Researches on the pathology of the intestinal canal. Part III. On the diseases of the mucous membrane / by John Abercrombie.

RESEARCHES

ON THE

PATHOLOGY OF THE INTESTINAL CANAL.

Part III.

ON THE DISEASES OF THE MUCOUS MEMBRANE.

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PATHOLOGY OF THE INTESTINAL CANAL.

PART III.

ON THE DISEASES OF THE MUCOUS MEMBRANE.

THE internal coat of the intestinal canal is to be viewed in the double light of a mucous membrane and an absorbing surface. It is in the former view that it is chiefly to be regarded as the seat of active disease; but it is evident, that such disease must influence in a great degree its function of absorption, and that this must have an important relation to the effects which will be produced on the system. The morbid conditions of it, which chiefly deserve our attention, are referable to inflammation, acute or chronic, and the various effects or terminations of inflammation, as thickening, erosion, and ulceration.

Sect. I.—*Symptoms of active Inflammation of the Mucous Membrane.*

As the disease at its commencement frequently excites little attention, the first symptoms are not well ascertained. When it comes under our view as an object of practice, we generally find more or less diarrhœa, with pain in the abdomen, which is sometimes extensively diffused over it, and sometimes confined to a particular part. It is usually increased by pressure, when the pressure is rather firm, but without that acute sensibility to a slight touch which attends inflammation of the peritonæum; it differs from peritonæal inflammation also, in being less affected by inspiration and by motion, so that the patient can often bear the erect posture with little inconvenience. The pain, in general, varies very much in degree, leaving long intervals of ease, and then occurring in paroxysms of violent tormina; these are generally followed by discharge from the bowels, but may take place without any discharge following them. In some cases, however, the pain is more permanent, so as more nearly to resemble the pain of enteritis. In general, there is frequency of pulse, with thirst, febrile oppression, and a brownish fur on the tongue; but, in some cases, the pulse is little above the natural standard through the whole course of the disease. There is frequently vomiting, but not urgent, and sometimes a peculiar irritability of the stomach, so that any thing taken into it excites a burning uneasiness, and this is usually followed by an irritation of the bowels, with a feeling as if the article which was swallowed almost immediately passed through them.

The evacuations from the bowels vary very much both in appearance and frequency. In some cases they are slimy, and in small quantity; in others, they are copious; sometimes they are watery and dark coloured; sometimes whitish; frequently yellow and feculent, as in a common diarrhœa; and sometimes articles of food or drink pass through nearly unchanged. They are in some cases extremely frequent, the patient being called to stool every ten or fifteen minutes; in others, the disease may be going on rapidly to a fatal termination, while the bowels are not moved above three or four times in the day. No diagnosis of the disease, therefore, can be founded either on the frequency of the evacuations, or on the appearance of the matters evacuated. In some cases there is tension of the abdomen, but in others this is wanting; and it may appear and disappear several times in the course of the same case.

With these varieties in the symptoms, the disease may go on for some time before its real nature is suspected; it may be considered as a common diarrhœa, and thus excite little attention and no alarm. In the farther progress of it there are considerable varieties. It may be fatal in one or two weeks, or it may extend to five or six, or it may pass into a chronic state, forming a disease analogous to that which has been called Lientery, and in this form may be drawn out to many months, and be at last fatal by very gradual exhaustion. Its fatal terminations in the active state are two, (1.) A peculiar rapid exhaustion, such as is not accounted for by the frequency of the evacuations, which often bear no kind of proportion to the constitutional effects that take place. (2.) By passing into peritonæal inflammation or enteritis. In this case the diarrhœa usually ceases a few days before death. The pain increases, with acute tenderness of the abdomen, often with vomiting and all the usual appearances of enteritis.

The diagnosis is often difficult. The disease should be suspected when there is diarrhœa with much pain, and the pain increased by pressure. If these symptoms are accompanied by fever, the case is still more suspicious, but fever, as I have already stated, is frequently wanting. The disease occurs both in an idiopathic form and as a symptomatic affection. In the latter case, it appears as an attendant on continued fever, and may either exist from the commencement of the fever, or may begin at an advanced period of it. It seems occasionally to accompany or follow other febrile diseases, especially measles, and there is reason to believe that it may supervene upon affections of the bowels, which, at first, were free from any dangerous character,—a case beginning like a simple diarrhœa, and after it had gone on for eight or ten days, the symptoms appearing which indicate this affection. In a less active form it follows many diseases of a scrofulous nature, forming a colliquative diarrhœa. The causes of the idiopathic cases are not well ascertained. It is sometimes ascribed to cold; in women especially to exposure to cold during the flow of the menses. It is probable, also, that it may be induced by acrid ingesta of various kinds, drastic purgatives in over doses, and by the mineral poisons.

The appearances, on dissection, vary considerably, according to the period of the disease at which the fatal event takes place. When this happens at an early period, we find the mucous membrane covered with irregular patches of inflammation, which are, in general, sensibly elevated above the level of the sound parts. They vary exceedingly in extent in different cases, in some ex-

tending over a great part of the canal; in others, being confined to a very small portion of it, frequently about the lower end of the ileum, or the head of the colon. They vary also in size, consisting, most commonly, of patches one or two inches in diameter, with sound portions interposed betwixt them, above which they are sensibly elevated. In other cases, but I think less frequently, a considerable extent of the canal is of a continued uniform redness.

The inflamed portions are in some cases covered by a brownish tenacious mucus; in others, by coagulable lymph, and frequently the surface of them is studded with minute vesicles, which, at a more advanced period, seem to pass into very small ulcers. In other cases small round portions of the membrane are observed of a grey colour and soft pultaceous appearance, are found to be easily separated, and to leave ulcers. In the cases which have gone on to a more advanced period, we find ulcers of various extent and appearance. In some examples, they are of the same colour with the surrounding parts, and merely appear as if a portion of the membrane had been dissected out. In other cases they are more decidedly ulcers, covered at the bottom with yellowish sloughs, often with elevated edges, and surrounded by a ring of inflammation, and sometimes penetrating to such a depth as completely to perforate the intestine. These different appearances seem to be different stages of the same disease; for we may sometimes observe one of these penetrating ulcers, surrounded by a larger circle of abrasion, without evident ulceration, and this by another ring of inflammation; this outer inflamed portion being probably covered by the very minute ulcers or small vesicles formerly mentioned. The appearances which I have now described seem to be the most common; but cases occur in which an extensive portion of the mucous membrane is black and gangrenous, and sometimes an extensive portion has been found to be separated, so as to expose the muscular coat, or even the peritonæal. Cases are also described which have recovered, after a portion of the internal coat had been thrown off in this manner, in one continued cylinder of great extent. The external surface of the intestine is sometimes healthy; in other cases there are spots of obscure redness corresponding to the inflamed portions of the mucous membrane. The cases which terminate by peritonæal inflammation or enteritis, have the appearances usual in these affections, and in the cases in which the ulcers penetrate the intestine, effusion of coagulable lymph, lividity, or gangrene, to a small extent, may often be observed on the outer surface, surrounding the perforations.

