staff are appointed by the Minister of the Interior, but must be taken from the medical officers of the central board of admission into hospitals, and these are chosen by public competition. The business of the physicians and surgeons of this central board is to examine all cases which are not of a very urgent character, and send them to the hospitals best fitted for the nature of the disease. The management of all the hospitals is now placed in the hands of a director, assisted by a council.

There is in France an inferior grade of medical practitioners called Officier de Santé. For obtaining this title, a young man has the choice of spending six years with a doctor of medicine, or five years in hospitals, or study eighteen quarters in a preparatory school, or twelve in a faculty. There are medical juries appointed in many different cities of France, as well as in Paris, to examine these candidates. The degree of bachelor of letters is not required. For army and navy surgeons there are special schools attached to the military and naval hospitals of Paris, Strasburg, Metz, Cherbourg, Brest, Toulon, &c., where students receive their medical education under military discipline. The admission to these schools is by public competition, and successful candidates are remunerated for their services in hospitals. When an army or navy surgeon seeks the degree of doctor of medicine, a considerable diminution of the usual fees is made in his favour. In the School of Pharmacy of Paris, lectures on chemistry, botany, materia medica, &c., are delivered by such men as Bussy, Guibourt, Soubeiran, Caventou, &c. Students in pharmacy are required to spend three years with an apothecary, attend lectures for three more, and obtain the diploma of bachelor of letters.

The library and museum of the Faculty of Medicine are open to strangers; they are both remarkable for their extent and completeness.

Lectures at the Jardin des Plantes.—A series of gratuitous lectures, varying according to the season, are delivered at the Jardin des Plantes, (the Paris Botanical Gardens.) The following are the principal:—

Comparative Anatomy, M. De Blainville; Human Anatomy, M. Serres; Rural Botany, M. De Jussieu; Botany and Vegetable Physiology, M. Brongniart; Applied Chemistry, M. Chevreul; General Chemistry, M. Gay Lussac; Agriculture, M. Mirbel; Geology, M. Cordier; Mineralogy, M. Dufresnoy; Comparative Physiology, M. Flourens; Physics, as Applied to Natural Science, M. Becquerel.—*Zoology:* Mammalia and Birds, M. Geoffroy St. Hilaire; Reptiles and Fishes, M. Dumeril; Articulated Animals, M. Milne Edwards; Molluscs and Zoophytes, M. Valenciennes.

A great many private lectures and conferences are likewise given, both at the Ecole Pratique, and at the practitioner's residences. Tuition there is less solemn and more familiar than at the Faculty, and is subject to a fee.

Medical Schools in America.

CANADA.—UNIVERSITY OF M'GILL COLLEGE.

FACULTY OF MEDICINE.

The winter course of lectures in the faculty of medicine will commence on Monday, November 5th, and be continued, with the exception of the Christmas vacation, till the last week in April.

Theory and Practice of Medicine: A. F. Holmes, M.D.
Principles and Practice of Surgery: G. W. Campbell, M.D.
Materia Medica and Pharmacy: A. Hall, M.D.
Midwifery and Diseases of Women and Children: M. M'Culloch, M.D.
Anatomy, (General and Descriptive:) O. T. Bruneau, M.D.
Clinical Medicine and Surgery: J. Crawford, M.D.
Institutes of Medicine, (Physiology, &c.:) R. L. Macdonnell, M.D.
Forensic Medicine: Wm. Fraser, M.D.
Chemistry: Wm. Sutherland, M.D.
Practical Anatomy: W. E. Scott, M.D.
Curator of Museum: G. E. Fenwick, M.D.

Montreal General Hospital visited daily at noon.

University Lying-in Hospital open to the students of the midwifery class.

In each of the courses above specified, five lectures per week are given, except in the courses of clinical medicine and of medical jurisprudence, in the former of which two, and in the latter three only, during the week, are given.

The demonstrator of anatomy will be daily in the dissecting rooms to oversee and direct the students.

Attendance on the lectures &c. of this university is recognised by the universities and colleges of Great Britain.

TORONTO SCHOOL OF MEDICINE.

The next session will commence on the last Monday in October, and terminate on the last Monday in April.

