credit must be accorded for the success of the great measures affecting our profession which have passed through Parliament and become law, after being for twenty years or more before the public creating considerable agitation. Substantial as have been some of these, there are still a few things remaining to excite our vigilance and to call for redress. I will briefly turn to them. We require some law to prevent unqualified counter-practice. The chemists and druggists, under the protection of the Pharmaceutical Society, will soon, unless restrained, claim fellowship with us. It seems monstrous that they should be allowed to visit, and give advice and medicine to the sick. The present systems of Poor-law medical relief, provident dispensaries, and public hospitals, require close investigation with a view to render medical relief to the really necessitous poor more certain, and to prevent the bulk of the working classes from receiving medicine and advice for nothing. Some very able articles have appeared occasionally in the *BRITISH MEDICAL JOURNAL* bearing upon the above subject; and the time, I am confident, must soon arrive when decisive steps must be taken. The Charity Organisation Society of London has done a great deal of good; and were the British Medical and Social Science Associations to co-operate with them, I have no doubt the public would soon be interested in the matter. The Public Health and the Adulteration of Food and Drugs Acts are measures of importance, and have imposed great responsibilities upon the medical men who have been appointed to discharge such heavy and multifarious duties.

Looking back to some of the transactions of this Branch, I am particularly struck with one interesting feature which brings out vividly the character and worth of one of our oldest and most esteemed fellow-associates, viz., Mr. Thomas Taylor Griffith of Wrexham, who has on two different occasions been elected our president. To mark the great regard and friendship entertained towards him, the members, at the annual meeting held here on July 8th, 1873, presented Mrs. Griffiths with his photographic likeness, in a speech full of pathos and kindly sentiments by Dr. Hughes of Colwyn, formerly of Mold, who had also the able assistance of Dr. Llewelyn Williams of Wrexham, as honorary secretary of the presentation committee.

The medical profession ranks deservedly high in the estimation of the public; and its sayings and doings are eagerly scanned. But many members of it, I am sorry to think, have not that proper and exalted idea of the true ethical bearing which characterises not only the doctor, but the gentleman. Too much of the trade and underselling spirit pervades the minds of some, a great deal of charlatanism is practised by others. The really earnest lovers of the art delight only in securing to their patients the fruit of their skill and knowledge without the tares of sophistry and empiricism. These cannot, naturally, connect themselves with irregular practice; and whenever they are confronted with unqualified men, it will behave us all to rally round them, and tender our support and warmest sympathy. Some years ago, I recollect, at one of the annual meetings of this Branch, a strong resolution was unanimously carried against all recognition of quackery, whether in the shape of homœopathy or any other name. I invite notice to be taken of what has recently occurred at Llanberis and Bethesda. I have been acquainted with Mr. Hamilton A. Roberts for upwards of thirty years, and I have known Mr. Hugh Rees also for a considerable period. Both are members of this Branch; the former having filled with distinction the post of President. They have, as you know, voluntarily relinquished lucrative offices, rather than countenance bone-setters. We ought to convey to them our opinion of the unfair and most ungenerous treatment they have received at the hands of men who ought to have requited them better. A letter on the subject was placed in my hand, as I came into the room to-day. It is as follows.

"11, Victoria Place, Bethesda, 15th June, 1875.

"Sir,—Most of the members of the medical profession in North Wales are no doubt aware of the appointment of an unqualified bone-setter to act in conjunction with a professional gentleman at the Penrhyn Quarry Hospital. In consequence of this, Dr. H. A. Roberts, who has held the appointment of surgeon to the quarry for a period of about forty-three years, has thought it incumbent upon him to resign that post. I need not inform you that the resignation of Dr. Roberts is a matter of deep regret to all who have had the benefit of his skill and experience in this neighbourhood; and it has been resolved to present him with a testimonial as a slight token of their esteem and respect, and also as a mark of their sympathy, under the circumstances that have compelled him to resign. Subscriptions will be received by the undersigned, or by Mr. R. O. Morris, the Bank, Bethesda. (Signed, etc.) E. PHILIP WILLIAMS, Hon. Sec."

