strong infusion of cinchona, and subsequently purulent and opaque. At times, again, it resembled decoctum cum pulv. cinchonæ, being perfectly opaque, and affording a brownish yellow deposit largely; at other times, it was milky and green, from admixture of bile with the pus. The leeches, blisters, &c. were very frequently repeated, and he was transferred to another surgeon, after three months and twenty-five days' treatment.

*Observation.*—The last thirteen days, the urine changed from green and turbid to a grass green, and transparent. The hectic condition became established from the third day, and continued throughout; the pain in the side, and the discolouration of the urine by bile, were also remarkable throughout the period of treatment. The apparent inefficacy of ptyalism, bleeding, counter-irritants, &c. in this case, appears due to the existence of an abscess at the time

of, or very soon after, admission. The acute symptoms existing at that period might have indicated inflammation in other parts of the liver.

(205.) Six months in the Madras general hospital with chronic liver disease. Costive; urine scanty. Pulse 110, very small; tongue clammy; skin cold and damp. Severe constant heavy pain in the right side, increased by breathing, coughing, or motion.—*Diagnosis.* Abscess of the liver. Setons; blisters; flannels; mercurials and diet, modified with the occasional use of wine, were used. The fifth day after admission, the urine became purulent.—30th day. Urine continues purulent and opaque. Cataplasm is used to the enlargement of the right side, and it decreases.—60th day. The urine has varied, at times pale, sometimes like decoctum cinchonæ, at others purulent and opaque; the general health improves.—70th day. Transferred; hepatic disease remaining; and apparently a sea voyage, and transfer to a cold climate, being absolutely necessary to produce recovery.

(206.) Eleven years in India. Admitted into the general hospital, Madras, with chronic dysentery of eleven months' duration, contracted at Bellary. Treated with mercurial alteratives, laxatives, injections, and cretaceous mixtures for two months and twenty-five days; then discharged convalescent. Thirteen days afterwards, he fell under my care. Pulse 90, soft; tongue clammy; skin natural; little appetite; urine scanty; sleeps badly. Mist. carb. potass. cum acid. sulphur. ℥iss. bis vel ter die.—10th day. The urine became like decoct. cinchonæ, and, in two days more, was perfectly opaque and purulent. It continued so for eight days, and the patient rapidly recovered. After forty-one days' treatment, discharged.

*Observation.*—This case was chronic hepatic abscess,

which passed off by the kidneys, as in many other instances.

(207.) Ætat. 26.—Fourteen months in India. Previously in hospital with acute dysentery. (Case No. 96.) Short and muscular. Became sickly in India, with shortness of breath. *Re-admitted.*—Now pain in the right side; rheumatism in the shoulders; restlessness at night. Urine red; bowels regular; little appetite. Pulse 108, soft and small; tongue and skin natural. Twenty-six days' treatment for gastro-intestinal derangement; discharged. *Re-admitted*, twenty-four days afterwards, with epilepsy; the fits preceded by pain of the head and vertigo, with a sense of fulness in the epigastrium, that amounts to suffocation. Pulse 88, soft and full; tongue moist; skin natural. Local bleeding, mercurials, and blisters. After four days' treatment, improved, and transferred.

*Observation.*—This is a case of hepatic derangement, aggravated by intemperance.

(208.) Ætat. 29.—Twelve months in India. Previously in hospital. (Case Nos. 23 and 163.) Short, muscular. Pain in the head; soreness and stiffness of the neck; pains of the arms and thighs; cannot sleep; no appetite; bowels regular; thirst; urine scanty and dark; face flushed. Pulse 96, full; tongue clammy. *Treatment.*—General and local bleeding; calomel, blisters, and purgatives. Fifty-two days' treatment. Discharged.

*Observation.*—In this case, the leeches were always applied to the head. Had the blood been drawn from vessels communicating with the entero-portal system, the complaint would have been removed with more promptness and facility. Pain in the head, and a febrile movement, are well marked symptoms of hepatic congestion.

(209.) Ætat. 20.—Two years in India. Middle size, muscular. Pain in the chest, shoulders, and right side; no appetite; thirst; urine scanty and dark; short dry cough for some months.—*Treatment.* General and local bleeding repeatedly. After the first bleeding (oz. 48), the breathing became more oppressed; the pain extended along the right arm, and pain on pressure in the right hypochondrium was increased. General and local bleedings repeatedly, blisters, calomel, antimonials, and purgatives, were used. After forty days' treatment, discharged.

*Observation.*—In this case, when hepatic congestion was relieved to a certain extent, the liver became more sensible of the existing inflammation, and the symptoms became of a more acute kind; then additional depletion, mercurials, &c. removed the affection.

(210.) Ætat. 17.—Ten months in India. Lymphatic, fair, and pale. Sickly in India. Bowels very slow; constant giddiness in the head; pain about the neck and shoulders, and in the right side; starts from sleep. Has used cathartic pills occasionally.—*Treatment.* Purgative pills; mercurial alteratives, with tartarized antimony; regimen, and blisters. Thirty days' treatment; discharged. *Re-admitted* eight days afterwards. Costiveness, and pain of the right side. Pulse, tongue, and skin natural. Calomel et ol. ricini. Six days' treatment. Discharged.

*Observation.*—Congestion of blood in the portal system of vessels was sufficiently marked in this case to warrant at least local bleeding. In similar cases, it should not be omitted; because the usual penalty of that course is hepatic abscess. Leeches around the anus are most efficient in the after treatment. General bleeding having been premised, leeches should also be freely used over parts suffering pain.

(211.) Ætat. 23.—Five months in India. Middle size,

fair, not very muscular. Healthy. Lately had pains about the shoulders and arms, and occasional slight dry cough. This last fortnight, pains of the right side, about the short ribs, no pain in the back of the neck, legs, or thighs; some pain of the back for several months past, and for which he was twice bled, had leeches applied, and took medicine. Breathing gives pain, which is increased on pressure, in the hepatic region. Pulse 84, soft. Tongue rather white. Skin a little clammy.—*Diagnosis.* Chronic congestion, and probably abscess of the liver.—*Treatment.* Local bleeding repeatedly, blisters, calomel, and neutral salines.—5th day. Urine copious, turbid, and semi-opaque; ptyalism; no pain.—12th day. Urine at times only continues purulent and opaque; ptyalism.—21st day. Discharged.

(212.) Ætat. 20.—Two years in India. Short and thin. Pain in the right shoulder and arm, shortness of breathing, dry cough; nights restless; bowels irregular. Tongue clean; skin clammy. Pulse 98, very soft; pain round the loins, and fulness in the right hypochondrium.—*Diagnosis.* Chronic hepatic disease. Local bleeding repeatedly, calomel, purgatives, and blisters. After twenty-two days' treatment, discharged.

(213.) Ætat. 26.—Two years resident in India. Suffered from dysentery three months since; subsequently suffered constant pain in the right side, increased by breathing, pressure, or motion; appetite and bowels regular. Urine dark; nights restless.—*Treatment.* Local bleeding, blisters, mercurials, and ipecacuanha. Twelve days' treatment. Discharged.

*Observation*—This serves as an additional evidence of the connexion between hepatic and dysenteric disease.

## SECTION XII.

### ABRIDGED CASES OF HEPATIC ABSCESS.

It has long been familiar to the profession, that the pus contained in hepatic, in pulmonary, and other large abscesses, has been removed frequently by some unknown process of nature. In our reasonings on the disappearance of pus from hepatic abscesses, that process was supposed to be effected by absorption. A series of observations since 1824 leads me to believe, that the vessels which traverse the area of hepatic abscess become eroded, and that as the tumid state of that organ subsides, the hepatic veins, relieved from pressure, dilate their openings, leading from the surface of suppuration to the vena cava, and become pervious. The purulent fluid, in many cases, passes gradually through the hepatic veins into the general circulation, and there is little additional disturbance of the circulatory system. If a larger quantity passes suddenly by the erosion of a considerable vessel, it excites collapse, sinking, cold sweats, and faintness. If the vessels conducting the pus into the circulation are smaller, these symptoms are less marked. The pus then becomes excreted from the blood with the urine, and the disease is thus naturally cured. When an hepatic case begins to improve by this process, the urine first assumes the appearance of decoction of cinchona, and is more or less opaque and turbid. In a few days it becomes quite opaque and white, as if blended with cream or pus; and it is frequently stained more or less by bile.

I had the charge of the Penang general hospital in June and July, 1827, and seventeen cases of hepatic abscess were under treatment at the same time. I made minute notes of all those cases, and communicated my remarks

to the medical officers employed with the troops on that service.

I received a letter from the Secretary to the Medical Board, dated the 14th of August, 1828, No. 640, desiring that I would procure from Assistant-Surgeon Geddes his reasons, and whence he derived the opinion he recorded on the urine in hepatic abscess. Mr. Geddes replied, under date 11th of December, 1828, that a condition of the urine resembling decoct. cinchonæ had occurred in two cases, which, after death, presented extensive hepatic abscesses. That he had made two dissections for me where death had occurred from hepatic abscesses, and reference to my journals noticed the urine resembling decoct. cinchonæ, as a diagnostic of existing hepatic abscess. He remarked, that his attention had first been directed to this symptom by myself, and that his own experience had confirmed him in the belief of its diagnostic character.

I acquired my knowledge of this symptom solely from my own habits of daily investigation, observation, and dissection; the following cases, abridged from my journals, are annexed for the reader's consideration.

(214.) Ætat. 39.—Ten years resident in India,—May 18th, 1820. Reports that he recently suffered a severe attack of spasmodic pains in the bowels, which was removed by leeches, calomel, purgatives, emetics, and warm bath. Now complains of severe and heavy pain in the right side, that lancinates from motion, pressure, or full inspiration. Pulse 89, not hard. Skin warm and moist. Tongue sizy, white.—*Diagnosis.* Hepatic disease, and probably abscesses. —*Treatment.* Bleeding, general and local; blisters, mercurials, purgatives, and regimen. He appeared to improve until the 30th day; the dejections then became like coffee, and he expired suddenly on the 31st.

