

the heat of summer, is registered in the returns of mortality as death by sun-stroke, in which virtually nothing has been done at all to promote recovery,—nothing, we mean, that is likely to be successful. Mustard, perchance, is applied to the limbs, cold to the head, a blister to the nape of the neck; a purgative, if the patient can swallow it, is put into the stomach, or an injection is administered by the rectum: of what avail are these slow—these almost meaningless measures? By the side of the grand old remedy they are trifles, having neither theory nor practice to sustain them." We need only remind our readers that these remarks are from the pen of one of the most scientific physicians of the day, to ensure the treatment he so strongly advocates being put to the test during the present hot season. We shall gladly publish any facts bearing on the treatment of sun-stroke by bleeding, and we hope also to receive information regarding the temperature of the body of those labouring under this affection.

CROWNERS' QUESTS.

If we in India are behind the western world in many matters social and scientific, this cannot assuredly be said of our criminal law or procedure, which has been codified to such a degree that a very few small volumes contain it, and simplified to an extent that it is almost pleasant reading. This process of codifying and simplifying has been recently applied to Acts relating to coroners and inquests. We have in the Act No. IV of 1871—the Coroners' Act—which received the Governor-General's assent on the 27th January, in five pages of sparsely printed foolscap,—the essence of volumes. The main object in this case is to find out the cause of death, and the secondary one to determine whether this event was owing to the crime or negligence of another. Accordingly, as befits so important an aim, the appointment of a special officer is authorised, a special court and jury constituted, a special procedure prescribed and special powers given. As yet the Act applies only to the three Presidency towns, and the jurisdiction coincides with that of the original civil jurisdiction of the High Courts of these. The officer is to be appointed by the Local Government, and may be suspended or removed by the same authority. He may appoint a deputy, and both are to take an oath to discharge their duty properly. He is to be assisted by a jury of five, seven, nine, eleven, thirteen, or fifteen "respectable persons," who are liable to be summoned under a penalty for non-attendance.

The circumstances under which an inquest may be held are,—reported cases of death by accident, homicide, suicide or unknown causes, and prisoners who have died of other causes than cholera or epidemic disease. The body must lie within the jurisdiction, but it does not matter where the death took place. The coroner views the body, cites or summons witnesses, may order disinterment "within a reasonable time after death," direct a *post-mortem* examination or analysis to be performed, adjourn the inquest, or hold it on Sunday. Evidence is to be taken on oath, written down by the coroner and authenticated by the witness's signature. The inquisition is to be drawn up according to the finding of a majority and in simple form, showing:—

1. Where, when, and before whom, the inquisition is held.
2. Who the deceased was.
3. Where his body lies.

4. The names of the jurors, and that they present the inquisition on oath.

5. Where, when, and by what means, the deceased came by his death, and,—

6. If his death was occasioned by the criminal act of another who is guilty thereof.

The circumstances and cause of death are to be given plainly and without verbiage.

When the verdict is,—(1) culpable homicide, amounting to murder, or (2) not so, or (3) rash or negligent act, accused may be committed by warrant to appear before the next sessions, and witnesses may be bound over. Bail may be accepted in the last two cases. Inquisitions are not to be quashed for informality and may be amended. The old and effete functions of coroners regarding deodand (lethal weapons, &c., forfeited to the Crown), *felo-de-se*, treasure trove or wreck and fugitives' goods, are abolished, and, generally, all functions not expressed in the Act. Such, in brief, is the essence of this concise and plain enactment. One section the Act does not contain, whose absence we think is a blemish—namely, that the coroner shall be a medical man. This was the issue of the great battle which Mr. Wakley of the *Lancet* fought so successfully years ago, and it is now well recognized in England that a mind trained in medical inquiries is the most fitted to conduct an inquest into the cause of death. This office may be held simultaneously with any other office under Government, and there are members of our profession and service in each presidency town who would fill the appointment with credit and advantage to the community. The clear weighing of scientific evidence can hardly be expected of a man who has not undergone a scientific training.

Reviews.

Recent Contributions to the Literature of Asiatic Cholera. By C. MACNAMARA.

(Continued from page 39.)

