

THE LANCET.

LONDON: SATURDAY, APRIL 16, 1887.

THERE is a great tendency in the mind of everyone to magnify the importance of the work in which he is engaged, and to seek better methods or further powers for its execution. It is by such efforts that improvement is made, for by constant perseverance the worker succeeds in carrying with him the greater number who know or care little about the subject matter which their more enthusiastic fellow-citizen has taken in hand. We can, therefore, fully sympathise with a desire to see perfection attained, and certainly no one who has any experience of the ill-health which can be produced by ill-constructed houses will hesitate to welcome any well-directed effort made to bring about the changes which increasing knowledge has shown to be necessary, and especially when evils are being perpetuated more on account of the want of appreciation of that knowledge at its proper value than for any other reason. When, however, it is proposed to embody in compulsory legislation for the many the principles which have been accepted by the few, it is time to consider how far the proposal is calculated to effect improvement, and whether the cost and the means to be adopted for this improvement are such as to meet with general approval.

Two Bills have during this session been brought before Parliament relating to the drainage of houses and public buildings. It is not at first obvious why other parts of house-construction, which certainly are as intimately associated with health, are not deemed worthy of similar treatment; but as matter of fact they are omitted from consideration. The reason for drainage being held to be of such pre-eminent importance is probably due to the circumstance that a large number of people are now employed in the reconstruction of house drains and their fittings while as yet no such attention has been devoted to the other conditions to which we refer. As a result, the use of the word "sanitary" is being limited, very improperly, to matters which relate to drains, and we not only hear of sanitary surveyors as a class of persons who devote their attention especially to drainage, but we have a Sanitation of Houses Bill dealing solely with this subject. The authors of this Bill are evidently dissatisfied with the manner in which house drainage is constructed in the metropolis, and feel there is little hope of improvement from the local authorities, who have since 1855 very generally neglected to exercise in the best way the powers with which from that year they have been endowed, they therefore propose to constitute an entirely new authority to take over the duties which have remained unfulfilled. The Bill unfortunately, in its inception departs from those principles which are the foundation of all modern legislation, and therefore has small prospect of becoming embodied in the Statute-book. However right may be the views held by certain professional associations, it is not probable that the Legislature will empower them, as the Bill provides, to elect the members of an authority

authorised to enforce these views upon all London house-owners. The proposal to place all houses under the control of a dozen men elected in this manner is, indeed, evidently the suggestion of amateurs.

The second Bill is more modest in its ambition, inasmuch as it proposes to limit itself to dealing with buildings of a quasi-public character, such as schools, hospitals, hotels, and lodging-houses, but the area of its jurisdiction is to be wider and is to extend to all towns of 2000 inhabitants and upwards. The Local Government Board are to be an authority for the issue of licences in sanitary practice to certain persons and corporations, and for the most part are to grant these upon the certificates of a governing body to be elected in the same manner as in the other Bill. Existing local authorities are under this Sanitary Registration Bill to be permitted to have some share in this comprehensive work, for they are to open a register for all buildings which receive certificates from the licentiates, and are to prosecute the owners, lessees, and occupiers of those buildings which have not received this evidence of the perfection of their drainage. But this certificate is not to remain in force for more than five years, and the same process will therefore be repeated at the end of this period.

There is much to be said in favour of the principles of drainage which are embodied in these measures. Speaking generally, they are those recognised in the model bye-laws of the Local Government Board. When, however, it is recollected that under the Metropolis Local Management Act and the Public Health Act there is already ample machinery for bringing about, both in the metropolis and in the provinces, the ends which the promoters of these measures have in view, it may well be asked, What is the need for further legislation? The answer is doubtless to be found in the fact that the local authorities have to a considerable extent neglected to exercise these powers. This accusation is, we believe, well founded, but the remedy suggested is impossible. What is possible, however, is for the supporters of these Bills to influence the authorities, and by joining them and taking share in their proceedings they would inevitably bring about the more effectual local supervision which is required. Nor need their influence be limited to drainage alone; there are other important questions of local government not less seriously neglected, and the best results would follow if skilled members of the professional classes thus made their special knowledge a guiding power in matters which closely concern the health and prosperity of communities.