*Dissection* by Mr. Annesley and myself.—A large abscess occupied the centre of the liver, that contained twenty-four ounces of fluid, in part dark and thin, like coffee, with flakes of pus, showing that from long standing it had become decomposed. A second small abscess on the right contained two ounces of healthy pus. No other morbid appearance discovered, except engorged patches of the intestinal mucous surface.

*Observation.*—The contents of the large abscess indicate that it was chronic; most probably it formed in the preceding illness, and the small abscess was formed in the recent attack. Lancinating, spasmodic, and periodical pains, apparently of the intestinal tube, are frequently the principal and prominent symptoms in severe cases of hepatitis. The state of the pulse, of the gastro-intestinal and renal functions, with an accurate examination of the hepatic region, and the history of the case, if made accurately, will always indicate the seat and the extent of congestion or inflammation. This case seems to have originated in congestion of the abdomino-portal system, and (as frequently happens) terminated in hepatic abscess.

(215.) Ætat. 25.—Sepoy, 3d Light Infantry. Admitted 5th of July, 1825. Ill one year at Rangoon with dysentery; skin then became affected with herpes, accompanied by pains of the extremities. Now, cutaneous eruptions, general debility, emaciation, loss of appetite; face bloated; thorax deformed by increased convexity, and sounds dull; difficulty in breathing; belly swells after eating; five or more yellow or dark dejections in twenty-four hours; little sleep from pains and purging.—*Diagnosis.* Thickening and increased vascular action of the gastro-intestinal mucous membrane, with deranged hepatic secretion; absorption of fluid from the thorax in progress.—*Treatment.* Pulv. ipecacuan. gr. iij., Carb. ammon. gr. iv.

M. ter die. Vin. rub. ℥iv. in diem. Curatio ad cutem. In August, the symptoms having changed little, Pilul. hydrarg. et nitrat. potassæ were employed with the ipecacuanha, and the ammon. carb. was omitted. Warm bath, and various topical remedies, were used, and the quantity of wine decreased.—September 3d. Expired.

*Dissection.*—The cerebral surface very vascular, and the mass generally too soft for accurate examination. Gelatinised serum is effused around the theca (externally), from the cauda equina to the fifth cervical vertebra. The spinal pia mater is peculiarly dark, the cord blanched and soft; some vascular engorgement observed on the cord, opposite the last dorsal and first lumbar vertebra. The pleura pulmonalis adheres generally to the pleura costalis, and on being separated, the lungs collapse; colour natural. Heart's tissue pale. The omentum has no fat; intestines pale, small, and feels pulpy. Liver contains an abscess in the right lobe, from which twenty-six ounces of fluid resembling chocolate were drawn off, then four ounces of curdiform matter. The sac is lined by a fleecy whitish yellow membrane, resembling chamois leather, one sixth of an inch in thickness, and in parts cartilaginous; bile flowed freely into the empty sac without any pressure. The remaining hepatic tissue is more dense (carneous), and darker than usual. The gall-bladder large and full, adheres to the colon, and contains bile and pus. The spleen is pale, small, and fleshy. Pancreas natural. Mesenteric glands large and pale. Mucous membrane of the stomach natural, that of the duodenum and jejunum thickened, and the vessels gorged; mucous membrane of the ilium superiorly pale, inferiorly gorged; eighteen lumbrici found in that tube; mucous membrane of the colon and rectum pale.

*Observation.*—The hepatic abscess was formed a long time before the patient came under my care, as the characters of the cyst and of its contents indicate. The intestinal

derangement was the principal indication of hepatic disease. The period of treatment did not afford evidence of the abscess, owing, *first*, to the patient's exhaustion; *secondly*, to the cyst separating the contents effectually from the surrounding parts. This case serves to show the very grave lesions which may exist without manifest symptoms; it is an additional proof of intestinal disease becoming formed by the agency of hepatic derangement, and it shows that pus enters the biliary tubes, traverses that apparatus, and reaches the intestinal tube at times with the bile.

(216.) Ætat. 40. Twenty-five years resident in India. 27th of October, 1826. Griping and dark purging, with tenesmus, attributed to eating oysters. Pulse, quick, soft, and regular. Robust, and had no previous illness in India; passed ascarides for some months, and has usually three dejections every day. Used ol. ricini and submurias hydrargyri. Pilul. aloes comp. and twenty-four leeches on the 29th and 31st of October, to check painful hœmorrhoids. Strangury came on, relieved by fomentations and hot bath. —November 1st. Urine free; bowels loose; no ascarides; hœmorrhoids less painful. Cont. balsam. copaib. g$^{tt}$xxx. bis die.—Nov. 6th. Urine free; no hœmorrhoids; bowels very loose, and passed apparently a piece of the muco-intestinal coat; dejections saffron colour, copious, and watery, with cheesy flakes and masses; no pain. Pulse 86, soft, and regular. Tongue clean and moist. Calomel gr. viij., Ipecac. gr. vj., Opii gr. j. M. ter die. Ol. ricini oz. j. mane.—Nov. 7th. Passed additional membranous pieces, but feels relieved from a sense of weight and pressing down in the rectum. Pulse, tongue, and dejections, as before. Con.—Nov. 9th. Pulse 96, soft; bowels loose, a very large portion of the mucous coat, with several black patches, passed. Con. Hirud. xxiv. ad anum.—10th. Better. Con. med.—16th. Much purged; restless; dejections dark brown, with blood. Pulse 100. Tongue red; counte-

nance anxious. Ten, A.M. Passed per anum a coagulum of blood. Twelve, A.M. Passed a very large quantity of blood, fluid and coagulated; feels relieved, but very weak. Pulse 140, with cold sweats; great thirst. Tongue red and clean. Omit. baln. calid. et ol. ricini. Capiat pilul. sextis horis.—19th. Treatment continued; patient retrograded; passed two feet of tape-worm. Calomel gr. xij. horâ somni, et ol. ricini mane.—20th. Dejections streaked with bile, coffee-coloured, and contained pieces of tape-worm. Pulse 136; singultus; low delirium; restless, but says he is quite well; extremities cold. At seven, P.M., rose without assistance, took a chair, ordered a glass of port wine, and expired in his chair. Throughout, he only complained of pain from the hœmorrhoids, abdominal pressure gave no uneasiness, but there was a great sense of fulness and heaviness about the rectum and neck of the bladder; he had a craving hunger and sense of emptiness constantly; his spirits were good, and he laughed a little before his death at the idea of being in danger.

*Dissection* eleven hours after death.—Some engorgement of the cerebral vessels, spinal canal healthy, vascular engorgemont on the inferior surface of the cord. Thoracic viscera natural. Omentum adheres to the liver on the right, and aids in covering an abscess in the hepatic surface, that contains thin coffee-coloured fluid, with yellow curdiform flakes. The liver is greatly enlarged; it commences at the fifth rib on the left, and at the fourth on the right, its inferior on the right reaches the crest of the ilium. It is composed of a pale cream or mottled cheesy colour, and its organic structure is dense and fatty. Three other considerable abscesses occupy different parts of the hepatic surface. There is a sphacelated opening, an inch in diameter, through the centre of the transverse colon, merely covered by the omentum; the cæcum is thickened, adherent, and perforated by a sphacelated ulcer. Examining the substance of the liver throughout, there are eighteen small

abscesses, mostly about the size of hazel-nuts. The spleen is small and pale, kidneys natural. Mesentery very fat. Pancreas small and dark from congestion. Mucous membrane of the stomach dark and corrugated; in the duodenum and jejunum patches of engorgement; two tape-worms, each seven feet, removed from the superior part of the ilium. Extensive honeycomb ulcers, and vascular engorgement, in patches, throughout the intestinal mucous membrane of the ilium. The mucous membrane of the cæcum removed by ulceration or sphacelation; the interior of the ascending and transverse colon presents a superficies of ulceration and disease. Mucous membrane re-appears in the descending colon, marked in patches, either pale, livid, or red. Twenty-five inches of a membranous tube that has sloughed is found in the colon; it most probably sloughed from the ascending or transverse colon. The tænia are species the third, *tænia solium*, LINN.

*Observation.*—I was consulted, and stated, that I believed this case to be intestinal ulcers. I examined the body after death. One of the abscesses having its contents decomposed, must have been formed a considerable time. This case proves: *first*, that abscess of the liver may take place, not only without the ordinary symptoms, but even whilst the individual appears to be in good health; *secondly*, that intestinal ulcers frequently follow hepatic abscess. This person had every appearance of perfect health; he took a great deal of exercise, exposed himself constantly in field sports and games, had his table supplied with the best, used beer, wines, &c., freely, yet not to excess, and never complained of the most trifling previous illness, even throughout the hardships experienced in the Rangoon war. Ten days before his illness, I remember having noticed the singular dryness and burning heat of his hands.

Similar cases in their early stages are every day occurrences to Indian practitioners. It is merely congestion of

the abdomino-portal system. General bleeding, to reduce the circulation, then repeated leeching, counter-irritants, mercurials, and purgatives, with subsequent change or sea voyage, are sufficient for the cure; but, above all, prompt and free general bleeding.

(217.) Ætat. 29.—Fair, tall, thin, healthy. Three years in India.—18th February, 1827. Purged these two days, accompanied by strangury. Pulse, tongue, and skin natural. Ipec. grs. xviij. bis die in pil. sine bibendo.—Feb. 23d. Quite well. Discharged.

2d April, 1827.—*Re-admitted.* Frequent purging, without other derangement. Calomel Ɔss. horâ somni. Pulv. rhei Ɔij. cras mane.—April 4th. Quite well. Discharged. —April 15th. *Re-admitted.* Oppression and burning at the epigastrium; no other derangement. Antimon. tart. gr. iij. in aquâ statim.—April 16th. Weakness, but neither heat, oppression, nor uneasiness. Ipecacuanhæ Ɔss. bis die.— April 18th. Quite well. Discharged.