Anatomy and Physiology: Dr. Rolph.
Midwifery and Diseases of Women and Children: Dr. Workman.
Principles and Practice of Surgery: Dr. Park.
Theory and Practice of Medicine: Dr. Morrison.
Practical Anatomy: Dr. Aiken.
Materia Medica and Therapeutics: Dr. Langstaff.
Chemistry: Mr. Hurlburt, A.M.

This school is recognised by the faculty of medicine of the University of M'Gill College, Montreal, and qualified for graduation, in accordance with its rules.

UNITED STATES.—MASSACHUSETTS MEDICAL COLLEGE.

The medical lectures of Harvard University will commence at the Massachusetts Medical College in Boston, on the first Wednesday in November.

Obstetrics and Medical Jurisprudence: Walter Channing, M.D.
Materia Medica and Clinical Medicine: Jacob Bigelow, M.D.
Theory and Practice of Medicine: John Ware, M.D.
Chemistry: John W. Webster, M.D.
Pathological Anatomy: John B. S. Jackson, M.D.
Anatomy and Physiology: Oliver W. Holmes, M.D.
Principles and Operations of Surgery: Henry J. Bigelow, M.D.

Clinical lectures at the hospital three times a week by the professors of clinical medicine and of surgery. Surgical operations are very numerous. The safe and effectual practice of etherization is taught in this school. Practical anatomy is amply provided for by new and liberal arrangements.

Fees for the whole course, eighty dollars; matriculation, three dollars; dissecting ticket, five dollars; graduation, twenty dollars. Hospital and library gratuitous.

AN ACCOUNT OF

CERTAIN ORGANIC CELLS PECULIAR TO THE EVACUATIONS OF CHOLERA.*

By J. G. SWAYNE, M.D. Lond.

LECTURER ON MIDWIFERY AT THE BRISTOL MEDICAL SCHOOL.

Amongst the hypotheses which have been broached at various times, to explain the cause and nature of cholera, none have seemed to wear a greater aspect of probability than the theory that the disease is due to the presence of a number of minute vegetable spores in the atmosphere. Should the result of the investigations which I am about to describe verify this theory by facts, we may perhaps hope that we have at last arrived at the *fons et origo mali*, and that the next step will be the acquisition of some method of destroying this cause, whilst in operation, if not of altogether averting its invasion. I therefore propose to give a short, but if possible a precise, account of the discovery, by Mr. Brittan and myself, of cells of a very peculiar character, which have been hitherto undescribed, but which we have found to be present almost invariably in the evacuations of cholera only; and which have been further proved by Mr. Brittan to be present in the air, and by Dr. W. Budd in the water, of an infected locality.

These peculiar bodies were first noticed by Mr. Brittan and myself under the following circumstances:—

In July last, sub-committees were formed by the Bristol Medico-Chirurgical Society, for the purpose of examining microscopically and chemically the discharges of cholera. The microscopical sub-committee consisted of Drs. Bernard and Budd, Messrs Swayne, Neild, Brittan, and Prichard. At one of its first meetings Mr. Brittan and myself undertook, at the request of the other members, to examine microscopically, and take drawings of, specimens of rice-water evacuations,

* We regret that we have not received the illustrative engravings from the artist in time to publish them with Dr. Swayne's valuable paper. They will certainly appear in The Lancet of next week, accompanied by the references to them here made.

which Dr. Budd had obtained from two patients (Jemima D—— and Susan D——) in the cholera hospital. This examination was accordingly conducted by both of us quite separately and independently of each other, and the result, consisting of drawings and specimens, was exhibited at the next meeting. Both our drawings and specimens showed certain bodies in considerable abundance, and so singular in appearance, that we expressed our opinion that they were characteristic of the evacuations of cholera, if not the very agents causing the disease. In this opinion the other members coincided. These specimens and drawings were subsequently exhibited at the next meeting of the Medico-Chirurgical Society, on July 14.

