

TERMS OF SUBSCRIPTION.

Twelve Months (prepaid) stamped for post. £1 10 0
 Six Months (do.) 0 16 0

Regularly transmitted by Post throughout Great Britain, and to the most distant of the British Colonies.

Orders on Army or Navy Agents should be made in favour of Mr. JAMES LUCAS, 11, New Burlington Street.

CHARGE FOR ADVERTISEMENTS.

Seven lines, or less... 4s. 6d. | A Column... 2l. 15s. 0d.
 Every additional line 0s. 6d. | A Page..... 5l. 5s. 0d.

Advertisements should reach the Office by two o'clock on Thursday, at the latest, but earlier, if possible, accompanied by a Post-office order, (payable to Mr. James Lucas, at the Post-office, 1, Coventry-street,) or postage-stamps for the amount, and directed to 11, New Burlington-street, London.

Medical Times & Gazette.

SATURDAY, JULY 5.

IMPURE WATER A SOURCE OF DISEASE.

In our last Number we briefly alluded to a Report lately presented to the President of the Board of Health by Mr. Simon, on the connexion between the last outbreak of epidemic cholera in London, and the consumption of impure water. We also took occasion to speak in terms of commendation of the laborious researches instituted and conducted by Dr. Snow, upon the influence of foul water in propagating disease. We must, however, again express the opinion to which we have, on former occasions, given utterance, that, while allowing all credit to this Physician for the patience, perseverance, and skill with which he has carried out his investigations, we are by no means prepared to adopt the hypothetical views which he has broached in relation to the cause of epidemic cholera: still we fully admit the connexion existing between impure water-supply and the existence of epidemic disease; and although we have at present no theory to offer in explanation, yet we think that the subject, in its practical bearings, deserves the closest attention of the Medical Profession, and of the Legislature.

It is necessary to mention that the Report now before us is the last instalment of the information sought for by the *Committee for Scientific Purposes*, appointed by the *Medical Council*, which, it will be remembered, was constituted by Sir Benjamin Hall in the autumn of 1854. The Report originally presented by the *Committee* was incomplete, inasmuch as it omitted the statistics upon the relation existing between water-supply and disease; but the details connected with this subject having at length been collected and methodised, the present Report by Mr. Simon may be considered as a kind of supplement to that formerly published. Mr. Simon has gathered together the information supplied by others (and among the chief of his informants is, we believe, Dr. Snow), and he has been enabled to develop results which are certainly of a very startling and most suggestive character.

It appears that nine districts on the southern side of the River Thames, namely, St. Saviour's, St. Olave's, St. George's Southwark, Bermondsey, Newington, Lambeth, Wandsworth, Camberwell, and Rotherhithe, were supplied with water during the epidemic of 1854 by two rival water companies, viz., the Lambeth Company, which pumped its water from the Thames at Ditton, and the Southwark and Vauxhall Company, which derived its water from the Thames at Battersea. Micro-

scopical and chemical examination had proved the impurity of the latter fluid, which "was not only brackish with the influence of each tide, but contaminated with the outscourings of the metropolis, swarming with infusorial life, and containing unmistakable molecules of excrement."—*Mr. Simon's Report*, p. 5.

Now upon investigation it was found that about 25,000 houses in the above-named districts derived their water-supply from the Lambeth Company, and nearly 40,000 from the Southwark and Vauxhall Company; and it was further ascertained that in the former houses, comprising a population of about 166,906 persons, there occurred 611 deaths from cholera, being at the rate of 37 to every 10,000; while in the latter houses, representing a population of about 268,171 persons, there occurred 3,476 deaths, being at the rate of 130 to every 10,000 persons. The persons drinking the water drawn from Battersea, therefore, suffered three times and a-half as great a mortality as the population which drank the water derived from Ditton.