Sect. II.—*Of the Disease in Infants.*

Acute inflammation of the mucous membrane appears to be a frequent disease of infants about the age of six or eight months, and it forms a most interesting subject of research. The most important point in the investigation relates to the means of distinguishing the disease, in its early stages, from the ordinary bowel complaints of children about the period of dentition, and this is, in general, a matter of considerable difficulty. The principal point to be kept in view in the diagnosis is, that it is a febrile disease; the infant is usually hot and restless in the early stages, with thirst, and the tongue is dry, or covered with a brownish crust; there is, in general, a good deal of screaming and fretfulness; bad sleep; frequently vomiting; and, in many cases, pressure on the abdomen seems to give uneasiness. In many instances the disease assumes very much the appearance of the affection which has been called the remittent fever of infants, a term which I suspect has been applied to various febrile affections, which are merely symptomatic. The bowels are loose; but, as I have already observed, in regard to the disease in adults, the looseness of the bowels is by no means a prominent symptom in every case; for, even in the advanced stages, the bowels may not be moved above three or four times in 24 hours, while the disease is advancing rapidly to a fatal termination. In other cases this symptom is more urgent; the evacuations are preceded by much restlessness and appearance of pain, and the matters evacuated are sometimes discharged with a singular force, so as to be propelled to some distance. The evacuations vary much in appearance, and I have not been able to satisfy myself that any reliance is to be placed on them in ascertaining the disease. They sometimes consist of a reddish-brown mucus, sometimes of a pale clay-coloured matter, and sometimes of a dark watery fluid; but, in many cases, they shew little deviation from the healthy state, while in many, their appearance is evidently disguised and modified by articles of food or drink, which pass through nearly unchanged. The disease, in fact, often goes on for some time without exciting alarm, or being distinguished from an ordinary diarrhœa, until attention is strongly and suddenly directed to the dangerous nature of it, by the occurrence of constitutional symptoms, which do not appear in the ordinary bowel complaints of children. These consist, in some cases, of a great degree of febrile oppression, with dry crusted tongue, thirst, and vomiting; in others of a very sudden and rapid exhaustion of the vital powers, which is unex-

pected, and is not accounted for by the frequency of the evacuations, and sometimes of the sudden appearance of coma, with a peculiar hollow languid state of the eye, and a pale waxen look of the whole body, while the pulse, perhaps, is of tolerable strength. These symptoms may appear while the disease has been going on for a short time, and the evacuations have been by no means frequent; while the disease, in a word, was not to be compared, either in its continuance or the frequency of the evacuations, with the ordinary bowel complaints of children, which often go on for a long time without producing any inconvenience.

The causes of the disease are not well ascertained. It frequently occurs about the period of dentition, and in many cases appears to be connected with weaning. The fatal terminations are either by a rapid and peculiar sinking of the vital powers, or by coma. On dissection we usually find the affection in what may be considered as the first stage. In various parts of the inner surface of the intestine, particularly the ileum, there are irregular patches of inflammation, slightly elevated above the level of the surrounding parts, and often covered with the minute vesicles, or minute ulcers, formerly mentioned. I have not seen it, as in adults, pass either into more extensive ulceration, or into peritonæal inflammation. Effusion in the brain is met with in the cases which terminate by coma. This termination is often preceded by a remarkable scarcity of urine, amounting, in some cases, nearly to a suspension of the secretion; but I have not ascertained whether this symptom be confined to the cases which terminate by coma.

Sect. III.—*Of the Chronic Form of the Disease.*

The disease, in its chronic form, may supervene upon the acute, or it may come on gradually without any acute symptoms. After it has continued for some time, we generally find the patient considerably emaciated, often with a peculiar withered look. There is an untractable diarrhœa, which, in some cases, is permanent; in others, occurs at short intervals, continuing for a few days at a time, and alternating with costiveness. In some cases the appetite is good, or even voracious; but, in general, it is variable and capricious, with indigestion and great uneasiness after eating, and sometimes every thing that is taken into the stomach produces a peculiar uneasiness, which passes downwards into the bowels, and is only relieved after repeated evacuations. If by opiates or astringents the diarrhœa be re-

strained, the uneasiness in the stomach is generally much increased, and in some cases vomiting is excited. In other cases, vomiting regularly alternates with the diarrhœa, the patient being for a few days at a time affected with frequent vomiting without diarrhœa, and then for a few days with diarrhœa without vomiting. Remedies given in such cases to alleviate the one lead to the other, or they may alternate without any interference. There is generally pain in the abdomen, but it varies much both in degree and duration; in some cases it only appears in the form of tormina preceding the evacuations; in others it is more permanent, and is increased by pressure.

The matters evacuated vary much in appearance, being sometimes fluid and feculent, frequently white, and sometimes composed of a mixture of half-digested articles, with the addition of recent bile, or a brownish mucus, which appears to be the production of the diseased surface. In some cases there are discharges of venous blood, which may either appear in the form of coagula, or as a dark pitchy matter, giving a dark colour to the whole of the matter discharged.

Some of the chronic cases appear to go on for a considerable time without much disturbance of the general health; but, in others, there is much weakness and emaciation; frequently hectic paroxysms; and sometimes a rawness or tenderness of the mouth and fauces, with aphthæ or minute ulcers, often accompanied by a tenderness of the œsophagus, and a painful burning sensation in the stomach after eating.

The appearances on dissection shew the disease in various stages. In some cases, even after the symptoms have existed for a considerable time, we still find it in the form of irregular patches of a fungous appearance, and a dark red colour, slightly elevated above the healthy parts. In others, we find distinct small ulcers, with round elevated edges, and sometimes more extensive irregular ulceration, with ragged edges. Frequently the coats of the intestine are thickened at the ulcerated parts, sometimes to such a degree as considerably to diminish the area of the intestine. In such cases, the ordinary symptoms of the disease are apt to alternate with attacks of obstinate costiveness, and they are frequently fatal by ileus. In some cases, instead of ulceration, the inner surface of the diseased parts is studded with numerous tubercles, of various sizes, and sometimes an extensive tract of intestine is found covered with smooth cicatrices of ulcers, which have healed. In some of these cases, the symptoms have continued, and gone on to their fatal termination in the usual manner. In others, this appearance is found after the symptoms have ceased, and the patient has died of

some other disease. Cases have also occurred in which the patients died of emaciation, after the symptoms had ceased, apparently from these cicatrices being so extensive as to interfere with the process of absorption.

Sect. IV.—*Examples of the principal Forms and Terminations of the Disease.*

§ I.—*The active Form of the Disease.*

Case I.—Many years ago, a woman, aged 25, was admitted into the Infirmary of Edinburgh, affected with pain over the abdomen, tenesmus, and diarrhœa. The pain occasionally intermitted, and was most severe upon going to stool, and on passing urine. The evacuations were free from scybalæ or blood. She had thirst, headach, some cough, nausea, and occasional vomiting, a pale emaciated look, pulse 72. Ascribed her complaints to cold; and they had been gradually increasing for three weeks. Various remedies were employed, without benefit, consisting chiefly of opiates, absorbents, and calomel. The disease went on for eight days more, with various remissions and aggravations.

2d day.—Two stools; severe tormina, which were relieved by fomentation.

3d day.—Nearly free from tormina; one stool, which seemed to consist of broth which she had recently taken, little changed.

4th day.—Two scanty evacuations, without griping; abdomen hard and painful; vomited once; a mild enema produced a copious discharge, and relieved the tormina.

5th day.—Less pain; vomited several times; one stool, thin and feculent; pulse 78; took gr. vi. of calomel.