It is time I should draw this to a close; I am anxious to say a few words more before I do so. In conducting the affairs of this Society, I was for several years ably assisted by our old friend Mr. George

Turner Jones of Denbigh, who was lately obliged to resign the treasurer-ship, owing to bad health. You will join me, I am sure, in expressing our sincere regret at this circumstance, and hope that rest and genial climate may restore him to good health. I bear in grateful remembrance the substantial tokens of your good wishes towards me expressed on two different occasions. I am glad to say that Dr. Eyton Jones of Wrexham has consented to fill the office of honorary secretary of the Branch, and that Dr. Lloyd Roberts of Denbigh holds the treasurer-ship. I am rejoiced to say that nearly all the respectable and talented members of the profession in the United Kingdom and Colonies are now members of the British Medical Association. To those resident in the district of the North Wales Branch who have not yet joined our ranks, I would earnestly appeal, and ask them to become members. The advantages of membership are well defined in the mutual regard and friendship it establishes. I look back to the many years I have been connected with it with singularly felicitous reminiscences. I cannot recall an instance in which I regretted absenting myself for a few hours from the anxious duties of country practice to meet my fellow-associates at meetings like this. The objects of this Society are not those for the gratification of the moment; they point the attention of the profession to the attainment of those medical and scientific purposes for which principally it was established. Bringing so many together naturally conduces to the better cultivation of friendship and knowledge of each other, but for which this happy consummation would never have been attained. I thank you sincerely for listening to a somewhat prolix address, and fear I have occupied too much of your time.

ON THE VALUE OF ASSOCIATED WORK IN INVESTIGATING THE PREVENTABLE CAUSES OF DISEASE.

Abstract of an Address delivered at the Annual Meeting of the Southern Branch, July 1st, 1875.

By JOHN ORSBORN, M.D., Vice-President.

HAVING feelingly referred to the enforced absence of the President-elect, and expressed his conviction that he commanded the unanimous sympathy of the members of the Branch, Dr. Orsborn pleaded for the extension of consideration towards his own effort, in view of the short notice and the little leisure he had enjoyed for preparation, and his lack of experience as compared with that which Dr. Maclean had abundantly at command. Everyone familiar with the history and progress of medical science would be willing to admit that it might proudly take its position amongst the most highly cultivated branches of human knowledge; and, recognising the treasures which had been bequeathed to them by their predecessors, it was incumbent upon the members of the Branch to strive to aid in the completion of that edifice whose foundations had been laid by the great, the noble, and the good of their race. It appeared to him, further, that it was the special province of medical societies, more especially an Association so extensive and influential as that of which they constituted a Branch, which numbered not its hundreds only, but its thousands of members, to regard this rich inheritance with peculiar reverence, to foster it with the tenderest care, and to endeavour, by collective and individual efforts, so to use it that it should suffer no deterioration at their hands, and so to guard it that its prestige be preserved, its usefulness extended, and its boundaries enlarged, so that as an inheritance it might pass to their successors richer than it came to them. Although much might and had been done by individual effort, it seemed to him much more might be accomplished if the executive and members of the Association were to undertake the duty of organising some system whereby the smaller rivulets of knowledge that now in a large measure ran to waste could be guided, as it were, into one general current, so that they might become assimilated. This was not the time to consider the details of such a scheme, but he believed its adoption to be both possible and practical. For instance, what a high degree of interest would attach to a carefully arranged geography of diseases, acquired through the combined efforts of the members of the Association, contributing, as it might be made to do, to a medical topography of the several districts of the kingdom. No one could tell how far it might tend towards the elucidation of much that was now mysterious in the genesis of disease, or to the explanation of variations in their character. By its aid, some definite conclusions might be arrived at as to the effects of altitude, geological formation, direction of winds, proximity to the sea, the "lay" of the land, the dryness or humidity of the air, and other influences which in their totality constituted climate, upon diseases generally, and on epidemics specially. There was, without doubt, a certain range of variability