One very curious circumstance detailed in this report deserves special attention. It appears that in 45 streets examined, it was found that the houses, taken collectively, were half supplied by the Lambeth Company, and the other half by the Southwark and Vauxhall Company: exactly 1,517 houses being supplied by each. Now of these 3,034 houses with about 20,000 inmates, the half which were supplied by the Lambeth Company, in 1853-4, lost 57 persons by cholera, and the other half supplied by the Southwark and Vauxhall Company, lost 164; or, in other words, those persons who drank dirty water, suffered in a far greater proportion than those who drank the purer fluid. It appears, however, that in the previous epidemic of 1848-9, the proportions were reversed, for at that period the persons who drank the Lambeth Company's water lost 164 of their number by cholera, while those who drank the Southwark and Vauxhall Company's water lost only 95; and this difference is said to be due to the circumstance, that in 1848-9, the Lambeth Company's water was even more impure than that of the Southwark and Vauxhall Company, and that the different amount of illness at the two periods is explained by the fact, that in the intervening time the Lambeth Company had very much improved its water supply, while the rival company had continued the supply from its usual sources. These results, although they appear very striking, and are very ingeniously explained by Mr. Simon, require, we think, further explanation and corroboration from other data; nor can we altogether agree to the proposition, that the different rate of mortality at the two great cholera epochs is *wholly* to be explained by reference to the water-supply.

There can, we think, be little doubt that the poisonous matter which generates epidemic diseases exists in the air we breathe and in the water we drink; and it is therefore the duty of the legislator, under the advice and guidance of the members of the Medical Profession, to endeavour to ascertain the conditions under which air and water become poisonous to mankind. The problem is undoubtedly difficult of solution; for, although micro-chemistry may detect in our drinking water the traces of decomposing animal and vegetable matter, we cannot assume that these are the only exciting causes of epidemics, which seem to require for their full development certain conditions, hitherto mysterious, of climate, locality, and predisposition. Nevertheless, it is a matter of intense interest to purify, as far as possible, the streams which flow through large cities, and which, while they supply drinking water to the populations, are also made the receptacles of sewage. These two purposes, which have been effected by all great rivers since the earliest dawn of civilization, appear to be quite compatible with each other, while the

populations are scanty and the river extensive. The *debris* of animal and vegetable life are wafted down the course of these streams, and, together with the pulverized fragments of disintegrated rocks, originate new and ever-varying scenes of fertility and abundance, while the very products themselves of organic decomposition are metamorphosed into multitudinous forms of vegetable and animal life, adorning and gladdening the fields and the groves, sporting in the rivers, or swarming in the ocean. But this mutual and harmonious interchange of death and life, of decomposition and recomposition, of disorganization and symmetry, is disturbed when cities become overgrown, and the rivers saturated with the products of human and brute decomposition; and it then becomes the province of science to discover the means of restoring the balance, and promoting the original beneficent designs of Nature.

UNIVERSITY MEDICAL EDUCATION.

THE University of Dublin continues its steady course of improvement in the education of candidates for degrees in Medicine; and the most recent step taken in this direction, and carried into effect during the past week, suggests to us that it may be both interesting and profitable briefly to trace the steps by which the system pursued in this ancient University has been carried to so high a degree of perfection as to be worthy of being adopted as a model, and by which the vigour of youth, as it were, has been grafted on the stability which naturally attaches to the acts of the older Universities.

It is not very many years since the Board of Examiners for the degree of Bachelor of Medicine consisted of but four individuals, viz.: the Regius Professor of Physic, the Professor of Anatomy and Surgery, the Professor of Chemistry, and the Professor of Botany. Of late years, the King's Professors of the City of Dublin, on the foundation of Sir Patrick Dun, viz.: the Professors of the Institutes of Medicine, of the Practice of Medicine, and of *Materia Medica* and Pharmacy, together with the Professors of Midwifery and of Medical Jurisprudence of the College of Physicians, have been added to the Examiners; and the President and Censors of the College of Physicians are entitled to be present and to vote at the examinations.