6th day.—Two stools; one of them thin and feculent; the other much tinged with blood; much pain before the evacuations; abdomen tense and painful; pulse 80; vomited a considerable quantity of slimy matter, tinged with blood, and having some pus mixed with it. Took gr. viii. of calomel.

7th day.—Two stools; thin, feculent, and of a natural appearance; preceded by much pain; vomited repeatedly some greenish slimy matter, mixed with bloody pus; less tension of the abdomen; pulse from 60 to 70. Took calomel with opium.

8th day.—No stool; and no vomiting. Died in the night.

Dissection.—The vessels on the stomach, duodenum, and jejunum, were unusually distended with blood. The ileum was livid, with some adhesions. Its internal surface was quite black; and it contained dark-coloured slimy matter, mixed with very fetid pus. The colon on the left side was livid, with adhesion to the abdominal pa-

rietes, and to the lower part of the omentum, which also was livid. Between these parts there was much fetid pus.

Case II.—A girl, aged 6, was affected with severe and obstinate diarrhœa, which reduced her to great weakness and emaciation. It continued from three to four weeks, and then subsided, and was succeeded, after a short interval, by severe pain in the belly, headach, and vomiting; the bowels being then rather bound; the pulse was from 30 to 40 in a minute; the urine was high-coloured, and much diminished in quantity. The headach continued with vomiting, and a constant spasmodic motion of the right arm and leg; and, after seven days, she sunk into coma, and died in two days. The pulse continued from 30 to 40 till a day or two before death, when it rose to 70 or 80. I did not see this case during the life of the patient, who was treated in the most judicious manner by an intelligent practitioner. I was present at the examination of the body. *Dissection.*—There was considerable effusion in the ventricles of the brain; and a lacerated opening in the septum lucidum, surrounded by a ring of inflammation. The inner surface of the ventricles was remarkably vascular, and in some places very soft and broken down. In the anterior part of the left hemisphere, a portion of the brain was darker in the colour, and firmer than natural, and contained some hard tubercles. The inner surface of the caput coli, and of a great part of the ascending colon, was of a dark red colour, and covered with numerous patches of a dark red fungus, which were considerably elevated above the level of the surrounding parts. The other viscera were healthy.

Case III.—A girl, aged 9, was seen by Dr Alison in December 1819, affected with the usual symptoms of contagious fever, which was prevalent in a narrow and crowded lane where she resided, and had affected a person in an adjoining room. From the commencement of the disease, she had diarrhœa, with griping, and considerable tenderness of the abdomen, and the evacuations were thin, feculent, and of a natural appearance. These symptoms continued, with frequent pulse, and foul dry tongue, till two days before her death, when the diarrhœa suddenly subsided, and was succeeded by violent pain, acute tenderness of the abdomen, and every symptom of peritonæal inflammation. The duration of the case was about three weeks. I did not see it during the life of the patient, but am indebted to Dr Alison for the above outline of it, and for an opportunity of being present at the examination of the body. *Dissection.*—There was considerable peritonæal inflammation, especially on the ileum, where there was extensive adhesion, with considerable deposition of coagulable lymph in flocculi. The adhering parts were also in several places perforated by small ulcerations, through which some feculent matter had escaped into the cavity of the peritonæum. The ileum being laid open, discovered a most extensive tract of disease, on its inner surface, the mucous membrane being extensively eroded, and in many

places completely destroyed, by round well-defined ulcers, some of which were as large as a shilling. The lower extremity of the ileum was the principal seat of these ulcers; but the disease extended over a great part of that portion of the small intestine; and, in several places, its coats were considerably thickened. The higher parts of the small intestine were healthy. The colon was collapsed, and externally healthy; internally there were in several places, especially on the left side, patches of inflammation on the mucous membrane; but they were slight and recent, and without any appearance of ulceration. The ileum contained a considerable quantity of fluid feculent matter, which was quite healthy in its appearance. In the higher part of the small intestine, there was a small quantity of dark-green viscid fluid, like inspissated bile. The colon contained only a small quantity of mucus, of a healthy appearance; other viscera sound.

As in this case there was considerable reason to believe that the original disease was contagious fever, the affection of the bowels may perhaps be considered as symptomatic. This occurred more distinctly in a case mentioned by Dr Duncan junior, in which the disease in the mucous membrane seemed to commence about the 23d day of the fever. The case was fatal in nine days more, and, on dissection, the disease was found nearly in the state of simple inflammation. At various parts of the mucous membrane, from the jejunum to the rectum, there were purple patches occurring, at first at intervals of an inch or two inches, and then running gradually more and more into each other, until, towards the termination of the ileum in the colon, the whole surface of the mucous membrane exhibited a deep purple hue. The mucous membrane of the caput coli had a similar appearance, but the arch was almost entirely free from it. It occurred again at the sigmoid flexure, and in the rectum, in addition to the venous congestion, numerous fungous looking patches presented themselves, from a quarter to half an inch broad, and elevated fully an eighth of an inch above the surface of the intestine. They had a very vascular appearance, but their surface was covered with a thin yellowish crust. This patient (a woman aged 60) seemed to be convalescent from fever with petechiæ, when about the 23d day of the disease she was attacked with diarrhœa without any complaint of pain,—the stools fetid and dark coloured,—the pulse varying from 80 to 100,—after six days she had considerable pain and bloody evacuations, and died exhausted on the 9th.

This symptomatic form of the disease is the affection which has lately excited much attention in France, under the name of Fièvre Entéro-Mésentérique, and has given rise to a very keen controversy in regard to the nature of it; one party contending that it is symptomatic of common fever,—the other

that it constitutes a peculiar species of fever, of which the affection of the mucous membrane is a primary and essential phenomenon. Numerous examples of it, in the state of simple inflammation, erosion, and ulceration, are described by Petit.*

The following cases afford striking examples of inflammation of the mucous membrane in various stages of its progress, and in forms which may probably be considered as idiopathic:

Case IV.—A girl, aged 5, had headach, anorexia, bad sleep, nausea, mucous vomiting, frequent pulse, dry skin, and pain of the abdomen, increased by pressure; bowels at first rather bound. Seemed much better after an emetic, and was thought convalescent for several days; but was then suddenly seized with violent looseness, which nothing could restrain; was rapidly exhausted, and died in ten days. The stools were liquid, greyish, and very fetid. *Dissection.*—The small intestines were discoloured, and on various parts of their surface, there were round red spots under the peritonæal coat, which corresponded with inflamed spots on the mucous membrane. The great intestine was of a "rose-violet colour," which was deepest towards the rectum; the serous membrane seemed inflamed, and the parietes thickened. Two inches from the valve of the colon, there was in the inner surface of the ileum a large round ulcer with irregular edges, the bottom greyish and rugous, and easily torn off. Near it there were three other ulcers of the same character, but smaller. The mucous membrane between these ulcers was pale, and covered with numerous small black spots, which extended through the whole thickness of it. They were also seen on the valve of the colon, and on the appendix vermiformis. The mucous membrane of the lumbar colon of the right side was of a pale rose colour, and covered with small black spots, each of which had a grey circle round it; these circles were formed of a soft pulpy matter, which was easily raised, and discovered ulcers well defined, as if a piece had been cut out, the black points coming off along with the pulpy matter. In the transverse colon, there were other ulcers in the mucous membrane, covered by a thick grey matter, and increasing both in breadth and depth; their edges becoming more and more elevated, hard and fungous, and of a violet colour. In the descending colon, the ulcers ran so into one another as to present nearly one continued surface of ulceration. The mucous membrane was not observed at all, but a close succession of deep irregular ulcerated excavations, separated by fungous eminences, which were covered with black and red spots. In some places the ulceration had extended so deep as to destroy the muscular coat. The cavity of the rectum was full of a grey ichorous fetid matter.†

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* Traité de la Fièvre Entéro-Mésenterique.