THE subject selected for treatment by the Croonian lecturer of this year is one of abiding interest; and he deserves thanks for doing much to widen and deepen that interest. The study of the pulse and its indications is, indeed, as ancient as the medical art itself; and one has only to turn to the writings of HIPPOCRATES to learn how closely and how accurately its variations were observed, with much remarkable result in prognosis and treatment. For, however faulty may have been the ideas concerning the nature of the pulse that have prevailed from the days of HIPPOCRATES almost until now, no one can venture to dispute the accuracy of observations and the sagacity in clinical interpretation that

have gathered around this subject. With the rise and progress of physiology there seemed to be a fear lest we should set at nought the old teachings and neglect too much the time-honoured practice of feeling the pulse. Nor was it without reason that the lament arose that the rising generations of practitioners were neglecting the old ways, and relying more upon instrumental aids than on the *tactus eruditus*. To feel the pulse was in danger of becoming a merely ceremonial act; and the reading of the sphygmographic tracing was held of greater import than the reading of the lessons of the finger. Not that we believe this lament to have been ever justified, or that mechanical apparatus, however cunningly devised, can equal in delicacy the educated tactile sense. There was never any real danger of converting our clinical records into a series of observations in which the observer only played the part of a skilled mechanic. Yet it is well to be reminded that the pulse is to be read with greater accuracy and certainty by the old method than by the use of the instrument which we owe to the genius of MAREY. The sphygmograph has done a great deal to interpret the significance of the pulse, and advance our knowledge of the circulation in health and disease; but as a means of clinical observation, as an aid in diagnosis, its place is necessarily subordinate to the older practice. This Dr. BROADBENT did well to state, and also to dismiss, once and for all, the pretensions to a precision which the sphygmograph cannot claim. No doubt much of the attraction that the study of the pulse had for our fathers lay in the mystery that invested it; and the care with which they separated its varieties, and allied them to differences in temperament and habit, as well as employed them in prognosis and diagnosis, was more or less influenced by the superstitious reverence in which it was held. Nor did the discovery of the circulation, the starting-point of physiology as a science, go far to dispel the glamour that invested the subject, and the true nature of the pulse remained more or less concealed. Dr. BROADBENT, therefore, did well at the outset to clear the matter of its surrounding misconceptions by laying stress on the fact that the pulse felt by the finger as it depresses the artery against a resisting surface is the sign of the momentary heightening of the blood pressure due to the impact of the ventricular systole. It cannot of course be denied that the vessel is distended at the moment of its receiving this impact; but it is not dilated. It is not in healthy conditions disturbed from its bed. Nor does it indicate the actual movement of the blood column. It is a physiological truism that the rate of the (so-called) pulse wave is wholly different from the rate of the blood current; whilst if the current be checked the pulse grows in vigour. The pulse, then, thus simply interpreted, gives information mainly upon one of the chief factors in the circulation; it indicates changes in the degree and duration of arterial blood pressure, besides informing us of the rate of the cardiac contractions, which are also often dependent upon changes in that pressure. By observation of the pulse we determine the condition of the circulation; we infer from its indications the character of the circulation in the periphery, as well as the vigour of the heart; we can learn the condition of the arterial system; and, finally, base upon physiological grounds the evidences of derangement in the circulation thus derived.

No more can be claimed for the pulse than that it is the best index we have of the condition of the circulation in the human subject, and the more the sense of touch is educated to detect the variations in the pulse, the more accurate will be our perception of this condition. The Croonian lectures have introduced us to this subject, with ample illustrations drawn from a wide clinical experience; and yet, if they have done good service in directing attention to the relations between conditions of circulation and disease, they have equally left open many paths for further exploration. Dr. BROADBENT has no hesitation in dispelling a delusion which is as old as the art of feeling the pulse. He declares that he has been unable to associate any condition of pulse, as regards low or high tension, with any special vigour of body or mind or any peculiarities of temperament. Persons with a pulse of low tension may perhaps, he tells us, be longer lived; they may not wear out so rapidly; but, if better able to endure the stress of life, they are less capable of withstanding the onset of acute disease. In the presence of such considerations and of individual differences, it would, then, seem to be hopeless to create a criterion or a standard of health from the condition of the circulation alone, in spite of all *a priori* notions to the contrary. When, then, we learn, as in the very interesting lecture that closed the series, that certain nervous derangements—notably insomnia, convulsions, and melancholia—are referable to circulatory disorder, we may faintly ask whether this latter is sufficient by itself to produce these effects. As regards insomnia, the evidence adduced by Dr. BROADBENT would seem to be all-sufficient, and his very practical suggestions upon the different forms of insomnia associated with pulses of high and low tension respectively will be appreciated. As to convulsions, and their assumed induction from changes in the intra-cranial pressure due to changes in arterial pressure, it requires something more than the latter to account for the phenomenon. We admit the strength of the evidence adduced in support, especially that afforded by the arrest of the convulsions on reducing the blood pressure by bleeding; but the circulatory condition is one so common, apart from these nerve symptoms, that we must assume superadded instability of nerve tissue in all such cases, whether uræmic or otherwise. The same applies to the argument respecting melancholia, by which we gather that Dr. BROADBENT would infer that the long continuance of heightened blood tension leading to vascular changes will ultimately affect the nutrition of the brain and degrade its tissue. That calomel should purge the soul of melancholy is an interesting, if ancient, fact; but that the whole of its explanation lies in the reduction of the arterial tension, or that changes in the arterial tension are alone adequate to explain the cerebral state, are subjects which may well be further investigated. This is but one instance of the points raised in these lectures. We must refer to the text for the careful expositions, with a wealth of clinical illustration, of the variations in the pulse; the conditions of low tension and high tension, and their significance; the bigeminal pulse, and its relation to the infrequent pulse, in which only one out of every two cardiac beats succeeds in reaching the wrist; the conditions of irregularity and intermittence, of dicrotism and of abnormal frequency, especially some remarkable neurotic conditions described.