In 1849, a separate chair of Surgery was established; purity on the lectures being necessary for attaining the purely Medical degree. This was followed, in 1852, by the establishment of a separate school of Surgery.

By the alterations and additions just described, a Board has been formed to examine in every branch of Medical science; and it is so constituted that the majority of those who decide the fate of the candidates, namely, the University Professors of Anatomy, Surgery, Chemistry, and Botany, and the President and Censors of the College of Physicians, have no pecuniary interest whatever in the result of the examination, and derive no emolument from the pupils; for Students in Arts, having their names on the College books, are permitted to attend the lectures necessary to qualify them for their Medical degree with each of the University Professors, free of expense.

An important change has also been made by the recognition of Medical studies as portions of the Arts course. A regulation has been adopted by which the *Professional Student*, that is to say, the Student in Medicine, Divinity, Law, or Engineering, as the case may be, is exempted from certain portions of the course in Arts during the last two years of its continuance, on condition of his certified attendance on the lectures in the Faculty in which he has matriculated. This we look upon as a most wholesome and important change. It provides that the Medical Student shall receive a full

education in Arts, so as to qualify him for his A.B. degree; in his classical, mathematical, and physical studies he stands on the same level with the Students of Divinity and of Law; while the value of his Medical studies, as a branch of general education, is admitted.

Lastly, an important change has been made in the mode in which the examination for the degree of Bachelor of Medicine is conducted. Formerly the candidates were examined separately, and upon one day, by the whole Court of Examiners, the examination being entirely *vivâ voce*. By a late decree of the Board of Trinity College, it is ordained that the examinations shall continue for two days, occupying four hours of each day; that they shall take place in the public hall of the University; that the examination of the first day shall be conducted by means of printed papers; one, containing five questions, furnished by each Professor in the School of Physic, in the presence of the Regius Professor of Physic, or of some Professor deputed by him, while the second day is devoted to a *vivâ voce* examination in class by the entire Board of Examiners.

The examination for the Medical degrees previous to the late commencement, held on the 2nd of July, were conducted in accordance with these regulations. On the day following the last examination, the Professors met, in conformity with the above decree, to decide on the successful candidates, and also, by comparison and analysis of the answering, to determine their relative merits; thereby, and for the first time, assimilating the examination for Medical degrees to that for the other degrees in the University, and also to the examinations for honours. It is intended that the names shall appear in the University calendar in the order of merit. This arrangement will obviously pave the way to the establishment of University Medical honours.

The general result is, therefore, that the University of Dublin, which has long possessed a full, and, latterly, a greatly extended School of Medicine,—embracing, in addition to the Chairs of Anatomy, Surgery, Chemistry, Botany, Practice of Medicine, Institutes of Medicine and *Materia Medica*, those of Midwifery and Medical Jurisprudence; and demanding further, a full attendance on Practical Chemistry and Practical Anatomy, as well as on the practice of a purely Medical and also of a General Hospital; while, in addition, the degree of Bachelor of Medicine is unattainable without graduation in Arts at the termination of a four years' course in that department;—presents its *alumni* with degrees representing the highest amount of qualification required by any educational body in the United Kingdom.

On a future occasion we shall speak more particularly of the School of Surgery established within the last few years in this University.

THE WEEK.

We have received some communications representing the injustice of excluding the University of St. Andrew's in Scotland from taking any part in the new Scheme of Medical Education, proposed in the amended Medical Reform Bill. It certainly appears that the exclusion of this ancient University from the category of Scotch Colleges is somewhat unjust, and is inexplicable upon any definite or substantial grounds. If it be urged that St. Andrew's has no complete Medical school, it may be truly stated that the London University has no Medical school at all: King's College, Aberdeen, has but one Medical Professor, and even the Universities of Oxford and Cambridge are still very deficient as schools of Medical science. The Degrees of the London University are, it is true, justly held in very high esteem, and the small number of candidates who take those degrees are among the *délite* of the Profession; but it should always be