† Cloquet, Nouveau Journal de Medicine, Tome I.

This may be considered as an idiopathic example of this disease, fatal by that peculiar exhaustion which accompanies it, and which is much more rapid than simple exhaustion, depending merely upon the frequency of the evacuations. The following case affords an example of another termination of it, by the inflammation extending to the peritonæal coat.

Case V.—A girl, aged 7, * had symptoms similar to the preceding, and being treated upon the same plan, was considered as convalescent. After six days, she was seized with vomiting and copious diarrhœa, with constant acute pain in the abdomen, which was painful on pressure, but not enlarged. After eight days the pain suddenly increased, the belly became enlarged, with great sensibility, hiccup, vomiting, and all the signs of peritonæal inflammation, which in seven days was fatal. *Dissection.*—Peritonæal inflammation, with recent adhesions and serous effusion, in which there were flocculi of coagulable lymph. Near the end of the ileum, there was a round opening through which feculent matter had escaped. This opening had its origin in a large and deep ulcer on the inner surface of the intestine, much more extensive on the inside than the outside; its edges were elevated, hard and tubercular on the inner side, but thin on the outside. Near it were two other erosions of the mucous membrane, less extensive and less deep, and surrounded with black spots; other parts sound.

Case VI.—A girl, aged 9, † had obstinate dysentery for two months, and was reduced to extreme emaciation. The pain then increased, the belly became tender to the slightest pressure, with all the symptoms of peritonæal inflammation, which was fatal in 23 hours. *Dissection.*—Extensive inflammation and adhesion of the intestines to each other, and to the abdominal parietes on the right side. There were also many livid spots, elevated, with thickening, and some ulceration of the coats of the intestine. About the middle of the ileum there were three ulcers of the mucous membrane, similar to those described in the preceding case.

This extension of the inflammation from the mucous membrane to the other coats of the intestine, seems to be a frequent termination of the disease. I have formerly described a remarkable case of it; in which unmanageable diarrhœa, of two or three weeks duration, was succeeded by symptoms of enteritis, which was fatal in two days. (Part II. Case XIII.) It occurred also in Dr Alison's case, Case III. of this paper. I have already expressed doubts whether some of the cases which I formerly considered as peritonæal inflammation, may not

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* Cloquet, Nouveau Journal de Medecine, Tome I.

† Cloquet, *ut supra.*

have been really of this nature, particularly Cases II. and III. of Part II. In Case II. it is not improbable that inflammation of the mucous membrane had existed for some time, and that the disease was arrested by the treatment there described, when the inflammation was spreading to the peritonæum.

The colliquative diarrhœa of phthisical patients, and untractable affections of the bowels analogous to it, which supervene on various scrofulous diseases, seem to be often connected with inflammation and ulceration of the mucous membrane. In such cases I believe the ulcers are generally small, and sometimes the disease has not advanced beyond the state of chronic inflammation, with inflamed patches of a fungous appearance, a little elevated above the sound parts. In the following case the disease was in a more severe form.

Case VII.—A boy, aged 11,* had scrofulous disease of the left elbow-joint, for which he suffered amputation, and the stump healed favourably in sixteen days. About this time he was seized with pain of the breast and belly, and diarrhœa. The pulse was small and sharp; the tongue white; the belly was painful on pressure; the evacuations were copious, of a greyish colour, and fetid. He died in about three weeks.

Dissection.—There was effusion in the pericardium; the lungs were tubercular, and much diseased. The peritonæum was inflamed, and covered with lymph and miliary tubercles, like those of the lungs. The intestines were of a red-violet colour, with dark irregular spots. The inferior extremity of the ileum, the cæcum, and the sigmoid flexure of the colon, were pierced by small fistulous openings, which were surrounded externally by dark spots, and internally had their origin in large and deep ulcers of the mucous membrane, with elevated, reverted, and tubercular edges. They were most numerous in the large intestine, but did not extend to the rectum, the mucous membrane of which was only injected, and marked with red spots. In the inferior part of the cæcum there was a diseased mass, resembling the ulcerations, the size of a small egg. The mesenteric glands were enlarged, and contained soft tuberculous matter. The liver adhered to the stomach and the diaphragm, and on the omentum there were scirrhous granulations.

There are many other cases on record, which illustrate the phenomena of this important disease. A man, aged 60, whose case is described by Dr Duncan junior, was affected with diarrhœa, and pain about the umbilicus, which was not increased by pressure. The evacuations were frequent, yellow, and generally fluid, and were preceded by tormina; they were excited by taking food or drink. His pulse was natural, and his appetite good; but he was deterred from taking either food or drink,

* Cloquet, *ut supra.*

from the fear of inducing the diarrhœa. The disease resisted all the remedies that were used, and, without any particular change in the symptoms, was fatal in six weeks. On dissection, there were found marks of peritonæal inflammation; the descending colon and rectum were found much thickened; and, "at several places, the internal membrane of the intestines was partially, and at others entirely removed, marking the intestines as small-pox does the skin. In the cavity of the abdomen, about lb. vj. of a light yellow serum, with flakes of a similar colour." * A young man, mentioned by Morgagni, † was seized with tormina, with frequent bloody stools, which, after 15 days, was changed into a yellow diarrhœa, without tormina. This was soon followed by tertian fever, which terminated in a month. The diarrhœa still continuing, he was then seized with acute fever, which was fatal, with stupor, in 14 days. The termination of the ileum, and the commencement of the colon, were, for a considerable space, eroded, ulcerated, and in some places gangrenous on the inner surface. In many places, the intestine was perforated by the ulcers.

§ II.—*Examples of the Disease in Infants.*

Case VIII.—An infant, aged 6 months, (13th May 1817,) had been affected for about a week with looseness of the bowels, and occasional vomiting. The complaint was considered as the common bowel complaint of dentition; but the stools were scanty, offensive, and dark-coloured, and though they were not very frequent, there was frequently observed a considerable tendency to sinking, with paleness and coldness of the body. After several days, the stools became natural, the vomiting ceased, the appetite returned, and the looseness was extremely moderate. These favourable appearances, however, were of short continuance. On the evening of the 18th, the looseness suddenly increased; it was excited by every thing that was taken into the stomach, and the articles taken seemed quickly to pass through. On the morning of the 19th, I found her pale and exhausted; and though the looseness was checked by opiate injections, every attempt to support her was in vain. She died in the afternoon, having lain through the day in a state of oppression resembling coma.

Dissection.—The bowels were externally healthy, except some spots of superficial redness. On the inner surface of the small intestines there were, in many places, irregular patches of inflammation; and, in other places, there were spots of limited extent covered with

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* Clinical Reports, p. 133. † De Causis et Sedibus, Ep. XXXI. § 2.

minute ulcers. These spots were whitish, or ash-coloured, of a honeycomb appearance, and were slightly elevated above the level of the surrounding parts; and on the external surface of the intestine, corresponding with several of them, there were the spots of circumscribed redness, or increased vascularity. The mesenteric glands were enlarged; other viscera healthy.