compatible with the preservation of health, but the accommodating powers of the system were limited, and it would be a great gain if by united efforts something like definite knowledge of such limits could be approached, so as to be able to predicate of a given locality that it would be favourable or inimical to health—that it would mitigate or intensify certain forms of disease. Geological formation had also its influence, by no means inconsiderable, on health and disease, not merely in so far as it might facilitate drainage, etc.; its more immediate effects would depend upon the character of the strata of any given locality, and on the water-supply thence derived. The full importance of water as a modifying element of climatic influences, and as a powerful agent ever present and participating in all physiological action and in every pathological change, was not by any means yet appreciated. He was speaking of water in its natural state, and free from those pollutions which were unhappily common. The members were familiar with some of the effects due to water *per se*, such as the prevalence of stone in certain districts and of goitre in others; but there were many other not so strongly pronounced manifestations of which they were entirely ignorant, or possessed but a vague and uncertain knowledge.

He next spoke of another matter requiring investigation, viz., the facility with which certain water not charged with lime-salts acted upon metals, acquiring thereby highly deleterious properties through passing through lead pipes: a danger not yet fully recognised as a source of disease, but which, either slowly and insidiously, or more rapidly, effected its poisonous work. Inquiry in regard to this matter was still more necessary in the present day from the circumstance, that from some cause, probably from a difference in the mode of manufacture, the action of the water on the lead was far more energetic than in former periods. Then, there was the prevalent use of copper vessels for culinary purposes, the baneful effects of which had been witnessed by himself in not a few instances. Other metals had their own peculiar dangers, and a new element in the genesis and modification of disease had been recently introduced with the extensive use of galvanised iron for the conveyance and storage of water in certain districts, a train of evil-marked symptoms ensuing upon the daily use of water thus contaminated. Not yet, too, was there by any means a full comprehension of the slow, silent, and disastrous consequences of the habitual use of adulterated food and drink, of the very lights burnt, and, as regarded certain colours, of the very clothes worn. Rooms were decorated with papers whose delicate and beautiful hues charmed the eye, while there was effluent from them a deadly poison. It had yet to be learned how much of chronic ill-health was due to these respective causes, and how far change of air owed its salubrious effects to an escape from these noxious influences.

Having at length dwelt upon the great gain which would come to medical science if minute and remote causes of disease were traced out by the machinery he had indicated, he referred to the action of stimulants as a subject deserving of consideration, with a view to the acquisition of more definite knowledge upon it. The diversity of opinion that obtained in reference to the medicinal and dietetic use of these, and the discrepancy of practice that prevailed, were greatly to be deplored, inasmuch as they imparted to the medical art a gratuitous measure of uncertainty, and detracted from its scientific pretensions. A wide latitude of opinion might be expected to prevail, but it ought not to be so wide as to embrace views so conflicting and irreconcilable that their existence would seem to indicate that a blind empiricism rather than a rational method was the guide of their practice. He referred to the investigations of Professor Parkes and others, as adding much to the elucidation of this subject.

In conclusion, he said if the collective efforts of the Association could be from time to time concentrated on subjects of inquiry similar to those he had mentioned, under some well devised methods of observation, they might well hope for the elucidation of much that was now vague and uncertain. The supplementary reports of the Privy Council and Local Government Board just issued demanded the careful perusal of every member of their profession, as well as of every thoughtful and humane citizen, for they revealed facts at which humanity stood aghast and decency was put to open shame. Their chief burden was the production of diseases by filth, and Mr. Simon said that the deaths in each year registered in this country (now about half a million a year) were fully 125,000 more numerous than they would be if existing knowledge of the chief causes of diseases affecting masses of population were reasonably well applied throughout England, this being the conviction of persons who had studied the subject. And with such terrible power did these preventable causes of disease in certain districts impress their fatal influence on infant life, that Mr. Simon had felt it to be consistent with truth to apply to such districts the epithet "Herodian"—a term expressive of the sacrifice of the weak, the helpless, and the innocent. "Put not your trust in princes", sang David in olden times, and to this