FOR reasons similar to those I have propounded regarding the matter of fungi in cholera evacuations, it seems to me to have been unnecessary for Dr. Lewis, in the report before me, to enter into an explanation of the appearances presented by animalculæ, common to the water of certain drains and tanks in Calcutta, and cholera stools. Not only do I fail to understand the practical advantage to be derived from labors of this description in connection with researches into the nature of cholera, but, as in the present case, discussions of the kind are apt to do harm, by misleading people whose imaginations are easily excited by any thing bordering on the marvellous. This fact is apparent from the following quotation contained in a "note on dry sewage" by Dr. Mout (lately Inspector General of Jails, Lower Provinces.) Dr. Mout writes with reference to the dry method of sewage,—“I do not share in this doubt, and at the suggestion of my friend Dr. Parkes am about to submit the matter to careful experimental trial, with the aid of Drs. Fawcus and D. D. Cunningham. The latter gentleman has proved the existence in cholera excreta of an animalcule, termed euglenia, which is developed in countless myriads in putrefying cholera material. This animalcule is possessed of such tenacity of life that it may be dried, and apparently, after a length of time, may be restored to full vigour, vitality, and probably undiminished reproductive power by the addition of heat and moisture. The prosecution of this enquiry is of the deepest interest at the present time, when the scientific investigation of cholera has taken a new start in India, and the crude, unscientific, categorical method of attempting to solve so difficult a problem, is I hope about to be

abandoned. Facts are wanted, not opinions. The one fact that is clearly established, is that cholera excreta are only dangerous when putrefaction has commenced. The most efficient of all agents in the development and multiplication of euglenia will undoubtedly be met in water sewerage in hot climates. The real destroyer will be the system of dry sewage that immediately and permanently prevents putrefaction."

I need hardly remind the profession in India that Dr. Mouat is not the only Medical Officer in this country who has adopted ideas such as those above quoted. Of course, Drs. D. Cunningham and Lewis are not responsible for the vagaries of other people; nevertheless, these notions, although misapplied, were started by their investigations regarding animalculæ and cholera stools. It may further be remarked that expressions such as those I have referred to, although harmless among scientific men, are undoubtedly detrimental to the cause of science, because they expose members of the profession,—especially those holding high positions in the service—to ridicule, rendering it possible for officers whose duty it is to consult them in professional matters, to discard their views, if unpalatable, arguing that, having come to indefensible conclusions in one branch of their profession, their opinions are untenable, in another.

As the subject of animalculæ was to form a part of this report on the microscopical objects found in cholera stools, it would have been more satisfactory had Dr. Lewis given us some definite ideas regarding the "still" forms of animalculæ which he describes. He remarks, at page 27 of his report, that in fresh cholera stools "frequently a globule has been observed for some time, and finally disposed of as being merely an oil one, when suddenly it is seen to protrude a portion of its substance, retract it, and while so doing another protrusion becomes visible at some other portion of the little mass, and then, perhaps, it will shift its position, exactly after the manner of an amœba;" they are "frequently hyaline in a fresh stool, but generally granular; no trace of nucleus or contractile vesicle can be observed; sometimes they are very numerous, but when there are other corpuscles in the field which act in a somewhat similar manner, it is impossible to say which class they belong to, unless, indeed, they are moving across the field like an ordinary amœba, and do not merely content themselves with protruding portions of their substance into the surrounding fluid." In addition to these cells Dr. Lewis describes the "peculiar corpuscles" of cholera stools, first noticed by Dr. Parkes, and he agrees with Dr. Parkes in considering that "it is in the highest degree probable they owe their origin to effused blood-plasma, which assumes with great rapidity a low, ill-defined, and non-progressive organization." This passage is taken from Dr. Parkes' paper published in the *London Journal of Medicine*, 1849, and we may best understand its meaning by quoting further from this same paper. Dr. Parkes writes,—"it appears to me the most simple, and the most likely view is to consider all the flocculent matter of the true cholera stool, cells, dark yellow granules, fibres, flakes, and amorphous matter, to be but modifications of the same substance, *viz.*, fibrine. The granules appear to form, by aggregation, little masses, round which a cell wall forms, in the way which, as pointed out by Henle, occurs in certain inflammatory exudations, or perhaps cells may form from liquid plasma, as in the low organization taking place in the follicular deposit of typhoid fever." I must for the present turn, however, to Dr. Lewis' report for a description of these 'peculiar cholera corpuscles.' He writes at page 34,—their chief characteristic is that they "*exhibit movements somewhat like the movements associated with the amœba.*" (This feature does not seem to have attracted Dr. Parkes' attention.) "A portion of the substance of the corpuscle is seen to creep out insensibly from the mass, and as instantly to return: unless the eye is carefully fixed on the body, and is already a more or less educated eye, the phenomenon is not detected, and the observer enters it as disintegrated epithelium in his note book." It seems to me hardly possible that such a mistake as this could occur if the cells depicted in Plate xvi of Dr. Lewis' report represent these "peculiar cholera corpuscles," for they are about as unlike the intestinal epithelium as any form of cell well could be, nor does their clear outline give one the remotest idea of their being "disintegrated." I would further remark, that, although I have carefully read over Dr. Lewis' report, I cannot find a single allusion in it to the presence of the intestinal gland cells, as being one of the constituents of the microscopical objects to be found in cholera evacuations.