Case IX.—An infant, aged 7 months, soon after weaning, was suddenly seized with vomiting and purging: was oppressed, fretful, and feverish: the stools were scanty and varied in appearance, being sometimes brownish, and sometimes pretty natural. After a day or two, the vomiting ceased; the looseness continued, not severe, nor very frequent, but accompanied by much oppression and feverishness, a brown fur on the tongue, and a remarkable dryness of the gums; the stools varying in appearance as before. Various remedies were now employed with little benefit. After four or five days, the child became comatose. This was relieved by blistering on the neck, and a purgative of calomel. The stools then became green, but generally scanty and watery. The febrile state continued, with the fur on the tongue. The child sunk gradually, with oppressed breathing, and died on the 9th day.

Dissection.—The bowels externally appeared healthy, except that on various parts of the small intestines there were spots of redness, which had not the appearance of superficial inflammation, but of red surfaces situated beneath the peritonæal coat, that coat itself being healthy. At the parts corresponding with these spots, the inner membrane was elevated into irregular patches of inflammation, and the inflamed surfaces were covered by very minute ulcers. In the neighbourhood of these inflamed portions, the mesentery was unusually vascular. The colon was collapsed, and externally healthy; its inner surface presented an unusual appearance, being in many places covered by very minute vesicles, scarcely elevated above the surface of its inner membrane, but shining through it, clear, transparent, and watery; they were most numerous in the caput coli, but were observed through the whole course of the colon; and they were the only morbid appearance in the colon, there being no vestige either of inflammation or ulceration.

These two cases will serve to exemplify the disease as it occurs in infants. The following case, for which I am indebted to Dr Oudney, exhibits the disease at a more advanced age.

Case X.—A girl, aged 3 years, was attacked about three weeks before her death with vomiting, frequent calls to stool, and uneasiness in the abdomen; the evacuations were reported to have been frequent, slimy, and fetid. After eight or ten days, when Dr Oudney first saw her, she had frequent irregular febrile paroxysms; the abdomen seemed to be painful on pressure; she had frequent stools of a clay colour, and she vomited often; her tongue was white; there was urgent thirst, especially during the febrile paroxysms. In this

state she continued until a few days before death, when she became oppressed, and partially comatose; screamed frequently, and expressed great unwillingness to be moved. The febrile exacerbations still continued, the pulse varying from 130 to 150, and she had frequent stools, which were now of a dirty green colour, mixed with specks of yellow. The pupil was natural, and continued sensible to light until a few hours before death, which happened on 8th February 1820. *Dissection.*—The ileum, from its termination in the colon to near the jejunum, was highly vascular, its minute vessels appearing as if injected. Its mucous membrane was covered with numerous irregular inflamed patches, which had a fungous appearance, considerably elevated above the level of the sound parts, and covered with small ulcerations. Some of these patches were the size of a shilling, others smaller, they were generally at the distance of an inch or two from each other, and the membrane in the intervals was healthy. The mesenteric glands were greatly enlarged, and very vascular.

§ III.—*Examples of the Chronic Form of the Disease.*

Case XI.—A lady, aged 35, died in April 1818, after having suffered for nearly four years from a diarrhœa which had resisted every remedy. I saw her a few weeks before death, and found her pale, withered, and emaciated, with frequent pulse, slight cough, and considerable uneasiness in the abdomen. The diarrhœa occurred several times every day, and the stools were thin and feculent, and not unnatural in their appearance. At the commencement of the complaint she had suffered much from pain in the bowels, and occasionally through the whole course of it, but it was not constant, nor confined to any particular part. A variety of remedies had been employed at different times, and frequently the disease had been restrained by them for some time, but it always returned after a short interval with the same violence as before. She had no vomiting, the cough had begun within the last year of her life, and was never severe. For some time before her death she had aphthæ of the throat. *Dissection.*—The bowels were externally healthy, except in several places of the small intestine, large spots of a dark red colour, which seemed to be deep-seated, as if shining through the peritonæal coat. At the places corresponding with these spots, the mucous membrane was elevated into patches of a fungous appearance and dark red colour, and on these portions there were numerous small oval ulcers, the bottoms of which were smooth and pale, while the parts around were of a dark red. At these ulcers, the intestine, when held up to the light, was semitransparent, they were found wherever the dark fungous appearance existed, and this was on a considerable part of the small intestines in irregular portions, some of which were six or eight inches in length. The colon was externally healthy; internally, there were many small ulcers, which had a different character from those on the

small intestines. They were more distinctly ulcerated at the bottom, few of them larger than the diameter of a split pea, but each surrounded by a firm elevated margin, and there was no discoloration of the surrounding parts. They were chiefly observed in the ascending colon and the arch. On the inner surface of the stomach, near the pylorus, and of the œsophagus through its whole extent, there were observed numerous very small erosions, of an oval shape, and scarcely larger than the diameter of a pin-head. The lungs were tubercular, and in the left lobe there were several small abscesses. The other viscera were sound.

In this case I think it probable that the original disease was in the colon, where the ulcers appeared to be of long standing. Those in the small intestine were probably more recent. The following case shows the disease in a more violent form:

Case XII.—A girl, aged 13. Her complaint began about a year before her death, with pain of the abdomen and frequent vomiting. The bowels were at first natural, but soon became loose; and from that time she was almost constantly affected either with diarrhœa or vomiting, and sometimes with both at once. She became gradually emaciated, but was not confined to bed until a month before her death, which happened in June 1814. When I saw her about a week before she died, she was emaciated to the last degree, with some cough, and a small frequent pulse. She had still frequent diarrhœa and vomiting, and complained of constant pain in the bowels, which was increased by pressure, but the abdomen was soft and collapsed. *Dissection.*—The caput coli was dark-coloured, hard, and much thickened in its coats; internally, it was much eroded by ulceration, and the disease extended in the form of numerous smaller ulcers, about three inches along the ascending colon. The valve of the colon was destroyed by ulceration. The lower end of the ileum, to the extent of about eighteen inches, was distended, thickened in its coats, externally of a reddish colour, and internally covered by numerous small ulcers, varying in size from the diameter of a split pea to that of a sixpence. They were clean and well defined, as if a piece had been cut out. The lungs and all the other viscera were healthy.

Case XIII.—A boy, aged 12,* about eighteen months before his death, suffered for some time from severe and obstinate diarrhœa, and from that time he was much troubled with pain in his bowels, and was liable to occasional diarrhœa, and to vomiting. The vomiting occurred especially after a full meal, and he suffered occasionally from pain in the lumbar region, which was aggravated by the erect posture. On the 22d May 1819, he had severe pain in the lower part of the back, but did not complain of his belly, and there was

* London Medical Repository for December 1819.

neither fulness nor tenderness of the abdomen. Pulse 120. Bowels had been moved four times the day before, and once in the night. (23d.) Pulse 100; pain abated; no stool; sunk rather unexpectedly, and died in the night. *Dissection.*—A part of the ileum was found much contracted, and its coats much thickened. Above and below this part, there were small ulcers of a honey-comb appearance, with hard and thickened edges; the surface of them was of a dark cineritious appearance, and the coats of the intestines felt hard and knotty. The inner surface of the strictured part was also ulcerated. Below this part, there was a portion of a dark livid colour, and below that, another contracted and indurated part, which occupied the last three inches of the ileum. In this part there had been numerous ulcers, some of which had healed and left hard cicatrices, and the whole inner surface of this portion was puckered, ragged, and irregular, and the area of the intestine very much contracted.