17th July, 1828.—*Re-admitted.* Pain of the abdomen these twenty days, increased on pressure; tenesmus; heaviness, and fulness. Skin warm and clammy; pulse 100, small and hard; tongue brown and dry. The treatment is said to have been active, and depletion freely effected (not under my care.) The patient died on the 25th of July, and the examination was made by myself.

*Dissection* ten hours after death. The body is not emaciated. Subject muscular; the back and nates discoloured by ecchymosis, from pressure. Vascular engorgement of the cerebral surface, and of the capillaries lodged in the pia mater. The spinal theca is distended with fluid; engorgement of the capillaries on both surfaces of the cord. The equinal nerves blanched. The pulmonary pleura in contact with the diaphragm; on both sides has its capillaries strongly injected. The interior of the cœliac artery is much darker

than that of the carotids. The liver weighs ℔4. ℥9.; its surfaces and tissue pale, sections smooth; texture close; tears very readily, and is of a finer granular texture than usual. An abscess occupies the centre of the right lobe, that extends close to the depression formed by the colon. Four ounces of dark pus being removed, the surface of the cyst presents a series of white and yellow flocculi, the remains of organized vessels and nerves: one very small abscess is close to the former. The gall bladder contained half an ounce of very viscid granular dark bile. Spleen small and flaccid. The kidneys have some vascular congestion, and pus is observed issuing from the mammillary processes of the left. Longitudinal sulci on the tongue. The great vessels in the gastro-intestinal coat form large black lines, and the surface generally is dark; capillaries strongly engorged. The mucous coat is extremely flaccid, and the rugæ nearly obliterated. Mucous membrane of the duodenum dark, but soon becomes pale, very thin, and loses its rugæ. Numerous honey-comb ulcers in the ilium, especially increased near and at the cæcum. Mucous membrane of the cæcum has several extensive and irregular ulcers, of which one has nearly perforated the tube. Mucous membrane of the ascending, transverse, and descending colon, is extensively ulcerated, and many of these pustules are in a sloughing state. The sigmoid flexure and rectum have numerous small tubercles, being the early stage of pustular ulceration.

*Observation.*—This case was originally congestion of the abdomino-portal system; and free early venesection, followed by leeching and mercurials, would have removed the disease.

(218.) Ætat. 22.—Eight months in India. Fair and ruddy, middle stature, muscular. Irregular habits. March 30th, 1827.—Complained of muco-bilious purging, and ab-

dominal pains at intervals, for three weeks. Pulse large, full, and strong; tongue furred, and has transverse sulci; skin moist; urine yellow, and copious; appetite not impaired. Venæsectio ad ℥xxx. statim. Calomel ℈ss. hor. somni. Pulv. jalapæ ℈j. cras mane. March 31st.—Says he is quite well; the medicines having operated freely; and he requests to be discharged.

April 16th.—*Re-admitted.* Emaciated; weak; countenance collapsed; eyes sunk; pain in the chest, pit of the stomach, shoulders, and extremities; no appetite; thirst; nausea; frequent yellow watery dejections; urine dark and scanty; fauces becoming dry, impedes speech slightly; sleeps little. Pulse 120, soft and small; tongue furred with irregular transverse sulci, and enlarged red papillæ; skin moist and cool. *Diagnosis.*—Hepatic abscess. *Treatment.*—Leeches; blisters; setons; mercurials; purgatives. Hillary's neutral saline mixture, wine, and the ordinary variations of regimen were adopted fruitlessly.

The breathing became worse; the hepatic enlargement increased; the urine continued generally dark until the moribund condition was setting in, then it became pale, but blended with a copious thick white deposit, that rendered it opaque when agitated. The pulse, always soft, varied in fulness and frequency. The tongue became quite clean, of a scarlet red, yet preserved the angular sulci, and at last it became dry and ulcerated. Nocturnal sweats, hectic flushes, want of sleep, thirst, and restlessness, led to the close of life. Mercury given freely and largely, produced no ptyalism; pains in the shoulders, neck, head, arms, and cramps of the lower extremities, with occasional pains of the knees, were felt in the advanced stage: ordinarily, however, these occurred in the first. He expired May the 19th.

*Dissection* ten hours after death.—*Cranial cavity.* The cerebral vessels are enlarged and gorged; colourless fluid

effused between the arachnoid and pia mater, elevates the former from the cerebral convolutions; and this effusion extends into the spinal theca, from an accumulation at the base of the brain.—*Spinal canal.* The dura mater of the cord contains fluid, and there is some also within its arachnoid tunic; the pia mater of the cord, and of the equinal nerves, is blanched; many vessels are engorged, more especially at the part parallel to the heart.—*Thorax.* Partial pulmonary engorgement. The heart, and large vessels adjoining, are nearly natural; but opposite to the liver, the aorta becomes thin, and is internally discoloured.—*Abdomen.* The liver is much enlarged and discoloured. Sixteen ounces of pus is removed from three abscesses; one near its superior, and two near its inferior surface. The gall bladder contains seven drachms of thin orange bile. The renal tissue is condensed, dark, and its minute vessels engorged. The pancreas is dark. The mucous membrane of the ilium has patches of engorgement. The cæco-iliac valve, and the mucous membrane of the large intestines, are extensively ulcerated, and in some points sphacelated.

*Observation.*—The primary disease, in this case, was hepatic congestion; but the ordinary symptoms did not very distinctly indicate that state to a great extent at the early admission. The fatal termination shows—1*st*, That rigorously minute examination should always be early made.—2*dly*, That especial caution is necessary to discriminate those cases of hepatic engorgement, which may soon run into suppuration, if not perfectly cured.—3*dly*, That no individual should be discharged prematurely.—4*thly*, That in doubtful cases free bleeding, and for a certain period, local bleeding and mercurials, should be adopted. The absence of more marked hepatic symptoms appears due—1*st*, To the disease being then only in the early stage of congestion.—2*dly*, To the determination that took place to the intestinal mucous membrane, relieved by the brief treatment

employed on the 30th of March. The engorged condition of the liver being only subdued, not effectually removed, suppuration ensued between that period and his re-admission on the 16th of April. The soft pulse; hectic; cold sweats; sleeplessness; scarlet red tongue; flushes; variable state of the bowels; inefficacy of mercury, and enlargement of the trunk in the centre, prove, beyond a doubt, the existence of hepatic enlargement and abscess at that period. The scanty dark urine indicated that the pus was not carried into the circulation, and hence an unfavourable prognosis.

(219.) Acute rheumatism. Ætat. 26.—At sea since fourteen years of age. Had several attacks of syphilis, and has taken mercury freely for that disease. Now, June 2d, 1827, pain and stiffness in left fore arm, without swelling. Diffused swelling; stiffness and pain in the right wrist. Appetite good; bowels regular; feels weak. Chews tobacco. Desired to discontinue tobacco. Muriat. ammon. ℈ss. Sulphat. zinc. gr. j. M. bis die.—June 4th. Pulse 106, large, and strong; tongue, skin, and bowels regular; severe pain of left arm; urine natural. Con. Decoct. sarsaparil. comp. ℔s. iij. om. die. Venæsectio ad ℥xxiv. Jelly, of an opaque yellow, formed on the coagulum.—June 5th. Slept better; pains easier. Pulse 102, large, strong, full, and round; tongue and skin natural; urine dark. Venæsectio ad ℥xx. The blood cupped and firm; a thick stratum of jelly formed on the first cup; on the second, the cupped surface had a coat resembling the lining of an abscess.—June 6th. Pains much decreased, and stiffness gone off; three loose dejections, dark; urine natural. Pulse 96, large, and very strong; tongue clean; skin thick, lumpy, and cool; slept. Con. rem. Venæsectio ad ℥x. vespere. The blood cupped, with much jelly on the surface.—June 25th. Tongue, pulse, skin, urine,

and bowels regular; no complaint. Convalescent.—July 9th. Discharged.

*Re-admitted*, 26th July.—Complains of a slight uneasy purging. Pulse, tongue, and skin natural. Hirudin. vj. circum anum admoveantur. Calomel gr. x. horâ somni. Ol. ricini ℥j. mane.—July 27th. Little change. Pulse too full. Repet. hirud. et calomel hor. somni,—28th. Belly sore inside. Much purged; little sleep. Pulse 104, large and full; tongue natural; skin hot; some appetite; much thirst; pain in the back. Repet. hirud. x. et calomel hor. somni.—29th. Less pain; slept; appetite good; much thirst. Pulse large and soft; tongue natural, moist; skin natural. Hirud. vj.—30th. Better. Hirud. vj.—31st. Frequent muco-sanguineous dejections, with tenesmus and bilious vomiting. Urine like stale decoct. cinchonæ. Slept; no appetite; thirst. Pulse 108, large and soft; tongue moist, yellow flaky fur; skin natural. Abdominal pain. Hirud. xxx. abdomin.; Ol. ricini ℥iss.; Ol. terebinth. rect. ℥ss. M. statim.; Hirudines vj. circum anum vespere; Pulv. ipecacuanhæ dr. j. hor. som. sum. sine bibendo.—Aug. 2d. Little sleep; urine scanty; dejections frequent, sanguineous, with tenesmus; no appetite; great thirst. Pulse 130, round, full, and hard; tongue has deep fur, disposed to dry; skin hot; at times profuse sweats. No abdominal pain, but soreness. *Diagnosis.*—Ulcers in the large intestines. Venæsectio ad xxiv.; Hirud. xiij. abdomini; Calomel ℈j. statim; Pulv. ipecacuanhæ ʒj. hor. somni; Ol. ricini med. ℥iss. cras mane. Blood cupped, and buffy.—3d. Some sleep; startings; cold perspiration; speaks quick; little appetite; great thirst; several copious bilio-feculent dejections, and only spots of blood; little tenesmus; no pain. Urine copious, like decoct. cinchonæ. Pulse 122, small and feeble; tongue slight flaky fur; skin cool; extremities cold and wet. Con. calomel, ipecac., et ol. ricini med. Vin. rub. ℥vj. in die. Flannels.—4th. Dejections like coffee-

grounds, no blood; urine like decoct. cinchonæ; ideas confused; restlessness, and startings in the night. Pulse 120, natural volume, feeble; tongue slightly furred; skin cold. Acid. nitros. cum opio ter die; opii gr. ij. cum Ipecac. hor. somni. Continued gradually sinking, and expired at noon on the 9th of August.