These topics were dealt with in a manner which is sure to attract attention, and cannot fail to render great service to clinical medicine by enforcing greater precision in observation and supplying fresh material for thought.

THE excellent abstracts of English and foreign chemical research which appear every month in the Journal of the Chemical Society of London render it an easy task to trace the progress which physiological chemistry is making. Nothing very remarkable has appeared for some time, but there is a constant influx of new and careful observations, valuable in themselves, and still more valuable as supplying material for new generalisations. England's share in the work is unfortunately but small. We have a few good workers, but Germany beats all other nations put together in her industry in this branch of inquiry. We cannot pretend to summarise all the discoveries of the last few months, but a short account of a few will be interesting to those who have not time to read the journals in which they have appeared.

J. SEEGEN, in *Pflüger's Archiv*, has contributed some interesting experiments on the relations of sugar in the organism. Confirming and extending his previous observations, he finds that with any diet and even during inanition the liver forms sugar, probably from peptone. The quantity of sugar is doubled during the passage of blood through the liver. In a dog weighing 10 kilogrammes the quantity of sugar formed in twenty-four hours was not less than 200 grammes. With an almost exclusively fat diet this quantity continued, and as the quantity of nitrogen excreted was only 15 grammes the sugar could not have been due to the decomposition of proteids. In a second paper the author shows that the liver is capable of converting not only fat, but each of the proximate constituents of fat, the fatty acids and glycerine, into sugar. This is very important indeed. In the same number which records the last observation F. RÖHMANN states that ammonia, as well as its derivatives asparagine and glyocol, increase remarkably the quantity of glycogen formed in the liver. The true relation of glycogen to sugar in the liver seems still a little uncertain. Is glycogen always formed first, and is the sugar found in hepatic blood formed by the continual metamorphosis of glycogen? That seems the most probable view. SEEGEN, on the other hand, from experiments on the action of defibrinated blood and peptone on fresh liver, concludes that sugar is formed directly from fat and from albumen, but not from glycogen. In that case what becomes of the glycogen? Some interesting researches on the subject—which, however, do not appear final—were contributed to a recent number of the *Comptes Rendus* by CHAUVEAU and KAUFMANN. They confirm the statement that glycogen accumulates in the muscles during rest, but diminishes during motion. It will be remembered that, on the other hand, lactic acid increases during exercise. Glycogen, according to the last-named observer, is a storehouse of energy available at any minute for increased work.

Some interesting studies of the ptomaines, so important from the toxicological point of view, have lately been made. One of great practical value appeared in our present volume. Mr. FIRTH (*THE LANCET*, 1887, vol. i., p. 213), tracing the origin of an epidemic of purging and vomiting among

soldiers in the Punjab, obtained from some suspected milk which had been kept in foul pans a crystalline substance of unpleasant odour and taste which communicated similar symptoms to men and dogs. Pure milk after standing for two months yielded the same substance. In the *Chemisches Centralblatt* of last year (p. 647) appeared a paper by C. GRAM, in which some light is afforded in regard to the difficult question why some of the so-called ptomaines are poisonous while others are not. Ptomaines were obtained from putrid meat easily enough, and proved inert. But when the hydrochlorates and lactates of these bases were exposed to heat, the former remained inert, while the latter developed distinctly poisonous properties. This seems to illustrate the ready formation of poisonous ptomaines from milk. The author then proceeded to test the theory which has been started—that the active poison of ptomaine is isocholine or neurine, the isomeric variety of choline. By heating the lactate of choline, itself inert he obtained a poisonous substance similar, at any rate to a poisonous ptomaine, and possessing the peculiar odour of muscarine, which is oxy-choline. BRIEGER (*Berichte* 19, p. 3119) describes a volatile alkaloid forming crystallisable salts, and having the formula $C_5H_{11}N$, which he obtained from beef extract in which Rosenbach's microbe had been cultivated. It is monobasic.