It is by the thickening of the intestine which occurred in these cases, at last destroying the muscular action, that the disease is sometimes succeeded by obstinate costiveness or ileus. A gentleman, whose case was communicated to Dr Monro by Dr Sanders, had been liable for twenty years to heartburn and occasional vomiting, and generally had five or six liquid stools every day, which were sometimes slimy and streaked with blood. He was afterwards affected with such obstinate costiveness that he had no stool for nine days. After this the diarrhœa returned, with vomiting, and he died at last with great distention of the abdomen and costiveness. The intestines were found extensively adhering to each other; and an extensive portion of the ileum was distended, very much thickened in its coats, and internally covered with various tumors, indurations, and ulcers. *

The following case shows the state of the disease, when the patient died of another affection, while the symptoms were going on.

Case XIV.—A man, aged 72, was affected with diarrhœa, and acute lancinating pain in the abdomen; he had voracious appetite and good digestion. Various remedies were employed without benefit for four months and a half, at which time he was seized with an affection of the brain, and died comatose in six days. *Dissection.*—Extensive serous effusion in the brain, and a suppurating tumour in the right hemisphere. On the small intestine there were some adhesions, and many dark spots. The middle part of it adhered to the left side of the colon at its lower part, and at this place a free communication had taken place between them by a ragged irregular open-

* Monro's Morbid Anatomy of the Gullet, p. 306.

ing, with loose ragged edges. There were numerous ulcers in various parts of the mucous membrane of the small intestine, which corresponded with the dark spots on the outer surface. These ulcers were round, with elevated edges; the bottom of them was grey, unequal, and covered with mucus. *

The symptoms may be equally severe, though the disease be less extensive. A woman, above 30 years of age, had been for some time affected with pectoral complaints, and a fixed pain in the umbilical region. She had then, after repeated injuries from falls, a pain in the left lumbar region; which prevented her from sitting, though she was able to walk. This continued three months, and was succeeded by amenorrhœa, with hemorrhage from the anus. This ceased after three months, the menses returned, and she was affected with diarrhœa. The diarrhœa ceased, and was succeeded by a grey discharge from the vagina, which continued for several months, and was succeeded by intermittent fever. This succession of disorders terminated in diarrhœa, which continued a year, and was then fatal. The evacuations were accompanied by severe pain, and consisted of various matters, mucous, ropy, and shreds of membranous concretions, and for two days before death much blood was discharged. *On dissection* the lungs were found adhering extensively to the pleura costalis; the liver was grey, red, and white, the latter colour predominating. The heart was a third smaller than usual. The commencement of the ileum was black, and the mucous membrane of this portion showed a cancerous ulceration. †

These cases will be sufficient to illustrate the disease in its most common forms, terminating by ulceration of various extent, and, in some cases, accompanied by thickening of the coats of the intestine. In the following case, in which the disease was of considerable standing, it had not advanced to ulceration.

Case XV.—A gentleman, aged about 50, had been for several years liable to looseness of his bowels. It attacked him most frequently in the night time, and often obliged him to get up several times in a night. His general health, however, was not much affected till a few months before his death, when the diarrhœa became more severe, and resisted every remedy. His strength sunk; he became pale and emaciated: with bad appetite and bad digestion; and died gradually exhausted. *Dissection.*—The liver was enlarged, pale, and tubercular. The intestines were externally healthy. Internally, the mucous membrane was in many places elevated into portions of a

* Cloquet, Nouv. Jour. de Medecine, Tome I. p. 29.
† Pinel. Médecine Clinique, p. 254.

dark red colour, and fungous appearance. These portions were observed through the whole tract of the intestine, generally in broad rings, going quite round the intestine, with intermediate portions of a healthy appearance. They were most numerous in the small intestine. No ulceration was observed in any part.

I shall only add one other case, showing the state of the parts when the symptoms had ceased after long continuance, and the patient died of another disease.

Case XVI.—A lady, aged 24, had been of a feeble and delicate habit from her early years; but, from the age of 15 or 16, had been almost constantly in a valetudinary state; was generally confined the whole winter with cough, pain of her bowels, and diarrhœa; got a little better during the summer, but was constantly, more or less, affected with diarrhœa and occasional pain in the bowels; variable appetite, bad digestion, and general debility. In this manner she had passed six or seven years, when she came to Scotland in summer 1815. She was then much emaciated, with a constant loose state of her bowels; the evacuations were fluid and whitish, and usually occurred four or five times every day. When at any time they were less frequent, she became oppressed about the stomach, and extremely uneasy. She had frequently pain in the bowels; her appetite was bad; the pulse natural. In the winter the same state of her bowels continued, and she had a loud noisy cough, without expectoration. In summer 1816 she began to improve considerably, having appeared to derive benefit from large doses of the tinct. muriat. ferri, combined with tincture of hyosciamus. The bowels got into a more natural state; the stools became consistent and healthy, and from this time there was no return of the former state of her bowels; but her appetite was bad, with very bad digestion, and she made little improvement either in flesh or strength. In the following winter her cough returned, at first without expectoration; but afterwards she had pain of her breast; frequent pulse, and purulent expectoration, and died of phthisis in May 1817, without any complaint in her bowels. *Dissection.*—The lungs were extensively tubercular, with numerous small abscesses. The lower half of the stomach was contracted, and considerably thickened. The pylorus also was a little thickened, but not hardened. On the internal surface of the intestines, there were many portions, several inches in extent, of a dark red colour, and more vascular than the other parts; and, on many places, there was the appearance of small, smooth cicatrices. The other viscera were healthy.

Besides the various forms of the disease which are exemplified in the above cases, there are some others which are deserving of notice. One appearance has been observed which does not occur in any of the cases which I have mentioned, I mean small tubercles or pustules resembling small-pox, covering the mucous membrane. This appearance has been observed by Petit, and

Lieutaud refers to several examples of it. I have also to add, that the disease sometimes terminates by peritonæal inflammation in a chronic form. In these cases we find the usual symptoms, untractable diarrhœa, going on for a long time, or alternate diarrhœa and vomiting, and besides the usual appearances in the mucous membrane, we find the intestines extensively glued together by very firm adhesions of long standing. A case of this kind, in a child three years of age, is mentioned by Mr Howship. The first symptoms were diarrhœa, impaired appe tite, pain of the belly, irregular feverishness, and emaciation. After two months the diarrhœa subsided, the stools being not more frequent than natural, but the emaciation increased, with pain and tumefaction of the abdomen, and constant fever. The child was thus cut off by rapid exhaustion; the bowels, for a short time before death, being rather bound. On dissection all the intestines were found glued together into one mass by most extensive deposition of coagulable lymph; the villous coat of the small intestine was in several places destroyed by ulceration, and at one place there was a perforation a quarter of an inch in diameter.