From that time we both continued our examinations of the evacuations of cholera, with a view of confirming the result of our first observations. We were enabled to procure specimens from more than fifty different patients in the cholera hospital, Narrow Wine-street, (Mr. Goldney, the resident surgeon, having kindly afforded us every facility for the purpose.) These were all examined at various times by Mr. Brittan and myself, and the result has been, to confirm the opinion first expressed, as to the importance of the peculiar bodies above mentioned in relation to cholera. Although agreeing in their result, our investigations have been carried on from first to last quite separately and distinctly.

Whilst thus engaged in searching for these bodies in the evacuations, Mr. Brittan made the important discovery that they were present also in the atmosphere of an infected locality; and still more recently, Dr. Budd succeeded in detecting them in the water of several districts where cholera had prevailed. Both of these observations tend still more to show the important part which these bodies probably take in the production of the disease.

Having thus stated the history of our investigations, it will be as well, perhaps, before I describe the microscopical appearances of the bodies I have so often alluded to, to state briefly the ordinary constituents of healthy fæcal matter, when viewed under the microscope; and to contrast these with the appearances presented by cholera evacuations.

In several examinations of healthy fæcal matter, I have found the following to be its most ordinary ingredients—viz.,

1. A large quantity of granular and amorphous matter, tinged a deep yellow colour by the bile.

2. A variety of heterogeneous substances, the *débris* of the food; such as the muscular fibre of animals, vegetable cells and fibres of various kinds, spiral ducts, vegetable hairs, starch, grains, &c.

3. A few epithelial cells, most usually of the tesselated kind, and very few mucous globules.

4. Round, clear, transparent cells, in tolerable quantity, and somewhat resembling oil globules.

5. A number of irregularly-shaped crystals, apparently chloride of sodium, and occasionally, but seldom, crystals of ammoniaco-magnesian phosphate.

Cholera evacuation chiefly differs from this in the following points:—

1. The great bulk of the evacuation consists of a thin serous fluid, in which are floating a large quantity of mucous globules, mixed with a hyaline basis.

2. It contains little or none of the amorphous matter tinged with bile.

3. It contains the same *débris* of animal and vegetable matters from the food, but in less quantity.

4. It contains much less epithelium than healthy fæcal matter.

5. It often presents a large number of crystals, which form the ordinary constituents of urinary deposits, especially triple phosphates and lithate of ammonia, more rarely, lithic acid and oxalate of lime. It contains little or no chloride of sodium.

6. The most important difference is, that it presents those cells to which I have so often alluded, and which I have never detected in healthy evacuations. The same result has attended Mr. Brittan's observations.

Now, the first three peculiarities of choleraic evacuations which I have mentioned are what any one who was at all familiar with their appearance would naturally expect.

The fourth peculiarity, however, directly contradicts a theory which was at one time proposed—viz., that the drain from the mucous membrane of the bowels arose in consequence of its being denuded of its epithelium. It is true that large quantities of epithelium have been found in the contents of the intestines of persons who have died of cholera, but this has been satisfactorily proved to be a consequence of maceration after death.

The fifth peculiarity is somewhat remarkable when we consider how completely the urinary secretion is suspended in bad cases of cholera. The urinary salts occur so constantly, and in such large quantities, in the evacuations of cholera, that it is impossible to account for them by supposing them to arise from an accidental admixture of urine, even if that secretion took place.

Large and beautiful crystals of triple phosphate, (fig. 1, *a*) may be constantly seen in choleraic evacuations, and are often in considerable abundance. These are present also in healthy fæcal matter, but are seldom or never plentiful. This, however, is not the case with urate of ammonia, which is occasionally present in very great abundance in choleraic evacuations. It may be either in an amorphous form, or in dark-yellow, semi-opaque globules, the smaller ones often cohering together in pairs. Sometimes it is present in such quantity as to tinge the evacuation of reddish colour. (Fig. 1, *d*.)

Lithic acid is occasionally, but more rarely present, and is never in any quantity. (Fig. 1, *c*.) Sometimes lithic acid is combined with lithate of ammonia, in the mode represented by Dr. Golding Bird in his book on urinary deposits. (Fig. 1, *e*.)

Oxalate of lime in its dumb-bell form is not uncommon, and is sometimes very plentiful. (Fig. 1, *b*.)