*Dissection* eight hours after death.—The capillaries of the pia mater are gorged, and fluid effused under the arachnoid. The cerebral mass is firm. Spinal cord is natural. *Thorax.*—The lungs are gorged with blood. The interior of the aorta is of a slight pink colour throughout, and there are about twenty transverse rugæ midway between the aortic arch and cæliac artery. *Abdomen.*—The viscera in situ are pale; the omentum is very fat, and gathered up, covering the stomach and liver. The arch of the colon adheres to the liver, and their separation lays open a large chronic hepatic abscess on the right. There are numerous points containing pus in small cysts, from the size of a millet seed to that of a pea, throughout both right and left lobes. The liver externally is of a blueish grey or lead colour, indicating very extensive previous congestion. Pressure of the kidneys shows pus passing from the tubuli uriniferi into the infundibulum on each side. Mucous membrane of the stomach flaccid; rugæ obliterated, and sprinkled with several spots of ecchymosis. A pink blush in the duodenum and jejunum. Several patches of engorgement in the ilium, and honeycomb ulcers, which become more numerous and extensive as they approach the cæcum. The mucous coat of the ascending colon is closely studded with large deep ulcers, that penetrate to the muscular coat; they also exist in the transverse and descending colon, and in the rectum, but they are smaller in these parts, and vary from the diameter of a quarter of an inch, to one inch and a half.

*Observation.*—The surgeon of the Investigator told me that this patient was very constantly on the list with syphilis,

and whilst relieved from duty for treatment, he took every opportunity of committing excesses. The rapid recovery, in the first instance, after bleeding, and the characters of the blood, indicate both congestion of blood in the liver, and also a peculiar state of that fluid. On his being discharged from hospital on the 9th, he spent all his time till the 26th in a series of excesses. His pulse, on re-admission, gave no evidence of very serious disease, and unfortunately the attack was treated slightly. General bleeding then would have been much more appropriate. However, it is very probable that the chronic abscess had been previously formed.

(220.) *Ætat.* 45.—7th July, 1827.—Slender, and emaciated. Had constant dry cough, and pains of the right side and shoulder, with fever, these forty days. Now, acute symptoms abated, but great debility; frequent purging. Skin cold, and clammy; urine scanty, red or dark; pulse 120, thready, and soft; tongue brown and white, nearly dry; no appetite; cannot sleep; fulness and soreness in the hepatic region. *Diagnosis.*—Hepatic abscess. Vini rub. ℥iv. in diem. Pil. hydrargyri gr. v. bis die. He continued sinking, and expired the following day.

*Dissection* eleven hours after death.—Fluid elevates the arachnoid from the hemispheres. The cerebral tissue is soft. The dark appearance of the pia mater enveloping the corpora olivaria, pyramidalia, and superior part of the cord in cases of extreme exhaustion, is here strongly marked. The dura mater of the spinal cord contains fluid. The cord and equinal nerves are blanched. The vessels on the anterior surface inferiorly are gorged. Extensive adhesions of the pleura on the right; the left side natural. Sigmoid valves of the aorta are vascular; the interior of that artery presents reddish spots, and some white irregular elevations. The internal surfaces of the cæliac, and the other abdominal

arteries, are dark, similar to those of arteries in a limb affected with sloughing ulcers. The liver is covered with false membranes adhering to the diaphragm. A large abscess is opened by detaching these adhesions; it contains eleven ounces of nearly colourless fluid and flaky pus. A large tumid abscess is found on the posterior surface of the right lobe, containing six ounces of pus. A third abscess is situate in the superior part of its convex surface, containing two ounces of pus. A fourth is situate in the right convex surface. The hepatic tissue is dense, close, carneous, and the granular appearance nearly lost. The aggregate contents of the abscesses make nineteen ounces. The internal surface of the abscesses being washed out with pure water, they present a yellowish colour, and an uneven surface: the irregular elevations that appear on it as flocculi, are the remains of vessels and nerves that had traversed the area of the cavity. Upon throwing water into the cavities, the flocculi, or extremities of the partially destroyed vessels, float; seizing, and endeavouring to detach them, some adhere firmly to their bases. The gall bladder contains two ounces of greenish yellow viscid bile. The spleen is small and pale. Pancreas small and dark. Seventeen living lumbrici found in the ilium. Two small ulcers on the mucous membrane, near the cardiac orifice. Mucous membrane of the stomach rather pale; that of the duodenum a slate colour. Patches of engorgement, honeycomb ulcers, and pale patches, occupy the mucous membrane of the ilium. The cæco-iliac valve is destroyed by ulceration. The ascending, transverse, and descending colon, and rectum have their mucous membrane altogether destroyed, in part by a series of extensive and irregular ulcers, and the remaining portions by sphacelus.

*Observation.*—In this case, the abscess whose contents were decomposed had formed first. The occurrence of intestinal disease adds another proof, that the system assumes

a tendency to the production of that state in cases of hepatic disease. It is obvious that the case was beyond the reach of art before it came under treatment. The usually moderate diet and habits of the natives render the course of acute diseases in their system proportionately mild. This circumstance will show, that complaints or symptoms trivial in the case of a native, may, in that of an European, announce serious disease. For this reason, the early history and symptoms should be examined with the most scrupulous and conscientious regard to exactitude; otherwise, an oversight in the first diagnosis, apparently quite trivial, may ultimately compromise the patient's life.

(221.) Ætat. 22.—Landed on the 14th of July, 1827, debilitated by dysentery; now in a chronic stage; slight mercurial ptyalism excited before he left the ship, and now takes anodynes only. The surgeon stated, that this patient concealed a dysenteric affection, that was discovered only in the chronic stage; that bleeding and mercurials were used with advantage, but that collapse and sinking supervening suddenly; port wine was employed.—July 23d. Great debility, emaciation, no appetite. Pulse small, very soft and feeble, 108. Tongue a pale livid, with heavy excited fur, not mercurial. Skin clammy and cold. Nausea and vomiting these six days, pain at the epigastrium easier, blister not healed, and there is fulness with an elevation at that part. Jaundice; copious slate-coloured dejections; urine like stale decoction cinchonæ, and opaque. Says the earliest symptoms he remarked were pains of the back, afterwards sickness of the stomach, then dysentery.—*Diagnosis.* Hepatic abscess and intestinal ulcers. Calomel gr. xv., Opii gr. j. horâ somni omni nocte. Ol. ricini ℥ss. pro re natâ. Muriat. ammon. gr. x., Nitrat. pot. ℈j., Aquæ ℥iss. M. ter die. Vini rub. ℥iv. vel ℥vj. in diem. Arrow-root, chicken-broth, and sopped toast. Low delirium was suc-

ceeded by coma and sinking, attended throughout by cold sweats; and death ensued on the 29th. The body is jaundiced and emaciated.

*Dissection.* — The cellular tissue is yellow. — *Cranial cavity.* Fluid is effused under the arachnoid; congestion of the cerebral vessels at the anterior fontanel, and those of the pia mater throughout. Four ounces of sero-sanguineous fluid effused at the base of the brain; vascular engorgement on the anterior and posterior surface of the cord, particularly at the cauda equina.—*Thorax.* Numerous minute tubercles, filled with pus, found in the right lung. The interior surface of the ascending aorta is of a deep yellow. —*Abdomen.* The liver adheres to the stomach on the right; the omentum is very vascular; three pints of aqueous coffee-coloured fluid are found blended with pus in an hepatic abscess. The liver is coffee-coloured from previous congestion of blood, and from its extended limits, it has been greatly enlarged, previous to suppuration. The abscess was nearly in the centre, and it has removed the lobulus spigelii, and formed its own parietes by false membrane and adhesions to the stomach. Several small hepatic cysts contained dark fluid and pus. The gall-bladder contains half an ounce of thin green bile. Pressure forces pus from the mammillary processes of the kidneys. That part of the stomach which assisted to inclose the hepatic abscess presented a suppurating surface to the abscess, and the same extent on the other side, within the stomach, presented also a suppurating or ulcerated surface. The gastric rugæ are faintly developed, and the ulcerated surface is very conspicuous. Congestion is observed in the duodenum and jejunum, and for two feet in the ilium. The mucous membrane then becomes pale until two feet from its termination in the cæcum, there it is a deep brick red, with numerous small ulcers. Mucous membrane of the cæcum and ascending colon red. That of the transverse arch is pale, but

studded with ulcers; that of the rectum is a chocolate colour, and also studded with ulcers.

*Observation.*—This case appears to have been originally congestion of the abdomino-portal system, because the invasion was unaccompanied with pain, which is an attendant on acute inflammation. The sudden collapse and sinking were most probably due to the entry of pus into the circulation through the hepatic veins. It affords another proof, that a congested state of the abdomino-portal system, evidenced by pains or fulness of some abdominal viscus, and accompanied by intestinal disease, should receive its first check by a general bleeding; and then the capillaries should be evacuated locally. Pains of the back should lead our suspicion to the liver being the part affected; yet this has been mistaken for rheumatism by professional men of great experience in this country.

(222.) Ætat. 22.—Received into the Penang general hospital 14th of November, 1827. Stated to have been taken ill on the 19th of October with pain of the head and fever. He was bled, purged, and treated with mercurials, till the 25th, when he complained of hepatic pain and frequent mucous dejections. Calomel, opium, and antimony, were used, and the disease assumed a chronic form.—Nov. 14th. Emaciation, anorexia, tenesmus, frequent muco-sanguineous dejections, with tormina, and to-day several coagula of blood were passed. Pulse 98, quick and small. Skin warm, and perspires much. Tongue clammy, and very red; no pain; urine scanty; cannot sleep; abdominal and epigastric pain on pressure.—*Diagnosis.* Extensive intestinal ulcers, and most probably hepatic abscess. Employed a few leeches, opium, and ipecacuanha; anodyne injections, fomentations, a little wine, and some castor oil. Death took place at midnight on the 19th of November.