The symptoms and morbid appearance which have been mentioned seem to form the leading phenomena of this important class of diseases, as far as they have been hitherto ascertained. But much observation is required to make us fully acquainted with the subject. It is probable that the disease exists in a much more limited degree than in the cases which have been described, and accompanied by symptoms which are much less defined. It is probable, also, that there are important varieties of the symptoms, depending on the seat of the disease, particularly in regard to the degree in which the stomach is affected. There seems to be one form of it in which vomiting is the prominent symptom, especially in the early stages. There is much reason to expect, that an accurate investigation of the subject will throw much light upon many affections which are at present involved in much obscurity, and which are often indiscriminately classed together under the very indefinite term, *disorders of the chylopoietic viscera*. A gentleman, aged 34, who had formerly suffered from dysentery, but had been free from any symptom of it for several years, was observed to look ill, and to lose flesh, without any defined complaint, except nausea and indigestion; his spirits were depressed; and his bowels were irregular, being sometimes loose, and sometimes the reverse. After several months had passed in this manner, he had frequently vomiting, and a distressing sensation of heat in the stomach and œsophagus. He sometimes took food with eager-

ness, and sometimes refused it. His pulse continued natural until three days before his death; he then had convulsive affections and delirium, with frequent pulse, and died in a state of coma, which continued about 12 hours. His death happened about a fortnight after the commencement of the vomiting. On dissection, all the viscera were found perfectly healthy, except about 18 inches of the lower extremity of the ileum. The coats of this portion were livid, and several indurations might be felt through it. Its internal surface was covered with ulcers of various sizes, from the size of a bean to that of a half-crown piece; these were circumscribed, but very rugged, from a great quantity of fungous substance thrown out both from their surfaces and edges.* A woman, aged 55, was affected with weakness, emaciation, and loss of appetite, without any fixed complaint, except occasional colic pains, which were transient and very slight, and discharge of blood by stool, which was considered as hæmorrhoidal. After she had been affected in this manner for six months, she became suddenly comatose, and died on the following day. On dissection, no disease could be detected in the brain. Nearly the whole extent of the rectum was occupied by a cancerous ulceration. The remainder of it, and the left side of the colon, were red, and purple, as if sphacelated. The other viscera were sound.

Sect. V.—*Pathological Conjectures.*

The effects of inflammation on the mucous membrane of the intestine appear to be, morbid sensibility, with increased secretion of mucus, and morbid irritability of the muscular fibres which are connected with the inflamed part. The part thus affected seems to be excited to increased contraction by the ordinary mild contents of the canal, in the same manner as, in its healthy state, it would be excited by acrid contents, or by its appropriate stimulus, purgative medicine. Now the symptoms produced by such a morbid condition will vary considerably, according to the seat and the extent of the disease; for, if we suppose the healthy contraction and dilatation of the canal to be going on in the usual manner, propelling downwards the usual contents, it is probable that the increased action will only commence when these arrive at the part which is inflamed; hence the affection differs remarkably from a general increase of the peristaltic motion; because the parts above do not participate in

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* Memoirs of the Medical Society of London, Vol. VI. p. 128.
† Pinel. Medecine Clinique, p. 257.

it. For the same reason, there is probably a diversity in the symptoms, according to the kind of contents which are present. If these are fluid, they seem to be received into the inflamed parts, and instantly transmitted by a violent contraction; but, if they are solid, and of any considerable dimensions, and consequently requiring for their transmission a greater dilatation than is required for fluids, the effect probably is, such a sudden and violent contraction, on the first contact, as rather resists their transmission into the inflamed part, and causes them to be retained in the part immediately above. Hence probably arise remarkable diversities in the symptoms, according as the disease may be confined to the region usually occupied by consistent feces, or may extend into the region of fluid feces, or into the higher regions, where the process of digestion is not completed. In the first case, the discharge probably consists chiefly of the secretion from the diseased parts, while the natural feces are retained; in the second, of healthy fluid feces; in the third, of articles of food or drink, partially changed, mixed with the biliary and other secretions, and varying considerably, as one or other of these articles may predominate in quantity at different times. If this view of the subject be correct, it will present to us such extensive sources of variety in the appearance of the matters evacuated, as must shake our confidence in them as a ground of diagnosis; and it is the high importance of this point, in a practical view, that has led me into these observations. That such diversities do occur, even in the most formidable states of the disease, appears from the cases which have been described. In some of them, though they were advancing rapidly to a fatal termination, the evacuations did not differ from the matters discharged in a simple diarrhœa; and, in case 3d, the ileum, which was the principal seat of the disease, contained fluid feces in considerable quantity, and of a perfectly healthy appearance, in immediate contact with the diseased parts. Besides the sources of variety now referred to, there are others which may result from the period of the disease in particular cases; for, by repeated copious evacuations, the canal may be cleared of feculent matter, especially in a case in which appetite and digestion are much impaired. In such a case, the evacuations might be first copious and feculent, afterwards scanty, and consisting chiefly of the secretions from the parts, or watery matters, taken as drink, might pass through, tinged by these secretions. The important practical principle which I wish to found upon these observations is, that this highly dangerous and insidious disease may go on with every variety in the appearance of the evacuations; and that it may be advancing ra-

pidly to a fatal termination, while they do not differ from the matters discharged in a simple diarrhœa.

In the preceding observations I have abstained from any allusion to dysentery. The cases from which the descriptions were taken were not considered as cases of dysentery; but, it is evident that many of them show a remarkable affinity to it. On this important subject I cannot speak from experience, and would, therefore, express myself with becoming diffidence; but I would hazard a very few remarks in connection with the subject of this paper. In talking of dysentery, I think we are too much in the habit, in this country, of applying that name to an affection which is distinguished by tenesmus, with scanty discharges of mucus, often bloody, while the natural feces are retained, or discharged in scybalæ, and our principal systematic writers have employed the term in the same sense. But many of the best practical writers on dysentery describe two forms of the disease, which, in regard to the appearance of the matters evacuated, differ remarkably from each other; in the one they are scanty, and consist chiefly of mucus; in the other they are copious, and vary exceedingly in appearance at different periods of the disease, being sometimes dark, watery, and sanious, and sometimes quite natural. Sir James M'Grigor has particularly remarked, that the tropical dysentery, which was so fatal to the troops under his inspection, differs remarkably from the dysentery of Cullen, and ought rather to belong to a class of diseases which he has classed with diarrhœa. "I have ever (he adds) found difficulty in distinguishing dysentery from diarrhœa; and I am inclined to think, that, in Cullen's definition of diarrhœa, is described tropical dysentery."* The testimony of Dr Ballingall is strongly in favour of the same important fact.† In his description of that most formidable modification of the disease, which he has termed Colonitis, he expressly describes the evacuations as being, in the early stage of the disease, generally copious, of a fluid consistence, and without any particular fetor; and, in a private communication, in reply to certain queries which I addressed to him on this subject, he states, that, "at this period of the disease, the evacuations differ only in consistence from natural feces. As the disease advances, important changes generally take place in this respect, the evacuations becoming more scanty, and of a morbid appearance;" that is, probably, after, by repeated evacuations, the canal has been emp-

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* M'Grigor's Medical Sketches, p. 184.

† Ballingall on the Diseases of India.

tied of healthy feces, and the subsequent discharges consist chiefly of the morbid secretions from the diseased parts.