Although chloride of sodium is so constant in healthy evacuations, yet it is nearly always absent in those of cholera. In one case, however, (No. 11, First Series,) I met with it in large quantities. (Fig. 1, *f*.)

Cholera evacuations often contain large quantities of black amorphous matter, which I believe to be calomel, as it is always most plentiful in those who have been treated with large doses of that medicine, and is rendered darker by lime-water. (Fig. 1, *g*.)

I now come to the last and most important peculiarity—viz., the presence of those peculiar cells which we have so constantly found in the evacuations of cholera. I have found them absent entirely in only four out of thirty-four cases; and the proportion in which Mr. Brittan has failed to detect them is still smaller. Three of the cases in which I failed to see them were unusually severe, and rapidly fatal; but I do not think that this invalidates our conclusion, as I was only able to obtain one specimen of fluid from each of these, the evacuations mostly running from them through the bedding. Both Mr. Brittan and myself have occasionally failed in obtaining them in one motion, (usually the first,) but on examining others from the same patient, have succeeded in finding large quantities of them. It seems sometimes, especially in the worst cases, as if there were not sufficient power in the system to expel these bodies from the intestines. The evacuations in such cases are very thin, clear, and transparent, or semi-gelatinous, but without any well-marked flocculent deposit. In the majority of rice-water evacuations, this flocculent deposit is very marked, and the flocculi contain a good deal of yellowish-white semi-opaque matter. This is the peculiar appearance which these bodies present to the eye when clustered together in large numbers. In one case, from a convalescent patient, (No. 4, First Series,) a tolerably thick bilious evacuation was studded upon its surface with yellowish-white bran-like scales. On examining these under the microscope, I found them to consist almost entirely of these bodies, many of which were of very large dimensions, so as to occupy nearly half the field when viewed under an eighth-of-an-inch magnifier. The flocculent deposit sometimes almost entirely consists of myriads of these bodies of all sizes.

Mr. Brittan and myself, in making these microscopical investigations, always laid it down as a rule, that we should never rest satisfied with one examination, but scrutinize at least four or five different portions of the same specimen. I have thus examined forty-three different specimens from thirty-four cases, and have taken drawings of each, and noted down the results of the microscopical analyses in a tabular form. My first twenty cases have already been published by Mr. Brittan in his paper, and these I have referred to at different times as the first series. I shall therefore only give the analyses of seventeen specimens taken from the last fourteen cases. They extend from the 23rd of August to the 13th of September. All the microscopical analyses were made with Powell's one-eighth-inch magnifier, and a tabular statement of them will be found in the following page.

In this table I have, for the sake of convenience, designated the peculiar bodies found in cholera evacuations, "cholera cells," although at the risk of appearing to jump at a conclusion. These cells, which I must now describe, vary very much in size and apparent structure during the different stages of their development. The smallest are of the same size as, or even much less than, blood-globules; so that, to show them properly, an object-glass of high magnifying power, such as one-eighth,

MICROSCOPICAL ANALYSES OF CHOLERA EVACUATIONS,

FROM FOURTEEN CASES.