injunction, as regarded sanitary measures, they might now add, and still less in Governments, struck with apathy and palsied with indifference, who stood feebly tottering in the presence of "vested interests", and the "liberty of the subject", piously ejaculating, with averted eyes and uplifted hands, "Sanitas sanitatum, omnia sanitas". He exhorted the Branch, as members of a noble profession, as philanthropists, and as citizens, to bring all their highest mental powers, their best energies, their fervent resolves, to aid in a holy warfare against all preventable diseases. Ten thousand hands could not be ready, hearts willing, and voices raised, all in vain. They might not achieve a victory that should win the applause of a senate or the shouts of a people, or secure for themselves individually social distinction or titular aggrandisement; but there would remain for them the quiet enjoyment that flowed from a sense of a duty performed, a mission fulfilled, a conscience satisfied—a satisfaction that no patent could confer, no fountain of honour bestow.

ON THE PRODUCTION OF GLYCOSURIA BY THE EFFECT OF OXYGENATED BLOOD ON THE LIVER.*

By F. W. PAVY, M.D., F.R.S.,

Physician to and Lecturer on Physiology at Guy's Hospital.

THE author referred to a former communication to the Royal Society on "Lesions of the Nervous System producing Diabetes" (*Proceedings of the Royal Society*, vol. x, 1859-60), in which he made known that division of certain parts of the sympathetic system occasioned the presence of sugar in the urine. The results given in that paper showed that there were other means besides Bernard's celebrated experiment of puncturing the floor of the fourth ventricle, by which artificial diabetes could be induced, but they did not explain the reason of the appearance of the sugar, and the author still sought to discover something upon this point. The inquiry was pushed in various directions, but always with a fruitless issue until the summer of 1874. The author for some time past has been led to look to an altered condition of the blood flowing to the liver as likely to prove the most probable cause of the transformation of amyloid substance into sugar, which evidently constitutes the foundation of the artificial diabetes following operations on the nervous system. Schiff is of this view, and (*Journal de l'Anatomie et de la Physiologie*, Paris, 1866) has referred the escape of sugar from the liver, and thence the production of glycosuria, to the development of a ferment in the blood as a result of the hyperæmia (not necessarily of the liver) which follows the operations on the nervous system which occasion artificial diabetes; but, although the author has carefully examined this opinion, he cannot obtain evidence of the development of a ferment in the manner asserted. He has further tried the effect of introducing a secretion, viz., saliva, into the circulatory system, which is known to act as an energetic ferment upon the amyloid substance of the liver, and on one occasion he found, from some cause or other, that the urine became, to a moderate extent, saccharine, but in a large number of other experiments the operation was attended with a negative result.

Having so far proceeded without success, it occurred to the author to try the effect of introducing defibrinated arterial blood into the portal system. He was led to experiment in this way from having some time previously observed that when arterial blood only was allowed to flow through the liver, as, for instance, when the portal vein was tied and the hepatic artery left free, sugar escaped from the organ to such an extent as to render the contents of the circulatory system strongly saccharine. This result he had commented upon as being somewhat surprising, and as furnishing evidence standing in opposition to Bernard's glycogenic theory. He had not succeeded by the operation in producing glycosuria, because, as it appeared to him, no urine was secreted, owing to the ligation of the portal vein leading to such a diversion of blood from the general circulation by the accumulation occurring in the portal system, that the flow through the kidney was too slight to allow of it. He had endeavoured to overcome this obstacle by connecting, through the medium of a cannula, the portal with the right renal vein after ligaturing the corresponding renal artery. If the experiment had succeeded, the liver would have been left with its arterial supply, but the portal stream would have been diverted and made to reach the inferior cava without traversing the hepatic vessels.

As regards the operation, this the author found he could accomplish, but each time he performed the experiment the object he had in view was frustrated by the cannula becoming quickly filled with a plug of

* Abstract of a paper read at the Royal Society, June 17th, 1875.