(To be continued.)

1.—*The Drainage of Calcutta.* By W. CLARK, Member, Institute of Civil Engineers, &c., &c.

2.—*Twelfth Report of the Medical Officer of the Privy Council.*

3.—*Report on Measures adopted for Sanitary Improvements in India from June 1869 to June 1870.*

"CONSTANT READERS" of this journal are no strangers to the subject of the water-supply, drainage, and conservancy of Calcutta. Our January number contained a lengthy notice of the working and defects of the system, and Mr. Clark, on whose shoulders rests largely the credit or obloquy of success or failure, now comes forward with a concise, clear, and, to most minds, convincing exposition of the whole question which was read before the Bengal Social Science Congress on the 2nd of February, 1871, and now reaches us as a pamphlet of 20 pages. In this paper Mr. Clark explains clearly what objects the Calcutta drainage works are designed to fulfil, and by what means these objects are meant to be accomplished.

The objects are:—1, to remove sub-soil water; 2, the drainage of houses; and 3, rain water. These three objects are to be accomplished by one contrivance, namely, a system of drains in which every thing capable of solution and suspension is to be mechanically conveyed to a distance by means of water. The four requisites for this arrangement are shown to be,—1st, a sufficiency of water; 2nd, a sufficient fall; 3rd, a complete system of drains; and 4th, modes of providing for the entrance of the material—water, sewage, &c., into the drains. The question of water is placed beyond doubt. There is the rain water, the Pulta water, and the Hooghly water, which are ample for all purposes of conveyance and flushing. The natural eastward fall of the Calcutta level gives sufficient mechanical facility for the water and its burden, aided by the pumping arrangements at Palmer's bridge which give the material a new lift. As regards the drains—"one-half of the more expensive works has been already completed, while the outfall works, with the exception of one pumping engine, still required, are finished." In fact, what is wanted is the mere detail or filling in of the outline which already, wholly in design, and in great part in actual realization, exists. As to the entrance arrangements,—all the soil and storm water, and the house drainage partly, can now enter the drains wherever the net-work spreads, but there is still wanting the water closet system to provide for the immediate entrance and removal of human excrement. This is the great defect of the system, but it is a defect of incompleteness—remediable by time and outlay. There is also a defect at the other end, a defect of arrangements for utilizing the valuable material which is now being deposited in the open canal at the outfall and silting it up. This is also capable of remedy: the land is there, and it merely wants appliances for the application of the sewage to it. Dr. Hewlett, Health Officer of Bombay, occupied a recent furlough (August 1868 to November 1869,) in studying the conservancy arrangements of 30 English and Scotch towns. He has placed the result of his observations in the form of a report which is published by the India Office. His conclusion is,—"*As far as I can see, water carriage appears to be, under existing circumstances, the most convenient vehicle for the removal of all refuse from large towns in England. The system has not been tried in India, and it remains to be seen whether it is one best suited to the local habits of the people, and whether a sufficient supply of water can be provided to carry the sewage to its outfall before decomposition has set in.*" Dr. Hewlett also remarks,—"*In Manchester, Liverpool and Birmingham, &c., only a portion of the houses are fitted with water closets. In the remainder, and in Manchester (where the Corporation discourages their use,) in the larger portion, there are middensteads or receptacles for both night soil and ashes, which also are in my opinion doubly objectionable, as they have to be periodically cleaned at great expense; and as they necessarily entail the accumulation of night soil in the vicinity of human habitations, they are sources of danger, however carefully constructed or ventilated they may be.*" The last extract shows what Calcutta conservancy is, and the first what it ought to be. It is a question of mechanical removal *versus* scavenging. The former entails expense in construction, but gives the facility of immediate and continuous removal of nuisance, *irrespective of human agency.* The latter as a continuous expense, and an uncertain element. The midden system must involve scavenging, and at present the Calcutta system is a compound one—involving a combination of a tub, midden and drainage systems. All other methods except a complete water closet, and drainage system, are mere modi-