No.	Name.	Age.	Locality.	Date of Admission.	Character of Evacuation.	Date of Evacuation.	Cholera Cells.	Mucus.	Epithelium.	Crystals &c.	Bile.	Animal and Vegetable Matter &c.	Remarks.
21	Sophia Newton.	28	Plough-court.	Aug. 23.	Thin, greenish, slightly bilious.	Aug. 23.	Tolerably abundant, both large and small.	None.	A few scales.	A few, apparently lithic acid.	A little.	None.	A very severe case; died in collapse soon after admission, Aug. 23.
22	Elizabeth Lloyd.	21	Union-court.	Aug. 24.	Thin, slimy, tinged with bile.	Aug. 24.	Very plentiful, both large and small. The small formed very distinct rings.	Plentiful, with hyaline basis.	None.	Phosphates and numerous dumb-bell crystals of oxalate of lime.	In moderate quantity.	None.	Severe case; died on Aug. 27.
23	Elizabeth Porter.	6	Church-st., Temple-st.	Sept. 1.	Thin and mucous; very clear and transparent.	Sept. 1.	One only, ill-defined in appearance.	Plentiful, with hyaline basis.	None.	A few of oxalate of lime; black, amorphous matter.	None.	Vegetable cells and muscular fibre.	Rapidly fatal; died in extreme collapse on the day of admission, Sept. 1.
24	George Ellway.	43	Ashley-road.	Sept. 1.	Thin and yellowish.	Sept. 1.	Few and small.	Not much; plenty of granular matter.	None.	Phosphates.	But little.	Starch grains.	A mild case; recovered and left the hospital, Sept. 4.
25	Henry Porter.	31	Pile-street.	Sept. 1.	Rather thick and bilious.	Sept. 3.	Numerous, but small.	Plentiful.	A few scales.	Phosphates.	A great abundance of amorphous matter, tinged with bile.	Starch grains.	Recovered.
26	Sarah Elliott.	23	Narrow Plain.	Sept. 3.	Thin and clear, with fine deposit.	Sept. 3.	A few, of medium size.	Abundant, with granules.	A few scales.	None; black, amorphous matter.	None.	Vegetable cells.	Died during secondary fever, on Sept. 10.
27	John Murphy.	30	Lewin's-mead.	Sept. 3.	Very thin and serous, with white, flocculent deposit.	Sept. 3.	A few, of medium size.	Abundant, with much granular & hyaline matter.	Some scales.	A few small crystals of lithic acid; black, amorphous matter.	None.	Vegetable cells and fibres.	Very bad case; died in collapse on Sept. 3, (day of admission.)
28	William Tucker.	16	Easton.	Sept. 3.	Semi-gelatinous, and of a yellowish colour.	Sept. 3.	Plentiful, both large and small.	Plentiful, with hyaline basis and granules.	Both squamous and columnar.	None; round, black granules.	Not much.	Vegetable cells; large numbers of animalcules, chiefly vibriones.	Recovered, although a rather severe case.
29 *a*	Ann Gilverston.	35	St. James's, Back.	Sept. 8.	Thin and clear, with yellowish, flocculent deposit.	Sept. 8.	Very abundant, and of all sizes.	Abundant, with hyaline basis.	None.	None.	A little.	Vegetable cells.	
29 *b*	Ditto.	Ditto.	Ditto.	Ditto.	Rather thin, with thick, yellow deposit.	Sept. 9.	Not many, and small.	Very abundant, with granules and hyaline basis.	None.	None.	Plentiful.	None.	
29 *c*	Ditto.	Ditto.	Ditto.	Ditto.	Thick, dark-yellow, & pultaceous.	Sept. 10.	Several, very large, irregular, and deep-yellow.	A little, with hyaline basis and granules.	A few scales.	None.	Plentiful.	Several vegetable cells.	A very severe case; died in collapse on Sept. 11.
30	Jane Broad.	19	Limekiln-lane.	Sept. 10.	Thin and clear, with thick, reddish flocculi.	Sept. 10.	Abundant, and very large and irregular.	Not much; abundance of granular matter.	None.	None.	Very little.	Vegetable cells.	Recovered; rather a severe case.
31	Sarah Picton.	25	Warner's-court.	Sept. 5.	Thin, yellow, and semi-gelatinous.	Sept. 6.	Very few, and much broken up.	Abundant, with hyaline basis and granules.	None.	Several phosphates.	A little.	Vegetable cells and fibres.	Recovered.
32	Sarah Elliott.	3	Narrow Plain.	Sept. 3.	Thin, yellow, and gelatinous, with plentiful flocculi.	Sept. 5.	Very abundant, both large and small, & deep-yellow.	Plentiful, with hyaline basis.	None.	None; black, amorphous matter.	Much amorphous matter, deeply tinged with bile.	Starch grains.	Recovered.
33 *a*	Susan Riddler.	13	Mitchell-lane.	Sept. 9.	Very thin, greyish-yellow.	Sept. 10.	Very few, but distinct & small.	Very plentiful.	None.	Phosphates; black granules; lithate of ammonia.	A little.	None.	
33 *b*	Ditto.	Ditto.	Ditto.	Ditto.	Thin, brownish-yellow.	Sept. 11.	Large, very well developed, and plentiful.	Not much.	Some scales.	Phosphates, and nodules of lithate of ammonia.	Plentiful.	Muscular fibre & vegetable cells.	Recovered; went out on September 11.
34	Joanna Riley.	11	Marsh-street.	Sept. 13.	Very thin, reddish-yellow, with reddish-white deposit.	Sept. 14.	Very few.	Very abundant.	None.	Lithate of ammonia very plentiful.	None.	None.	Recovered.