Now, in the dysentery of Cullen, as described by Sir John Pringle and Dr Donald Monro, the primary and chief seat of the disease appears to have been the rectum and the lower part of the colon,—in many cases the rectum only; while, in the affection described by Dr Ballingall, the disease, in general, extended as high as the caput cæcum, which, in many cases, seemed to be the principal seat of it, and frequently into the small intestine. I have received an interesting communication to the same effect from Dr Oudney, who, while a surgeon in the Royal Navy, had extensive opportunities of observing the disease in various parts of the world; and I am indebted to him for two dissections of patients, who died of dysentery, with copious stools, the one in an acute, the other in a chronic form. The former was fatal in about five weeks, the stools having been generally copious, and varying very much in appearance, being sometimes slimy, sometimes watery, and sometimes consisting of mucus, mixed with green matter of various shades. There was fever, with rapid emaciation; at first acute pain, afterwards changing into a dull uneasiness over the lower part of the abdomen; and, towards the conclusion, there was a sharp pain, increased by pressure, confined to a small spot in the lower part of the abdomen, towards the right side. There were some superficial ulcerations towards the lower extremity of the colon, but the principal seat of the disease appeared to be the caput coli, in which there were numerous glandular projections, with ulcerated surfaces, and in the ileum, four inches from its lower extremity, there was a portion in a state of recent inflammation, covered with coagulable lymph. There were small abscesses in the liver, and the mesenteric glands were enlarged. The other case passed into the chronic form, and was fatal in four months; the stools having been at first scanty, afterwards copious. They varied very much in appearance, being sometimes very white, sometimes quite natural, and sometimes composed entirely of mucus of a bright brick colour. Towards the conclusion they become very copious, watery, and of a chocolate appearance, often with coagula of blood. The inner surface of the small intestine was covered with innumerable red points; the inner surface of the colon was covered throughout with irregular superficial ulcers. The liver was somewhat enlarged and firm, with one small tubercle in its posterior part. The vessels of the intestines, omentum, and mesentery, were much loaded with blood, and the small intestines contained a small quantity of natural feces.

In referring to the terminations of this disease, I have mentioned a singular fact in regard to it, in infants, a tendency to terminate by effusion in the brain. To call this a translation of the disease, is merely expressing the fact in other words, and leads to no principle whatever; but it is a curious subject of investigation, whether this be an accidental combination, or whether there be any principle to which it can be referred. I have, in a former paper, alluded to a remarkable connection betwixt effusion in the brain, and suspension or great diminution of the secretion of urine, such as occurs in the ischuria renalis. Now, all inflammatory affections of the abdomen are apt to derange the secretion of urine, especially in children, and it is a matter of fact, that a remarkable diminution of it often occurs in this disease, and has been frequently observed to precede the appearance of coma. What is the connection here we know not, and probably never shall know, but that ischuria renalis is followed by effusion in the brain, I consider as a pathological principle, or rather a pathological fact, which is perfectly established. It presents an interesting subject of investigation, whether this principle has any reference to the connection which has often been observed in children, between affections of the bowels and effusion in the brain.

Sect. VI.—*Outline of the Treatment.*

The active form of the disease, especially in its early stages, is to be considered as an inflammatory affection of the most dangerous kind, and requiring to be treated with activity by the usual remedies—especially bloodletting. The first urgency of the inflammation being thus subdued, if the pulse continue frequent, digitalis is given with much advantage, or Dover's powder, in repeated doses; and, after the necessary bleeding, moderate opiates may be given, with mucilaginous articles and absorbents, or opiate glysters. The effect of purgatives is extremely ambiguous. In the more severe cases, they evidently aggravate the symptoms. There may be cases in which it is expedient to evacuate the bowels, as when the discharges are scanty and slimy, with retention of natural feces, but the practice requires caution; and in the more common form of the disease, with copious discharges, they appear to be injurious. Though the evacuations in such cases may be of an unnatural appearance, it is to be remembered, that this is the result of morbid secretions, not to be corrected by purgatives, but by curing the disease on which they depend. When the disease appears to be

seated in the lower part of the great intestine, bleeding from the hæmorrhoidal vessels might probably be useful. When the tormina are severe, with tension of the abdomen, the tobacco injection might probably be employed with benefit. Great attention should be paid to the ingesta; to keep them in as small quantity as possible, and of the mildest quality.

It is in infants that the disease most frequently occurs to us; and there is some difficulty in determining what is the best treatment. This results from the difficulty of distinguishing the disease, so that, when a case terminates favourably, we cannot say, with certainty, that it really was an example of this dangerous affection. In some cases, in which there is no vomiting, a gentle emetic seems to be useful in the early stages; afterwards, Dover's powder, combined with chalk, opiate glysters, opiate frictions, opiate plaster, and tepid bath. In some cases, the free use of digitalis seems to be extremely useful, and blistering on the abdomen. It is worthy of consideration, whether topical bleeding would be admissible in the early stages, when the disease exhibits much activity. In the advanced stages, when there is a tendency to sinking, wine is to be given very freely; when there are threatenings of coma, blistering on the neck should be employed; from both these conditions, infants often make most unexpected recoveries. When the case is accompanied, as it often is, by a peculiar and most ungovernable vomiting, blistering on the epigastrium seems to be the most effectual remedy; and considerable benefit, on settling the stomach, is often obtained from the vegetable bitters, as the powder of colombo root, in doses of a few grains, repeated at short intervals. In the protracted bowel complaints of infants, in which there was reason to apprehend this affection in a chronic form, I have found nothing so useful as lime-water. The teeth are to be attended to, and the gums cut, when they appear to be giving irritation.

In the chronic form of the disease, what we have to contend with is either the chronic fungous inflammation, or ulceration. The treatment is extremely precarious, and very few of the cases end favourably. The remedies to be kept in view, and which appear in some cases to be useful, are chiefly the following: Lime-water, the vegetable bitters, and astringents, especially the cortex cuspariæ and logwood; preparations of iron, as the tincture of the muriat in large doses; small quantities of mercury, with opium; the resins, as turpentine and bals. copaivæ, combined with opium; sulphur with opium; repeated blistering on the abdomen; bandaging with a broad flannel roller; the tepid salt water bath.

A lady, aged 30, came under my care in spring 1813, affected in the following manner: She had a remarkable tenderness of the inside of the lips, the tongue, and the throat; a constant discharge of saliva; a burning uneasiness in the tongue, throat, breast, and stomach; and great uneasiness in swallowing, and for some time after it. She had a constant tendency to diarrhœa, and a feeling, as if food or drink did not remain in the stomach, but passed immediately into the bowels: there was some cough, frequent pulse, great debility, and increasing emaciation. The throat appeared raw, and a little inflamed. The edges of the tongue, and the inside of the under lip, were excoriated, and covered with small ulcers, with inflamed margins. There was a painful excoriation about the anus and the labia. The complaint was of about three months standing, and had begun while she was in the puerperal state in England. A great variety of practice was employed without the smallest benefit. She became wasted and debilitated to the greatest degree. The diarrhœa became incessant, with violent pain, and a feeling as if every thing she swallowed passed through her immediately. She had no relief, but from large opiates; and that relief was but slight and temporary. When the case appeared to be hopeless, she began to take a decoction of logwood, (℥i to lb. i, a wine-glassful four times a-day,) with opiates, wine and nourishment. From this time she recovered daily, and in two or three weeks was in perfect health.