*Dissection.*—Congestion of the cerebral vessels, and some effusion. Slight congestion, and some effusion in the spinal theca.—*Thorax.* Much pulmonary engorgement, especially on the left; pericardium contained five ounces and six drachms of straw-coloured fluid. The heart's tissue is pale and flaccid.—*Abdomen.* The liver is dark, and the right lobe contains an abscess, from which sixteen ounces of pus is removed. The left lobe, upon being cut into, seems as if gritty. Very extensive congestion of the gastro-intestinal mucous membrane. Several deep ulcers, the size of a pea, near the cæco-iliac valve; and the large intestines, with the cæcum, presented internally an almost continuous surface of ulceration, in parts sphacelated.

*Observation.*—This case was most probably hepatic disease from the first. It must be admitted by all, that a system of medical treatment should not be decided on, until the seat and the state of disease are ascertained. The effects of curative measures might then be compared with the progress of cure, and with the opinion first formed. The daily comparison of the actual effects produced by treatment, with those expected from it, enables a medical man to detect his own error, if he commits one; keeps his attention stedfastly fixed on the best means of treating the case; and concentrates observation towards the actual seat and state of the disease. Otherwise, as the patient improves, and the symptoms vary, the actual condition and seat of disease may be frequently forgotten. Such an error may cause relaxation or alteration of the treatment, and the disease, left to its course, may soon run on to an unfavourable termination.

(223.) Admitted with dysentery. Pulse 120, small and hard. Skin cold and moist. Passed blood and mucus. Calomel ℈j., Opii gr. ij. horâ somni. Ol. ricini ℥j. mane. —May 17th. No change. Con.—18th. Slight improve-

ment. Pil. hydrarg. gr. v., Ipecacuan. gr. iij., Opii gr. j. M. bis die. Ol. ricini ʒvj. pro re natâ. Infusion of columbæ, and red wine, were used in addition, and the opiate occasionally increased, but with some slight variations. Exhaustion, sinking, and coma, progressively advanced, until the 16th of June. He died at eight, A.M.

*Dissection* made by Dr. Conwell.—The body is six feet, greatly emaciated, and numerous osseous concretions are observed in the cellular tissue. Cerebral surfaces pale; much fluid within the arachnoid; no cerebral congestion. The spinal cord is swollen in the cervix, its pia mater dark slate colour, as in cholera; the equinal nerves blanched. There is slight congestion of the capillaries on the surface of the cord inferiorly and posteriorly, resembling ecchymosis.—*Thorax.* The lungs contain spumous fluid. The heart is wasted and pale; points of ossification in the lining of the aorta; the coronary arteries partially ossified.—*Abdomen.* The liver contains four extensive abscesses. A large branch of the hepatic vein traversed the largest superiorly, and part of its coats were removed by ulceration. Pus and mucus occupied the calibre of this part, and a coagulum of blood filled the cavity of the tube on the side nearest to the biliary acini. The contents of the abscesses are dark-coloured, and some bile mingles with each. Sundry corrugations, covered with thick layers or false membrane, indicate the probable site of previous hepatic abscesses. The spleen is puce-coloured; the pancreas dark. The kidneys are small and pale. The tongue is marked by longitudinal and transverse sulci. Mucous membrane of the stomach pale, partially corrugated and flaccid; mucous membrane of the duodenum and jejunum pale; capillary congestion commences in the ilium; the mucous membrane is extremely thin, and engorged in parts; chronic ulcers, with irregular margins, are observed in the cæcum. The mucous membrane of the ascending colon, and thence to

the rectum, remains only in shreds and patches, the greater part having been removed by ulceration.

*Observation.*—The hepatic abscesses were chronic, as their contents indicate, and were formed long before the patient was received for treatment. The pulse indicated bleeding, however, at reception. The opium might have been spared. It is rarely useful in cases of hepatic inflammation, congestion, or obstruction, or in abdominal plethora.

(224.) Ætat. 26.—Three years resident in India; middle size, fair, robust. Admitted with gonorrhœa and a bubo. Used purgatives, leeches, and balsam of copaiba. —12th August. Discharged. Quite well.—August 19th. Admitted with a slight dysentery. Employed castor oil, small doses of ipecacuanha, fomentations, and occasional doses of calomel.—Aug. 31st. Attacked with collapse; passing copious congee-like stools. Treated as cholera, with counter-irritants and stimuli.—Sept. 14th. Well. Discharged.—Oct. 23d. *Re-admitted.* Dysenteric dejections. Pulse 96, soft. Tongue foul. Skin natural. Castor oil; leeches around the anus daily; a two-scruple dose of ipecacuanha; and a cataplasm to the abdomen, formed the early treatment.—Nov. 3d. Well. Discharged.—Nov. 12th. *Re-admitted* with dysentery. Treatment nearly as before.—December 17th. Discharged.

December 30th. *Re-admitted*, having suffered a succession of chills and flushes for five days. Pain and heaviness about the stomach. Pulse 78, small and feeble. Skin hot. Tongue furred. Thirst, anorexia, cannot sleep.—Jan. 4th. 1832. Calomel, blisters, and ipecacuanha, have been used. Pulse firmer. Venæsectio ad ℥viij.—Jan. 5th. Treatment continued. The case was now evidently hepatic disease. The symptoms of hepatic abscess become daily more apparent, and the change distinctly defined. The treatment

was directed to support the strength, and prevent febrile accessions. It was hoped, by keeping the patient in a tranquil state, to gain time for the removal of pus from the abscess. Towards the end of February, he was carried off with purging, having passed pus in his urine only occasionally at intervals of several days, not in succession.

*Dissection* twelve hours after death.—The body is much emaciated. No vascular engorgement on the cerebral surface. The spinal theca contains fluid, and the spinal vessels are inferiorly gorged.—*Thorax.* The descending aorta had a blush on its internal surface, that extended through the branches given off at the arch.—*Abdomen.* The liver was enlarged, weighed ℔viij., and its peritoneal surfaces adhered to that of the diaphragm. The right lobe contained a large abscess, of which a hand's breath superiorly is only confined by the peritoneal coat, it is quite yellow, and encircled by a large deep purple areola; contents of the abscess weighed two and a half pounds, of which one half was a dark watery fluid, and the other dark-coloured, flaky, and curdiform pus; the interior of the sac is uneven, and the surface scraped is observed to be pierced with foramina of different sizes. A small probe is introduced into one, and that tube being traced, it is a branch of the hepatic vein, leading to the cava. The gall-bladder is thickened, diminished, and contains bile and pus; the spleen is diminished, and so are the pancreas and kidneys. Capillary engorgement is observed on the gastro-intestinal surface, and honeycomb ulcers inferiorly; the ilium has its mucous membrane thickened, fleshy, and red; this thick coat has a series of large transverse ulcerated fissures, and it is readily removed by scraping. The cæcum, colon, and rectum, participate in this form of disease.

*Observation.*—The pus, which had been passed largely for many days before death, and was supposed to have been discharged from an hepatic abscess, was, on the contrary,

secreted on the preternatural membrane lining the lower part of the ilium and the large intestines. It may be fairly doubted, whether the use of copaiba did not determine an augmented volume of blood into the entero-portal circle of vessels during his first period of treatment. This would lead us to see the advantage of attending more to an exact balance of the circulation. The second period of treatment exhibits a cure without depletion, with a slow painful period of convalescence, rendered still more difficult by an accession of cholera. The third period of admission shows that the tendency to the disease (abdominal plethora and hepatic congestion) was not eradicated; and here, again, local depletions only were resorted to, instead of free general bleedings at first. The fourth admission for the same disease seems to be additional evidence that the same morbid disposition existed (abdominal plethora and entero-portal congestion of blood), and here the last opportunity for general bleeding was lost. The case was treated as before, and the general health for the moment improved. Fifth admission. It is clear that abscess had then taken place, and active treatment was no longer admissible, excepting to palliate symptoms; and it was used to that extent. The object then was to tranquillize and support the system, with a view to the removal of all remaining hepatic engorgement, with the hope that dilatation of the hepatic veins would draw the pus off into the general circulation, and that the kidneys would separate it from the blood. When the hepatic tissue becomes condensed by a long period of congestion, or from severe or long-continued inflammation (this was a case of the former kind), the hepatic veins are far less likely to dilate, the contents of the abscess must in that case remain, and unless it finds some exit, the issue will be as the present was—fatal.

(225.) Ætat. 30.—Tall and muscular. Seven years

resident in India. August 15th, 1831.—Pain across the belly; frequent mucous dejections, without blood; tenesmus. Pulse full; skin warm and dry. He was treated with slight mercurials and antimonials, purgatives and blisters, till I took charge of him in September. Pains of the right shoulder, the limbs and diaphragm were complained of, which he stated were of two years' duration. On the 13th, I considered them rheumatic. On the 14th, a compressed small pulse, 92, raised some doubt whether the disease was not masked and dangerous. *Treatment.*—General bleeding; a course of blisters over the hepatic region; mercurial alteratives, and purgatives.—Sept. 23d. *Diagnosis.*—Hepatic abscess. *Treatment.*—Directed to remove irritation generally, and engorgement of the liver and kidneys, with a hope that the pus would pass off with the urine. Passed purulent urine on the 9th and 10th of October.—11th. The urine changed to red. Copious muco-purulent expectoration, and considerable difficulty of breathing.—October 15th. No improvement; pain in the side; great difficulty of breathing, and expectoration. Ipecac. ʒj. omni mane sine bibendo.—17th. Brought up about four ounces of purulent fluid at once from the lungs.—31st. No improvement. Pulse 100, large and soft; tongue red; skin moist.—November 10th. No improvement.—30th. Expired.