one-twelfth, or one-sixteenth of an inch is required. They are very transparent, and, like blood-discs, appear to be flattened cells; but the thickness of their walls causes them to resemble rings in appearance. Their interior is almost entirely destitute of granules. Their walls refract light powerfully; they sometimes present a clotted or even cellular appearance, and there is usually a transverse fissure or crack at some point of their circumference. In some of them I have observed very minute cells or buds, projecting at different points of their circumference. (Fig. 2.) Fragments of them present the appearance of small segments of circles. Cells of such dimensions are most usually found in the first portions of the alimentary canal, especially in the matters ejected by vomiting. (Fig. 2.) I have, however, found them present in large numbers in the fæces, together with other cholera cells of much larger size. (Fig. 3, *c*.)

These small cells precisely resemble, and are, in fact, identical in appearance with, those which Mr. Brittan has discovered in the atmosphere.

The medium and larger-sized cells (as usually found in cholera evacuations) distinctly resemble the small cells in appearance, but they are coarser and more granular in structure. Between the three, every gradation may be met with, both as to form and size. The medium cells (fig. 3, *b*) appear like thick, but somewhat irregular rings; but on altering the focus of the microscope, they can be observed to be flattened cells, with granular contents, and in some cases containing distinct cells within them. Their walls appear thick, and cellular in structure, the arrangement of the cells sometimes giving them the appearance of transverse striæ. The walls have usually a great tendency to split at four or five points of their circumference; and when split by gentle pressure, the whole cell divides into four or five fragments, and gives exit to its granular contents.

The larger cells (as usually met with) (fig. 3, *a*) are more irregular in shape and cellular in structure. They are semi-opaque, of a dirty-yellow colour, and have lost much of their resemblance to rings. On bringing their surface into focus, three or four cracks can usually be seen upon it, which appear deep fissures when viewed in profile. The cell-wall is distinctly cellular in structure. The cell often contains within it other cells of a similar nature. When one of these large cells is crushed by pressure, it breaks into a great number of fragments, of a round cellular form, (fig. 3, *d*.) Sometimes, however, the fragments have an angular character.

Such are the usual appearances of these cells in the evacuations of cholera, for in by far the greater number of cases they appear flattened, broken, and imperfect. They are collapsed, as if by exosmosis, and more or less disintegrated. It is very probable that this appearance is produced by their having undergone a kind of digestion whilst passing through the alimentary canal.

A very short time ago, I had an opportunity of examining the only perfect specimen of these cells which I have seen. In one of my earlier examinations I met with a large, well-developed cell, (fig. 4, *a*,) but this did not perfectly reveal the structure, and it is only lately that I have seen any which do this. These specimens (fig. 4, *b*, *c*, *d*, *e*) were obtained from Case 34, and were very beautiful microscopic objects. Their walls were thick, and studded externally with numerous cells or buds. These appeared to be arranged in concentric circles. The cells being somewhat globular, the centre is first brought into focus, when it is seen to be occupied by two or three of these buds, with intervals between them, (fig. 4, *d*.) On gradually bringing the rest of the cell into focus, wider and wider circles of these buds are successively displayed, (fig. 4, *b*,) until the outer margin or ring of buds is brought into focus. The cells forming these circles are connected by very distinct concentric lines.

The parent cell is seen to contain within it a mass of granules, which, in imperfectly developed cells, does not quite fill its interior, (fig. 4, *c*.) On crushing one of the parent cells, it gives exit to its contents, consisting of granular matter, somewhat resembling the most minute cholera cells in appearance. Well-developed large cells of this kind are usually tolerably transparent, and of a dirty-yellow colour.