Of interest in another direction is an hypothesis on the origin of the free hydrochloric acid of the gastric juice propounded by LANDWEHR (*Chem. Cent.*, 1886, p. 484). It is well known that common salt is decomposed by free lactic acid. This takes place even in cold solutions, as may be shown by the addition of common salt to a solution of lactic acid coloured by methyl-violet. According to LANDWEHR, who has worked on the subject in conjunction with FICK, lactic acid is formed by fermentation from the mucus of the stomach, and, acting on alkaline chlorides, liberates hydrochloric acid, which in its turn acts on the albuminoids, combining with them. As peptonisation goes on, the hydrochloric acid is liberated, while the lactate of sodium is assimilated.

Another valuable research is that of R. KULZ on the gases of parotid saliva, which was published in PETTENKOFER and VOIT'S *Zeitschrift für Biologie*, pp. 23–321. Dr. HALLIBURTON'S able synopsis is only a little too long to be quoted entire, and we wish we could reprint it. Saliva was drawn by a cannula from Stenson's duct, and was collected over mercury. One hundred cubic centimetres gave 7 cc. of gas, of which 1 cc. was oxygen, 2.5 cc. nitrogen, and 3.5 cc. carbonic acid. Phosphoric acid caused the evolution of from 40 cc. to 60 cc. of carbonic acid present as carbonates in the saliva. It is noteworthy that the oxygen and nitrogen are higher than in blood-serum. The uniform alkalinity is due to the carbonates, and it is found that the secretion of gastric juice, which produces great variations in the acidity of the urine, even in some cases rendering it alkaline, does not affect the saliva. This is shown by direct filtration, and also by the estimation of combined carbonic acid.

Space forbids us to speak of some other recent contributions to physiological knowledge, but a word must be spared for H. STERN'S paper on the origin of the bile colouring matters (*Chem. Cent.*, 1886, p. 481). The experiments were made in two

series, in one of which the bile ducts were ligatured, and in the other the liver was thrown entirely out of the circulation. In neither case did blood, urine, or tissues show any trace of bile pigments, and the author concludes that these substances originate entirely in the liver itself.

AN influential party in the State has commenced an agitation as to the quality, or, as they put it, the purity, of the great national beverage, beer. It is alleged that beer is adulterated, not only in obvious defiance of the law by publicans, but also with the sanction or connivance of the law by many brewers. Beer, say the complainants, is a beverage made from malt, hops, yeast, and water. Anything else used in the manufacture is an adulteration, and is not only a fraud on the purchaser, who thinks he is buying malt-and-hop beer, but is also a possible and even probable injury to his health. These are serious allegations, and require most careful consideration. We will state our view of the case impartially, and shall at any rate be acquitted of sympathy with the baneful work of the adulterator.

First in the order of study comes the all-important question, What is beer? And the answer is by no means so easy as might be supposed. Beer, like wine, is of extreme and unknown antiquity. It was made by the Egyptians from barley, probably, as Herodotus asserts, because the vine did not flourish in Egypt. In some parts of Europe it took the place at a very early period of the mead made from honey which maddened the brains of more northern races. As far as malt goes, the definition of beer appears, therefore, at first glance simple enough. Taking our stand on ancient history, we may say that it is a liquid obtained by the fermentation of malt, or rather of the sweet wort obtained by the diastasic conversion of the starch of barley. But in the fermentation by which the alcoholic beverage known as beer is finally produced, the chief chemical change is the conversion of sugar into alcohol and carbonic acid; and other kinds of sugar besides the sugar of malt, now known as maltose and recognised as a distinct compound, are capable of yielding alcohol and carbonic acid by fermentation. For many years past the law has, rightly or wrongly, permitted the use of sugar in brewing, and it is very extensively employed at the present time. We have, therefore, in this as in all other cases of alleged adulteration, to inquire first, and above all, whether such a modification of the old brewing process is detrimental to health, and, secondly, whether it can be considered as a fraud upon the purchaser. We are unable to answer either of these questions in the affirmative. It has, indeed, been asserted that the products obtained in the fermentation of artificial glucose are cruder and more noxious than those derived from a natural sugar, such as the glucose of grapes or the maltose of wort. But, as far as we know, no definite proof of this assertion has been produced, and until it is forthcoming the assertion itself must be dismissed. The question of fraud is less simple, but the answer appears to us to be equally inevitable. If the Excise permit the use of any innocuous saccharine fluid in brewing, the public are thereby made aware of the fact. The demand for the beer so made will depend on its quality and its price, and on both these points the public are

competent judges. The price will evidently be determined ultimately by the ordinary laws of competition. To put an extreme case, suppose that beer equal in quality to that supplied by the best-known brewers could be made for half the present cost, it cannot be doubted that those great firms would soon find themselves suffering from a competition which, although unpleasant for them, would be advantageous to the beer-loving public. If the cheap beer were inferior to that of the well-known makers, there would be, as there are now, plenty of people willing to give the higher price for the better article. But to prohibit the sale of cheap beer, unless on the ground that it was unwholesome, would be as absurd as to prohibit cheap claret or cheap tea. Of course, if the brewer or the publican sold such beer as made from malt and hops only, or, worse still, as that of well-known manufacturers, he would commit a fraud, as he would if he sold *vin ordinaire* as some celebrated vintage. But if he sells a pint of beer or a bottle of claret without further description, he commits no fraud. If the purchaser does not like it, he will go elsewhere, and the vendor will lose his customer and in time his trade.

The case of hops is still simpler. The hop-resin is a wholesome tonic bitter, but its use in brewing is, compared with the manufacture itself, quite a modern innovation. Nowadays we think it an improvement, as some may do a dash of chicory in coffee. The beer of to-day, even when made from malt and hops only, is a very different thing from the beer which washed down the breakfasts of our forefathers. Now and then in an old-fashioned inn we still meet with the "hard" or fully fermented ale which was formerly so much prized, but to most modern palates it is unpleasant. Surely no one would pretend that the brewer who left out hops altogether did not brew beer. The experience of thousands of years would contradict him. But the taste of the present time demands a bitter, and provided that the bitter be wholesome we do not see that it matters much which is used. If the brewer uses picric acid or strychnine or any other noxious substance, we have nothing but detestation for him—down with him by all means, and as soon as possible. But if he selects a perfectly harmless bitter, he has, we submit, a perfect right to do so. The beer will perhaps be nasty, but in that case the public will be no more willing to drink it than they would a decoction of senna. We have tasted beer made, we were told, without either malt or hops. It was interesting as an example of applied chemistry, but we experienced no desire to repeat the experiment.

The fact is, the cry about pure beer is but the despairing wail of the unfortunate agriculturists, for whom in their bad times everyone feels the deepest sympathy, but for whose misfortunes it is hard to find any remedy that would not be worse for the community than the disease. Simultaneously with the beer agitation, and illustrative of it, is the cry for an import duty on hops. It is not for us to discuss the vexed question of free trade *versus* protection, but it is obvious that hop-growers are not the only persons who suffer from free importation, and that if they were relieved by an import duty it is difficult to see where we could stop.

DR. BRUNTON has fulfilled the promise made in our columns that in the preface to the third edition of his well-known

work, "Pharmacology, Therapeutics, and Materia Medica," he would express his opinion regarding homœopathy in reply to the charge that he had taken many of his principal drugs from the Homœopathic Materia Medica, as well as the indications for their use. It is a favourite delusion of those who hold peculiar views that all other people's best ideas have their germ in what they think their peculiar property. The homœopaths have this delusion to a happy extent, and cultivate it diligently in their writings, though in their practice nowadays they are as little hindered as other practitioners by any exclusive principles or dogmas. Our simple object, however, just now is to give our readers the benefit of Dr. BRUNTON'S views on homœopathy as a system. First, and most pleasantly, let us record his admissions of the service it has done, though similar admissions have been made before. Dr. BRUNTON says the system which HAHNEMANN founded has done great service by teaching the curative power of unaided nature, the use of diet and regimen in treating disease, and the more than inutility—the actual hurtfulness—of powerful drugs in many instances. Dr. BRUNTON shows how homœopaths are led to be anxious about diet. "If," says he, "a patient was being treated with *carbo vegetabilis* in the thirtieth dilution, the utmost care was necessary to his diet, for if he happened to eat a single piece of burned toast at breakfast he would consume at one meal as much vegetable charcoal as would, when properly diluted, have served him for medicine during the remainder of his natural life." This is the only passage in which Dr. BRUNTON allows the ridiculous aspect of homœopathy to find full expression. We shall try to practise the same repression which he shows, and deal seriously with the claims of HAHNEMANN and his representatives.

First, Dr. BRUNTON very lucidly states what homœopathy is *not*; and, secondly, as lucidly states the very essence of the doctrine. One sentence on page xii. of the preface will give both points:—

"It is not the use of a single drug at a time, of a small dose, of a globule, nor even, as we have already seen, of a drug which may produce symptoms similar to those of the disease, that constitutes homœopathy. The essence of homœopathy as established by HAHNEMANN lies in the infinitesimal dose and the universal application of the rule *similia similibus curantur*."

The ordinary practitioner differs from the homœopathic in being free to use any drug which he knows to be of use in the case, and that in any quantity experience shows to be best. HAHNEMANN'S greatest delusion was that the causes of disease were not material but spiritual, and that medicines must be spiritualised to cope with them. Hence his infinitesimal doses. Fancy any of our best and most certainly remedial agents being used in this way and on this theory. When would ague be cured by quinine, or pemphigus by arsenic, or syphilis by mercury, if the spiritual theory of disease and drugs were adopted? Dr. BRUNTON says that HIPPOCRATES knew that in some instances a drug in small doses will cure a disease exhibiting symptoms similar to those produced by a large dose of the drug; but HIPPOCRATES had the sound sense to see, as some homœopaths have had the sense to see, that this was not a rule of invariable application; therefore not an invariable law, as HAHNEMANN taught.

Dr. BRUNTON deals with the favourite case of cinchona and

ague, the action of which drug on the healthy frame, homœopaths are fond of saying, led HAHNEMANN to investigate the action of other drugs, and thus lay the foundation of his system. Dr. BRUNTON shows that, though HAHNEMANN got symptoms of intermittent fever from taking large doses of cinchona, they were probably produced by the irritant action of cinchona on the stomach, which JORG found to be produced by two-drachm doses, half the dose that HAHNEMANN took. He thinks that pork-pie might have had similar consequences, having often seen ague reproduced from heavy dinners and other stomach irritations. We are pretty familiar nowadays with the effects of large doses of quinine, the essential cure of ague, but the production of intermittent fever is certainly not one of them. Our homœopathic friends appear to have been much misled by Dr. BRUNTON'S therapeutical index, which indeed seems a sort of *omnium gatherum* largely done by an amanuensis, and so imperfect that Dr. BRUNTON had nearly left it out of his book altogether. His own description of many of their favourite remedies is very slight, and such as to show no personal belief in their specifics. His estimate of HAHNEMANN will be endorsed by all who with sound minds have gone into the study of his views. This estimate is summed up in one or two sentences: "It seems to me that in founding homœopathy HAHNEMANN has proceeded with his facts as he did with his medicines—diluting his active drugs with inert matter, and diluting his facts with much nonsense." Again: "It is the falsity of the claim which homœopathy makes to be in possession, if not of the universal panacea, at least of the only true rule of practice that makes homœopathy a system of quackery."

If homœopaths rely on Dr. BRUNTON for any countenance of their fundamental doctrines they must be wofully disappointed. He is a leader in a new and active school of therapeutics. He is bound to no master. He seeks help in understanding the use of drugs from a study of their action both in health and disease. He gives HAHNEMANN credit where credit can be given, but this does not prevent his denouncing his system, and pointing out to those who have renounced his errors the supreme duty of frankness.

Annotations.

"Ne quid nimis."

THE REGISTRAR-GENERAL'S ANNUAL SUMMARY.

THE Registrar-General's annual summary of the mortality statistics of London and other large English towns in 1886 has just been issued, and contains no statistical fact of more interest than the proof of the continued low death-rate in the metropolis. The London annual death-rate was equal to 24.4 per 1000 in the ten years 1861-70, and fell to 22.5 in the following decennium 1871-80. During the first six years of the current decennium 1881-90, the mean death-rate further fell to 20.5; the rate in the last two years, 1885 and 1886, having been so unprecedentedly low as 19.8 and 19.9. It is worthy of note that the birth-rate in London in recent years has also shown a very considerable decline. In the nine years 1872-80 the range in the birth-rate was only between 35.9 and 35.3; while since 1880 the rate has steadily fallen year by year to 32.3 in 1886. The decline in the birth-rate in recent years has not been confined to London, or even to England; but having regard to