*Examination* ten hours after death.—The body emaciated; the right side of the thorax sounds well. The left inferiorly dull. *Cranium.*—Considerable effusion elevates the arachnoid above the cerebral convolutions; the vessels on the cerebral surface are empty. Effusion observed in the spinal theca; a blush opposite the tenth and eleventh dorsal vertebræ. Vessels of the cord partially engorged. *Thorax.*—Fifty-two ounces of light coffee-coloured fluid, with flakes of pus, and a considerable volume of false membranes and some gas occupied the right cavity, so as to fill it perfectly;

the remains of the lung being stretched down along, and adhering to, the spinal column. The lung was perfectly hepatised, or carneous, and it lay flat to the spine, reduced to the volume of a middle-sized muscle. A perforation was found in the posterior and right side of the diaphragm, opening into the sac of an hepatic abscess. *Abdomen.*—The liver is small, pale, and its surface irregular, like a citron; an abscess occupies the superior and posterior part of the right lobe; the sac consists of organized lymph, three quarters of an inch thick. The envelopes of the liver separate readily from it, and there is no second abscess in its substance. The extreme right of the liver has a very red patch, marking recent inflammation, which gave the pain he complained of. The tongue is pale, sulcated in all directions; mucous membrane of the stomach dark, as is usual after opiates; the mucous membrane of the ilium, to the extent of ten inches, has its vessels much engorged; some honeycomb ulcers, and patches of congestion also occur. Eighteen inches from the cæcum, the mucous membrane becomes thickened, and its vessels injected. The mucous follicles and glands are greatly enlarged, and the surface is covered with adherent pus. The follicles in the mucous tissue of the cæcum are greatly enlarged and elevated, and there is one round irritated open ulcer, with high edges, half an inch in diameter. The mucous membrane of the large intestines is prodigiously thickened, smooth, red, and resembles muscular tissue throughout. The spleen is small and pale; the kidneys natural in size, with capillary engorgement. There are small ulcerations on the mucous membrane of the urinary bladder, that encircles the openings of the ureters.

*Observation.*—The right lung was carneous, hepatized, and shrunk; it merely occupied the right side of the spinal column, not one inch in thickness. The fluid gravitated to the back, and the gas filling the anterior portion of the thorax, forced the mediastinum to the left with a pressure

that afforded a kind of dull, instead of the hollow, sound on percussion. Perforation of the thoracic cavity might have been practised, and it would probably have lengthened the patient's days a little. Cases of a similar nature, and treated in that manner, may be seen in the medical periodicals. The subject of this case was a man of extremely irregular and intemperate habits; he went into hospital some months before at Kamptee with a very slight bowel complaint. That affection being removed, he complained of rheumatic pains, and was sent from Kamptee to Masulipatam on sick certificate. Aug. 15, he was admitted with purging, and the case was congestion of the intestinal mucous membrane: general bleeding was not employed, which is to be regretted. The period antecedent to hepatic suppuration was not distinctly marked by the pain that accompanies acute inflammation. General and local depletion, early and freely used, mercurials, counter-irritants, and purgatives, would have removed the disease in the first instance. Masked cases of this kind are often mistaken for rheumatism; the mistake occurred in this instance.

(226.) Ætat. 46.—Twenty-five years resident in India; very subject to hepatitis and dysentery from habitual excesses. Now, August 17th, 1831, tenesmus, griping, frequent muco-sanguineous dejections, pain across the abdomen, increased by pressure. Pulse 88, soft. Tongue furred white. Skin cool and moist. Urine free.—*Treatment.* Leeches, calomel, and ipecacuanha, castor oil, and suppositories, alternated with injections, and the frequent use of fomentations, were freely employed. Death ensued at five, A.M., September the 8th.

*Dissection.*—Considerable cerebral congestion, accompanied with effusion; and some vascular congestion was observed in the vessels of the cord, with effusion. Slight pulmonary engorgement. The liver was dark-coloured and gorged; two

abscesses were found; one on the inferior and posterior surface behind the small curvature of the stomach, and one about the size of a nutmeg in the centre of the liver; both contained thick pus. A white patch, irregularly contracted, like the scar of an ulcer, occupy the right convex surface of the liver, apparently indicating the seat of a previous abscess. The interior surface of the cæcum was ulcerated and black. The colon close to it was likewise ulcerated and perforated. The ascending and transverse colon was contracted, and the internal surface presented numerous ulcers in a clean healing state. Ulceration in the sigmoid flexure was less healthy, and the surface of the rectum had no remains or traces of its mucous membrane from extensive ulceration, but presented the dark flocculent appearance observed in unhealthy tubercles.

*Observation.*—This patient was under my own care throughout. The softness of the pulse, and cool skin, prevented the employment of general bleeding. I must, however, regret that omission. It now appears to me: *first*, that the hard, or strong and full pulse of hepatitis marks diseased action of the minute arteries. *Secondly*, That in case of venous congestion, (which may equally lead to hepatic abscess) the pulse is soft. The pus was healthy, and hence, most probably, the abscesses were formed subsequently to his reception; but as he was only twenty days in hospital, it may be that they were formed previously. From the first he seemed quite overcome, moaned heavily, and complained of extreme debility, but no other really threatening symptoms were present. This case resembled No. 216, as the first indication of danger was the passing a large quantity of blood per anum, of which some was clotted. The case was most attentively observed and treated; yet, in one similar, I would employ at least one large general bleeding at the commencement. The mercury was used freely, largely, and unremittingly; but, as in other cases of hepatic

abscess or abdominal plethora, it occasioned soreness of the mouth, but no ptyalism.

(227.) Ætat. 24.—Eleven months resident in India. Middle stature, sickly. Originally a butcher; formerly in hospital with a complaint similar to the present.—September 24, 1831. Frequent acute dry cough for two months; at present a smarting and soreness of the eyes, conjunctiva engorged and red. Pulse 92, soft and languid. Skin cool. Tongue clean. Bowels regular; urine natural. No appetite; great thirst. Attributes the complaint to going out from the ship's galley when much heated by the fire, and acting as a cook.—October 1st. Slight treatment employed, but the cough and febrile symptoms became gradually aggravated.—Oct. 15th. Copious expectoration, streaked with blood. Complaint supposed to be pulmonary, and treated as such.—Oct. 31st. No improvement; progressive emaciation.—Nov. 15th. Has experienced occasional febrile attacks, removed by general bleeding and leeches to the temples.—Nov. 30th. Retrogrades, and has copious sweats; blisters, purgatives, &c., have afforded no relief.—Dec. 7th. Expired suddenly.

*Dissection* fourteen hours after death.—Slight cerebral and spinal effusion. The lungs slightly gorged, and a white mark (false membrane) on the lower part of the right inferior lobe, where pain was felt, and "*metallic tinkling*" indicated tubercles. A cavern was discovered underneath, adequate to contain a walnut, with smooth surfaces, and communicating freely with the bronchial tubes. Fluctuation of the liver induced us to remove and weigh that gland previous to farther examination. Its convex surface adhered to the diaphragm, and the most prominent part formed the parietes of a sac that confined an abscess. The liver weighed five pounds. The contents of the abscess

removed weighed one pound three ounces, and then the liver weighed three pounds thirteen ounces. The abscess contained a large coagulum of blood, surrounded by the pus, and numerous little bloody clots adhered to projecting points of the surface. These projections were the extremities of eroded arteries, and the tubular form was traced in some, the extremities being closed by a clot of red blood. The abscess was crossed or traversed by shreds or flocculi, apparently the debris of vessels; and the inner surface of the sac, when filled with water, presented these flocculi floating on all sides. The hepatic tissue was mottled white and dark; apparently the dark parts having been in a state of engorgement, and the pale parts in an opposite state from vascular obstruction.

*Observation.*—The obstruction was twofold. *First*, An obstruction of the absorbent vessels from the pressure of engorgement, whereby accumulation took place in the parenchyma, that aided in producing swelling. *Secondly*, This tumid state, making pressure on the capillary arteries, veins, and biliary vessels, would obstruct the transit of fluids through those parts, and the tissue would then necessarily become condensed and pale, as observed in this case. The remains of vessels stretched through the area of the abscess shows that those tubes are the last parts that become disorganised by the process of suppuration. Death took place here suddenly and unexpectedly. I saw the case in consultation the preceding day, and stated that he would die in three or four days. The hœmorrhage into the abscess was the cause of early death. If the patient had survived three or four days, and that hœmorrhage had not taken place, the vessels would have become altogether disorganised by suppuration. This case shows the necessity for a clear diagnosis and prompt treatment in the beginning. The early, free, and prudent use of the lancet, of counter-

irritants, mercurials, leeches, and purgatives, might have given a different result.

(228.) Three years resident in India: four months in hospital at the Mount from intermittent.—September 2d, 1831. Pain and tightness of the head, with fever and watery purging since yesterday noon; had an opiate at the surgery last night; passed much yellow mucus; is better, but pain of the belly remains. Pulse 76, large and soft. Tongue moist, furring. Skin natural. Calomel gr. x., Opii gr. ij., M. horâ somni sumend. Ol. ricini ℥j. mane.—Sept. 3d. Well. Discharged.—Dec. 24th. *Re-admitted.* Gonorrhœa, with chancre, and general pains; no fever; sleeps well; appetite good. Purgatives, leeches, mercurials, and lotion.—Dec. 27th. General bleeding.—28th. Chills and flushes. Blisters, antimonials, and leeches, were used, in addition to the treatment mentioned.—Jan. 18th. Quite well. Discharged.—1832. March 7th. *Re-admitted.* Difficulty of breathing, pain and uneasiness at the pit of the stomach, occasional febrile attacks, pains in his bones. Bowels costive; cannot sleep; no appetite; much thirst. Tongue slightly furred; skin dry. Pulse 80, soft.—*Diagnosis.* Chronic liver affection, most probably abscess.—*Treatment.* Mercurials, leeches, blisters, castor-oil, setons.—March 25th. Quite well. Discharged.

April 29th. *Re-admitted.* Abdominal pain; scanty muco-sanguineous dejections; giddiness; much thirst. Pulse 80, small and soft. Tongue clammy; skin cool.—*Diagnosis.* Hepatic disease, and chronic inflammation or congestion of the intestinal mucous membrane.—*Treatment.* Fomentations, calomel, castor oil, general bleeding and leeches, poultices to the hepatic region, warm bath occasionally, blisters, and setons.—May 16th. Urine copious, stained with bile; sleeps; countenance like parchment; dejections green; no pain. Pulse 84, small and soft;

tongue and skin natural. Pains occasionally in the back, the back of the neck, and shoulders.—May 30th. Burning at the epigastrium; urine orange colour; little sleep; restless; loose bilio-feculent dejections. Pulse 80, soft; skin natural; prostration of strength, and giddiness of the head. —June 15th. Urine dark straw colour; bowels open or loose; little sleep; no appetite. Tongue and skin natural. Pulse soft, 76. Severe pain of the shoulders; lies easiest on the left.—June 30th. Urine dark; bowels slow; very pale and emaciated; no appetite; short periods of sleep. Pulse 88, small and soft; hectic sweats continue.—July 15th. Urine opaque and copious, like stale decoction of cinchona; purged at times; short periods of sleep; no appetite. Pulse 92, soft; tongue and skin natural; copious sweats; no pain; much cough; less difficulty of breathing. —July 31st. Pulse 76, soft; tongue clean, but dry; skin natural. Urine opaque with pus; occasional cramps in the lower extremities.—August 15th. Difficulty of breathing; restlessness. Urine like decoct. cinchonæ flavæ, with little pus. Pulse 104, soft and feeble. Tongue and skin natural; hands and face puffed.—August 30th. Moribund.—Sept. 3d. Expired.

*Dissection* twelve hours after death.—The hands, feet, scrotum, and nates, are œdematous, and the body and limbs greatly emaciated. A collection of pus had formed under the chin, which was evacuated four days previous to dissolution; but the sac is now re-filled with a greenish yellow pus. Cerebral surfaces pale; very extensive effusion of fluid. Surface of the spinal cord pale, and the theca filled with fluid.—*Thorax.* The lungs, heart, and great blood-vessels, natural on the left. On the right, the lung has lost its original structure, is hepatised, firmly laid down along the spine, and is not thicker than the fingers. The right cavity is occupied by five pints of pus and false membranes, which being removed, the interior of the cavity

resembles chamois leather, and the lung is so closely compressed, and occupies such small space, that at first sight it appeared altogether wanting. A perforation is observed in the diaphragm, at an equal distance, between the tendinous centre and its muscular insertion on the right. *Abdomen.*—The peritoneal surfaces are pale: one pint of serous fluid is removed from the cavity, partly gelatinized into transparent flakes. The liver is of a purple colour, shewing very extensive previous engorgement. A large superficial abscess occupies the convex surface on the right, around which adhesions are formed to the diaphragm, and the centre leads to the perforation alluded to. The parenchyma of the gland is dark and carneous, containing few acini. The mucous surface is generally pale, with traces of engorgement in parts.

*Observation.*—This case is an additional instance of the evils arising from the delay of active measures on the first invasion of disease. Originally, there was congestion of the portal system, both in its hepatic and intestinal extremities. One, two, or three general bleedings; a few applications of leeches; some doses of calomel, and a blister, would have effectually removed the affections which so soon afterwards created those extensive organic alterations, and death.

(229.) Ætat. 44.—Tall, ruddy. Prone to irregular habits and excesses. Twenty-eight years in India. Subject to dysentery and hepatic disease; this being his fourth acute attack of the latter.—December 31, 1831. States that these last ten days he could not use his waist-belt, his sash, or button his coat without great pain, soreness, and uneasiness. Oppression at the stomach, with nausea. Pulse small and hard; skin cool and clammy; tongue red at the sides, foul in the centre; bowels loose; dejections frequent, dark, and some blood; urine very dark.—Jan. 2. Mercu-

rials and purgatives have afforded little relief. Pulse more full and hard: pain continues. Eight leeches applied at the epigastrium. The bleeding produced sudden collapse, and it required three hours, and the use of diffusible stimuli, to re-establish the circulation. He declined a blister.—Jan. 18. No improvement. Mercurials were freely used until the 12th, when a tumor presented at the epigastrium. Transferred to Surgeon Conwell. Patient emaciated, and hectic startings prevent sleep. Pulse 114, small, soft, feeble; tongue red; skin clammy; palms hot; a large diffused tumor occupies the epigastric region.—Jan. 24th. The state of the stomach and bowels being now favourable, and the mind disposed to it, the tumor more elevated, and its parietes thinner, an operation is determined on. A small incision was made, which gave exit to four and a half ounces of fluid, a brickdust colour, with small but distinct traces of flaky pus. Membranes protruded, which we correctly supposed to be the peritoneal coat.—February 2d. He expired. Great debility came on after opening the abscess: the discharge was in small quantities, of a brickdust colour, and the membranes, in a sloughing state, continued protruding from the wound.

*Dissection* twelve hours after death.—Abdomen only permitted. A slough encircles the wound, from the ensiform cartilage, downwards three and a half inches, transversely, two and a half. Sloughed membranes protrude through the centre. Internally, a sloughing ulcer commenced three inches to the right of the ensiform cartilage, and extended four and a half inches to the left, occupying the inner surface of the parietes, and inferior surface of the diaphragm, through which it had nearly penetrated anteriorly; the superior limit commenced at the tendinous expansion, and reached near to the umbilicus. This surface had lost its peritoneal coat, of which some remains protruded through the incision. The convex surface of the liver was covered

in part by this ulcer, but it retained its peritoneal covering except in a spot the size of a dollar, that opened into a cavernous ulcer on the surface; this superficial ulcer communicated, by a fistulous opening, with a deep-seated abscess, which extended from the anterior to the posterior margin. This second abscess was the larger, and contained the thickened remains of green yellow pus. The left lobe had lost its granular structure; was firm, and its substance contained seventeen round white masses of fibro-cartilaginous tissue, that most probably resulted from former points of inflammation, or rather from abscesses. No open vessels appeared on sections of that lobe. The right lobe presented the natural appearances of structure, colour, &c. The sanies, pus, &c. were retained by adhesions to the liver and omentum that encircled its limits, and had only in part escaped into the general cavity. The entero-peritoneal coat had its vessels gorged. The aorta, immediately above the cæliac artery, was encircled by a band of inflammation, of two fingers' breadth, and the surrounding cellular tissue was injected with red gelatinized serum.

*Observation.*—Dr. Graves, of Dublin, recommends a deep crucial incision over such abscesses, which would only leave a thin covering that suppuration would speedily remove. I regret much that this was omitted in a case so favourable to that course. This individual always suffered from palpitation; occasioned, doubtless, by the pressure of the left lobe of the liver on the aorta. The inflamed band of the aorta appears due to the same cause. The tumor presented the arterial pulsation very distinctly, although the patient was largely covered with bed-clothes; and it was very dangerous in appearance to cut on a fluid tumour that was beating as distinctly as the heart itself. The great utility of this and similar cases is, to shew the ease with which such diseases may be avoided, by abstaining from the baneful habits that produce liver and bowel complaints.

The period of illness exhibits no symptoms that could have been opposed by active treatment; and hence this case gives an additional proof that suppuration does result from congestion of blood in the liver at some times, as we know that it does at other times from inflammation.

(230.) Ætat. 25.—Middle stature, fair, muscular. Jan. 13th, 1832, Kamptee.—The preceding two years he has suffered constantly from rheumatism, and was subjected to ptyalism on that account several times. A troublesome ulcer formed on the left elbow. Great debility, deranged bowels, and a bloated condition, occasioned his transfer to the coast. —March 7th. Received into the general hospital at Masulipatam. Œdema of the limbs; left arm partially paralytic from rheumatism. Rheumatic pains commence at seven, P. M., and last till twelve; severest through the diaphragm. Appetite good; dejections nearly natural. Urine clear; sleeps from twelve, P. M. Pulse 121, large and soft; tongue pink and scarlet. Used nitr. of potassæ; pulv. ipecac; leeches at times, and quinine. Wine disagreed.—April 3d. *Diagnosis.*—Chronic hepatic abscess, with chronic inflammation of the intestinal mucous membrane. Used poultices to the abdomen; quinine and port wine occasionally; ipecacuanha and pil. hydrargyri. Friction to the limbs, and a few small venesections, from four to eight ounces, as the pulse indicated.—April 16th. The urine became opaque, like decoct. cinchonæ.—April 22d. It continued opaque and purulent; patient then improving rapidly.—23d. Exposed to a cold wind.—26th. Worse. Urine resembles pale decoct. cinchonæ; face puffed. Symptoms aggravated. —May 1st. Urine clear; not better.—15th. Retrograding.—30th. Expired.

*Dissection* twelve hours after death.—The cerebral mass pale; much fluid in the spinal theca; pia mater of the medulla oblongata dark, and inflamed; its capillaries gorged.

Viscera of the thorax natural. *Abdomen.*—Mucous membrane of the ilium presents pink-coloured patches and honey-comb ulcers: interior of the cæcum, colon, and rectum is livid, and presents numerous and extensive scars of chronic ulcers. The liver weighed six pounds fourteen ounces; the right and left lobes were elongated downward and forwards, and, having embraced the gall bladder completely, extended four inches below it on each side. Thus, the fundus of the gall bladder presented itself on the anterior surface four inches above the lower margin of the liver. This offered a yielding elastic prominence to the finger in the living body, which was recorded in my examinations, and pointed out to the superintending surgeon. Thirteen deep sulci are found on the convex surface, with extensive thickening and white corrugations covered with false membranes, and resembled scars. Sections of the tissue were mostly smooth, shining, and of close texture, marbled or mottled: some patches retained the granular structure; others gradually changed to a close tissue, being pale or nearly white; and others were of a lardacious substance, and some of them semi-cartilaginous. A large branch of the hepatic vein ran from two of these latter-mentioned spots, which I think marked the site of a former abscess. The lobulus spigelii was semi-cartilaginous, and of a pale red. The convex surface contained chiefly the remaining acini; they were of a dirty yellow, and much enlarged.

*Observation.*—This case shows either that a congested state of the abdomino-portal system is announced by pains coinciding in character with rheumatism, or that in the course of a lengthened illness, serious diseases often spring up. I think the former proposition is illustrated by this case; and that the second holds good frequently. From this view, it may be inferred, that bleeding and counter-irritants might have been employed advantageously in the early period of disease.

(231.) Ætat. 41.—Thirteen years resident in India. Very stout and healthy, but prone to excesses. Married. Had very severe dysenteries, and some attacks of hepatic disease.—May 9th, 1832. Has been drinking excessively these last ten days. Passed very frequent muco-sanguineous dejections, accompanied with pain since yesterday. Pulse full and large; skin moist and clammy, cool; tongue furred yellow, and clammy. *Diagnosis.*—Intestinal tubercles and ulcers, with (most probably) hepatic abscesses. Venæsectio ad ℥xvj. statim. postea ol. ricini ℥j.; Tinct. opii g$^{tt}$. xx.; Hirud. xx. part. dol., fotus frequenter.—May 10th. Pulse 116, small and soft; tongue as if covered with white paint, clammy; skin of a natural temperature; urine extremely scanty. Stomach rejects fluid frequently; no abdominal pain on pressure. Hirud. xx. epigastrio et vj. circum anum; Calomel ℈j.; Pulv. ant. gr. vj. horâ somni; Ol. ricini ℥j.; Tinct. opii g$^{tt}$. xv. mane; Fotus frequenter. Empl. cantharid. cras epigastrio.—11th. No sleep. Pulse 104, contracted and hard; tongue furred yellow; skin dry, hot, and stinging; urine red and sparkling. Pain in the right hypochondrium on turning or pressure, which came on last night. Oil not operated. Ol. ricini ℥j. omni horâ donec dejecerit alvus; Venæsect. ad deliquium 10a. horâ. 12 M.; Hirud. vj. circum anum et perineo; Hirudin. xxxvj. part. dol. et supra pubem; Ipecac. gr. iij. in pilulæ om. horâ; Calomel ℈j. horâ somni; Emplast. canth. horâ somni part. dol.—May 12th. Urine turbid, like ale, and copious, but passed with great difficulty; rested better; pain relieved; dejections numerous, of red mucus, and small dots of purulent substance copiously interspersed, and at singularly equal distances: there are also some patches of black membranous substance. Pulse 116, natural and soft; tongue heavily furred, and clammy; skin dry; much thirst. Would not have the blister; used a hot bath last night. A similar system of treatment was continued, but

the symptoms became progressively aggravated, until death took place on the 16th.

*Dissection.*—The cerebral vessels are gorged, and some effusion between the convolutions. There is some engorgement on the posterior surface of the cord, and the cauda equina is rather dark from the same cause. *Thorax.*—Numerous chronic adhesions of the pleura, and the lungs are engorged. *Abdomen.*—The right lobe of the liver adhered to the diaphragm. There is a large scar above the gall bladder, of which the centre forms a broad deep notch or fissure (in its anterior margin) that most probably marks where an abscess had destroyed part of its tissue. There is an abscess in the liver situate immediately over the head of the ascending colon; and, adhesions having formed, it has opened into the colon, and discharged a quantity of fluid like wine lees, with some flakes of pus, into the intestine, which are found in it. This tube, and the hepatic tissue at the opening, are in a sloughing state. The kidneys are engorged. The mucous coat of the stomach, duodenum, and ilium, presents traces of congestion. The cæcum has its mucous membrane in a sloughing state, and very extensively ulcerated. The colon has its surface mostly occupied by irregular deep ulcers, of which many are in a sloughing condition, especially those near the perforation.

*Observation.*—The individual was extremely stout; and it seems most probable, that the hepatic abscess was formed before he entered the hospital. Coffee-like dejections (dark brown,) was the earliest symptoms of great danger. There is no account of hepatic pain; hence suppuration must have originated from congestion of the abdomino-portal vessels. The occurrence of intestinal ulcers is worthy of notice. I am not aware that the treatment, in this case, could have been more appropriate.

(232.) Ætat. 28.—Seven years resident in India. Mid-

dle stature, dark. Bilious temperament. Liver disease, of long standing, that has undergone various modes of treatment. Leeches gave little relief.—(Signed, J. G. Malcolmson, Assistant-Surgeon.) The patient has been twice subjected to the influence of mercury, and the side repeatedly leeched and blistered. Now complains of pains.—(Signed, J. Jameson, M. D., Kamptee.) This patient was removed to Masulipatam; and during the march used calomel, Dover's powder, ol. ricini, pulv. rhei, and occasionally astringents. Admitted under my care, in an emaciated state. The lower extremities, œdematous, and the abdomen, tumid from effusion. Twelve scanty dejections of mucus daily; cannot sleep; heartburn; oppression of the chest, and short breathing; appetite bad. Pulse 100, large, soft, and strong; tongue smooth and red, no fur; night pains general, but severest in the knees; a little fulness and tenderness in the region of the liver; skin natural. Ipec. et pil. hydrarg. āā gr. iij. M. bis die; ol. ricini pro re natâ; enema anod. ʒij. pro re natâ.—16th day. Some difficulty in passing the urine.—22d day. No improvement. The treatment is slightly varied, according to daily symptoms. —37th day. The dejections milky, and the urine resembles stale infusum cinchonæ, with a large purulent deposit. Cataplasma abdomini. Neutral salines.—40th day. Urine still opaque, with pus.—44th day. Urine purulent and opaque. Pain of the left side. Con. rem. Emplast. cantharid. part. dol.—50th day. Urine like brandy, and very scanty. Pulse 116, large, and rather strong. Venæsectio ad ʒxij.—55th day. Urine like strong decoct. cinchonæ rub. Con. rem.—56th day. Pain between the umbilicus and pubis. Hirud. viij. part. dol. The three days succeeding, leeches were repeated for the same cause, and on the third day a blister.—65th day. Dejections numerous, like dark oatmeal and water; urine scanty, and red; knees puffed and swollen, as in acute rheumatism. The capsule

apparently dilated with fluid. Calomel et opii āā gr. iss. horâ somni. Nitre-whey ad libitum.—70th day. No improvement.—80th day. Urine like infus. cascarillæ; purged; dejections muco-purulent; abdominal pain and œdema increase.—85th day. No improvement.—90th day. No improvement. The treatment has been varied according to symptoms.—97th day. Expired. The body is emaciated, lower extremities œdematous, and the belly distended with fluid.

*Dissection* twelve hours after death.—The vessels ramified over the cerebral convolutions are engorged. Effusion observed within the arachnoid. The spinal theca contained a considerable quantity of fluid; the surface of the cord is blanched, and the tortuous vessels are much engorged. Much spumous fluid contained in the pulmonary tubes; capillaries of their surfaces are injected. The heart externally blanched, and its tissue pale; surface of the aorta dark-coloured and reddish.—*Abdomen.* Mucous coat of the stomach dark from vascular engorgement. The mucus scraped off forms a reddish mass. Mucous membrane of the duodenum dark from the same cause. The jejunum and ilium have alternate patches of pale and red; and engorgement is greatly increased near the cæcum; the mucous coat there is thickened and fleshy; patches of engorgement mark the mucous membrane of the ascending colon; in some parts it is preternaturally thickened, and in others thin, as if partly destroyed by suppuration. Descending colon is irregularly corrugated in patches, apparently by the scars of chronic ulcers. Some colourless elevated ulcers are observed, particularly numerous in the sigmoid flexure and rectum. Several enlarged mucous crypts cut open contain a colourless, transparent, albuminous fluid. The liver weighs four pounds, is unusually soft, flaccid, and yielding, showing that it has recently been in a very tumid state, and had its parietes greatly distended

by a fluid suddenly and recently withdrawn. It is mottled dark; and pale yellow points are also present in a dark reddish ground. The right lobe, near the ligament, presents a large corrugated depressed white scar; sections resemble those of muscular tissue in parts, in others they are very firm, but throughout the structure is close, not granular. The gall-bladder contains a little orange-coloured aqueous bile. The pancreas is small, wasted, and sections of its tissue are dark, with great capillary engorgement. The spleen is of the natural size, forms numerous adhesions to adjacent parts; its tissue is firm, and its colour natural. The kidneys are small, flaccid, and dark-coloured; internally they are livid from capillary engorgement. Urinary bladder contained a little urine, turbid, like decoct. cinchonæ; its mucous surface is pale, but there was some engorgement of the prostate and urethra.

*Observation.*—This case, on admission under my care, appears to have been abscess of the liver, combined with congestion of blood in both distributions of the portal system. I attribute the fatal termination to the delay of general and local bleeding. The issue of this case shows that however carefully the remedial measures may be daily varied and applied, and however successful the therapeutic means may be, nevertheless, if the congested state of the portal system is not previously removed by general and local bleeding, and the balance of the circulation restored, the issue will mostly be fatal, as in the present instance. In this case, the treatment adopted did actually promote the partial transfer of pus from the abscess in the right lobe of the liver into the circulation, and its excretion by the kidneys; but the vascular system of the abdomen being in a congested state, a metastasis took place to the knee joints, and the muco-intestinal exhalations became excessively augmented. The affection of the knee joints produced acute and lancinating pains, that effectually prevented sleep and

repose; hence exhaustion advanced, unchecked by opiates, whilst incessant and copious fluid alvine discharges exhausted the powers of life. Sero-albuminous fluid was removed from the knee-joints after death, by introducing a scalpel under the tendon of the triceps femoris, immediately above the rotula; hence, by that course, fluid may be evacuated.

THE END.

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