I may mention, in conclusion, that the cells which Dr. W. Budd has detected in the water of cholera districts, are usually of the large kind, and more disintegrated and imperfect than those which are generally found in the evacuations. They have in all probability escaped from sewers into the drinking-water, and there undergone a kind of maceration.

It may be added, in support of our conclusions, that Mr. Brittan and myself have both examined the evacuations in cases of diarrhœa, which are clearly not traceable to the prevalent epidemic, and have invariably failed in detecting anything like cholera cells. I have examined two very well marked cases, in which the evacuations were more fluid than those of cholera. One occurred in an old man suffering from chronic disease of the rectum; the other in a lady during an attack of uterine phlebitis after delivery. In neither case was a trace of these bodies to be found.

In the present state of the inquiry respecting the cause of cholera, when so much remains to be done, it is almost useless to enter deeply into speculations with regard to its mode of propagating and of producing its effects. It seems very probable, however, from what we have seen of their development, that the cholera cells have their habitat entirely in the alimentary canal, and do not enter the blood. They are most likely inhaled from the air, and swallowed with the saliva, or taken in with articles of food or water. When received into a healthy stomach, the converting power of which is strong, they perhaps undergo a kind of digestion, and are completely dissolved. But let the vital powers of that stomach be lowered by any depressing agent, such as insufficient food or clothing, fatigue, intemperance, fear, or miasmata of different kinds, and these bodies will acquire a rapid and prolific development, and produce by the irritation of their presence, those copious discharges of serum and mucus which are so characteristic of the disease. In smaller quantities, they in all probability produce that diarrhœa which is so common at the time when cholera prevails, and which seems to be only a modification of the same disease.

Bristol, Sept. 1849.

ALLEGED DISCOVERY OF THE CAUSE OF CHOLERA.

(ABSTRACT.)

THE following letter appeared in the *Times* of Sept. 26th, addressed to the editor of that journal:—

"SIR,—An announcement was lately made by Mr. Brittan of the discovery that peculiar microscopic objects exist constantly in the characteristic 'rice-water' discharges of persons affected with cholera, and in the atmosphere of infected places.

"The peculiar objects in question were first seen by two or three members of a committee appointed by the Bristol Medico-Chirurgical Society for the microscopic observation of subjects connected with cholera. The first drawings of them, together with the great variety of other objects generally to be met with in the 'rice-water' discharges, were made by Mr. J. G. Swayne and Mr. F. Brittan in the second week in June last. These drawings, together with specimens of 'rice-water,' were exhibited at the next meeting of the committee. At that meeting there were present, Mr. J. G. Swayne, Dr. Bernard, Mr. Neild, Mr. A. Prichard, and myself. Numerous other drawings of the same kind by Mr. J. G. Swayne and Mr. Brittan were shortly afterwards laid before the Bristol Medico-Chirurgical Society.

"The laborious observations subsequently made by Mr. Brittan and Mr. Swayne, and laid from time to time, without reservation, before the British Medico-Chirurgical Society, certainly did much to show that some very important relation existed between these bodies and malignant cholera.

"Shortly afterwards, and being at the time aware of this discovery, I detected the same organisms in great numbers in almost every specimen of drinking-water which I was enabled to obtain from cholera districts.

"This led me to examine a great number of specimens of water from healthy quarters, and although I often found in it a good deal of matter of various kinds, organic and other, in no single instance did I see anything resembling the peculiar bodies in question.

"These considerations and others have led me to the following conclusions:—

"1. That the cause of malignant cholera is a living organism of distinct species.

"2. That this organism, which seems to be of the fungus tribe, is taken, by the act of swallowing, into the intestinal canal, and there becomes infinitely multiplied by the self-propagation which is characteristic of living beings.

"3. That the presence and propagation of these organisms in the intestinal canal, and the action they there exert, are the cause of the peculiar flux which is characteristic of malignant cholera, and which, taken with its consequences, immediate and remote, constitutes the disease.

"4. That the new organisms are developed only in the human intestine.

"5. That these organisms are disseminated through society: