was seldom averted. It was now admitted by nearly everyone to be possible to avert a threatened attack of gout or phthisis, both pre-eminently hereditary diseases. The judicious administration of a drug, either to produce a healthy action of the bowels, or else to calm and soothe a jaded brain, had again and again cut short undoubted symptoms of puerperal insanity.

Of the many various social problems that at one time or another had occupied the attention of the profession, Dr. Agar considered that the subject of inherited insanity stood pre-eminently first; and with the view of ascertaining to what extent it acted as a predisposing cause, he had collected a few statistics. The admissions on the female side of an institution for two consecutive years numbered 346. Out of this number, one or both of the parents of thirty-six patients had been insane at one time or another: or, in other words, direct hereditary disease was found in 10.4 per cent. of the cases admitted. During the same period, 306 male patients were admitted; of these, parental insanity was strongly marked in twenty-seven of the patients, thus giving a proportion of 8.7 per cent. In all these cases, no other cause than inherited disease was stated in the certificate of admission. These figures, not high nor alarming in themselves, would be comparatively insignificant if marriage were found to be a rare occurrence among these nervous individuals. It was, however, noticeable that celibacy existed in less than half of the cases. The number of children, the result of these marriages, were respectively thirty-three from the males, and thirty-five from the females. It was the future of each of these children that demanded our deepest sympathy and anxious consideration.

As examples of the injurious influence of hereditary neuroses, Dr. Agar sketched the family histories of the Roman Emperors and of the Spanish Royal Family, as described by Dr. Ireland, in his book entitled *The Blot on the Brain*. If, he said, the Romans could have recognised that the imperial purple was usually worn by imperial lunatics, and if they could have added to their matchless laws one to prohibit the insane from marrying, when there was no possibility of a stable offspring being produced, it would be difficult to estimate the enormous amount of human suffering that might thus have been avoided, in its turn exercising a mighty influence on the future destinies of the empire. Legislation in a like cause might have proved an incalculable benefit to Spain.

If the victims of hereditary nervous disease were those only whom the State recognised as insane, the evil, though great, might, perhaps, still be tolerated. But the failure of the parents did not necessarily show itself in the children, either in the same form, or in any recognisable form. Insanity was in truth only one phase out of many in which an hereditary neurosis might show itself. Some of the family of an insane stock became insane in the true sense; others were afflicted with allied neuroses, such as idiocy, epilepsy, and the various forms of moral insanity; while, in addition, a "borderland" between sanity and insanity must be recognised. The influence exerted by these unstable individuals, though difficult to estimate, was of considerable importance. In this class were comprised families where some members were odd in their feelings and action, others were victims of "fixed ideas," and others suffered from certain obstinate neuralgias, chorea, asthma, and diabetes. Any of these might be the harbinger of an attack of insanity, or alternate with it.

Dr. Agar had lately had an opportunity of watching a case of melancholia in a lady who for years was the subject of asthma. When she first came under notice, she was the subject of glycosuria in addition to her mental affliction. Later on, she ceased to pass sugar in her urine, but no improvement had been observed in her mental condition, and her asthmatic attacks had probably been more frequent.

It was an admitted fact that insanity was on the increase. In the thirty-ninth report of the Commissioners in Lunacy, the actual increase over the previous year was 1,176. It followed that allied neurosis would increase *pari passu* with the primary cause. This being the case, it was, in his opinion, little less than culpable neglect, if some efforts were not made to check, in some degree, this cause of national degeneration.

Marriage was often contracted in a blind and reckless way by those who had a strong predisposition to insanity. Although recognising the danger and difficulty of interfering with the personal liberty of the individual with regard to marriage, still, under certain conditions, the tendency to contract unwise marriages might be diminished. The conditions under which a definite opinion might be expressed, could be conveniently divided as follows:—

1. Marriage contracted when one of the parties concerned is still insane, or "when he is on leave" from an asylum, or registered hospital;

2. Marriage when insanity existed in one or both parents immediately before the birth of the individual;

3. The marriage of those saturated with insanity.

The possibility of immunity from mental disease in any of these supposed cases, would be admitted to be exceedingly small by all qualified to form an opinion. In order to restrict such marriages, one of two alternatives was open; either to agitate for legislative measures, or to leave the difficulty to be settled by individual enterprise. Those coming under the influence of such severe restrictive legislation would be socially ostracised, and probably regarded by the public with suspicion: thus adding to the difficulty of individual treatment, and perhaps precipitating or increasing the very influences which it was sought to counteract. On careful consideration, the wisest course would seem to be not to appeal to the law, but to the proverbially good common sense of the English public.

For this purpose, Dr. Agar suggested the formation of a medical council, composed of alienists and physicians, who would undertake to frame a concise statement as to the influence which the different degrees of hereditary and individual predisposition were likely to have in the production of insanity; and also to draw up rules for the guidance of the general practitioner, in giving his opinion with regard to the propriety of marriage when one or both of the parties concerned come of a nervous stock. For instance, the probability of immunity from future attacks of insanity occurring either in the contracting parties or their children, would widely differ in the following cases: (1) marriage taking place, the bride being at the time "out on leave"; (2) the marriage of two healthy individuals, with a doubtful case of insanity in a distant relative. No qualified medical men could possibly err in forming an opinion in two such extreme cases. But, filling up the individual links of this nervous chain, there would be found an infinite number of gradations which had to be taken into consideration. Standing midway between the general practitioner and the specialist, it would, he felt, be highly unbecoming for him to speak lightly of the professional attainments of his brother practitioners; but it was none the less a fact that the majority of those entering the profession could have little or no practical acquaintance with insanity. This was partly due to the omission of mental diseases at the various examining boards. In Ireland, the importance of mental diseases was recognised, and a three months' course of clinical work at a recognised hospital or asylum before being admitted to the final examination was necessary. But in England no such knowledge was insisted upon.

In conclusion, Dr. Agar discussed the best means of dealing with habitual drunkenness. As far back as 1858, the advisability of legislation for confirmed inebriates had been broached by Dr. Peddie, in a paper read before the Medico-Chirurgical Society of Edinburgh. The subject was allowed to drop, owing to the feeble efforts of the Lunacy Commission. Since then, the question had been well ventilated by various societies, journals, and daily papers, both in this country and also in the United States. While hesitating to adopt such gigantic restrictive measures on the liquor-traffic as were initiated in America, still it might be asked whether society was sufficiently protected from the consequences of drink by the Habitual Drunkards Act of 1879. In that one-sided measure partial provision was made for those well enough off to avail themselves of its protection. But any Bill which would meet the wants of society must be impartial, applicable to the rich and poor alike. It was generally believed that the poorer classes were more addicted to intemperance, and consequently furnished the largest proportion of dipsomaniacs; and it was they or their children who tended to crowd our workhouses, prisons, and asylums, thus adding an additional burden to the already overtaxed ratepayer. Could nothing more be done, Dr. Agar asked in conclusion, to help the victims of drink-insanity? for, in his opinion, the existing Act was worthless without a compulsory clause.

ON THE NATURE AND CAUSES OF DISEASE.

Delivered at the Annual Meeting of the Border Counties Branch.

By JOHN EATON, M.D.,

President of the Branch.

In commencing this address, Dr. Eaton noted the comparative scarcity of facts and the redundancy of opinions and hypotheses, which obscured all research into the nature and causes of disease. The true constituents of normal blood-plasma were as uncertain as the changes which the plasma really underwent in rheumatism, and it was still unsettled as to whether that disease was essentially a nervous disorder or a form of blood-poisoning. Yet, the task must be pursued, and clear ideas must be attained through patient scientific

research. Disease was clinically a disturbance of the normal play of the functions, causing pain, weakness, *malaise*, and biliousness, as was demonstrated by the phenomena of special diseases, but serious diseases often lay latent before developing clinical symptoms. Organic changes were marked in some diseases, apparently absent in others; but, after all, such changes would probably be detected in the latter class by further investigations. Disease was an abstract term, and it might imply disorder, suffering and loss of function easily accounted for by injury to or changes in organs and tissues, yet the term must also be applied to similar unfavourable subjective conditions not to be traced to visible injuries and changes; and lastly, morbid changes in structures may be independent of any symptoms.

The complexity of the causes of disease, and the difficulty of tracing them, was next considered. The beginning of an intelligent study of pathological anatomy was traced to Morgagni's *De Sedibus et Causis Morborum per Anatomen indagatis*, a work based upon a long series of necropsies made by himself and his master Valsalva. Morbid states of the blood were then discussed. Besides anæmia, spanæmia, leucocythemia, hyperæmia, and forms of blood-poisoning where mineral poisons were really found in the blood, there were also the morbid conditions where specific germs existed, and diseases where forms of life much higher than bacteria were found in the circulation. Reference was then made to the opinions of Panum, Burdon Sanderson, Bergmann and Koch, as to the precise relation of micro-organisms to the infection which they were said to produce, but with which they may only be associated. Dr. Eaton named the principal micro-organisms which had been considered as truly specific, and then gave a succinct account of Pasteur's work. Pathogenic bacilli, as well as the reputed essentially specific forms, were then named in association with the conditions in which they were found.

Notice was then taken of inflammatory products, textural changes and degenerations, new growths, and animal and vegetable parasites. These latter were described at some length, in an instructive manner. Malformations were also discussed. Then some words were said on the predisposing causes of disease, and the influence of age, sex, temperament, diet, occupation, heredity, intermarriage, previous attacks of disease, mental, moral and physical conditions, hygienic surroundings, temperature, atmosphere, habitat, and climate.

Lastly, Dr. Eaton mentioned the principal diseases which appeared to be independent of the above-named influences, and not assignable to any known cause, such as tumours, tetanus, linear atrophy of the skin, fragilitas ossium, mollities ossium, and other widely distributed or purely local diseases.

The lecturer concluded by stating that he hoped his brief review of the researches of distinguished modern authorities would render more definable to the minds of his audience, as it had already to his own mind, knowledge which might hitherto have been somewhat vague, and might henceforth prove suggestive of topics which waited for investigation by the medical profession.

ON THE EFFECTS OF DENTAL DISEASE.

Delivered at the Annual Meeting of the Bath and Bristol Branch.

By C. GAINE, M.R.C.S.,
President of the Branch.

MR. GAINE announced that his aim, throughout the address, would be to direct the attention of the various practitioners to some morbid lesions and important reflex phenomena, which were not unfrequently observed in the daily practice of medical men, and to point out to them where a properly educated practitioner of dental surgery might be of use in aiding the diagnosis of some forms of disease, which were more familiar in the course of daily work to a specialist than they could be to a general practitioner. When we thought of the wider ramifications of the fifth nerve, the distribution of which Mr. Gaine briefly described, it did not surprise us that local irritation of one set of its branches should cause widespread physiological phenomena. The fifth communicated with all the cranial nerves except, apparently, the olfactory, and it might yet be discovered that the trigeminal was, in some manner connected with the first pair.

The communications of the fifth nerve with the vagus through the tonsillar branches of the glosso-pharyngeal, which united with the palatine nerves (branches of Meckel's ganglion) were well known. Through this slender medium of communication, the only one yet made out, we frequently noted severe toothache where no caries, or other symptoms of inflammation, could be detected, through stomach-dysarrangement, which a purgative would frequently relieve, and, on the

other hand, gastric disturbance from the different forms of toothache, which relief of the local cause would surely cure.

Many varieties of neuralgia affecting different nerves and nerve-centres had been described, but very little was definitely known about the primary origin of any of them when the pain was of an idiopathic nature. Of the neuralgias described by different writers, but few were attributed to tooth-irritation, although many kinds had been relieved or cured by the removal of a diseased tooth or teeth. A few years since, an obstinate case of chorea in a child, 8 years old, came under the lecturer's care, and was cured after the extraction of several deciduous teeth. The most common form of neuralgia affecting the fifth nerve was *tic douloureux*, and this had been frequently cured by removing a tooth or teeth—either carious, or crowded, and impacted as to cause pressure on some nerve-filament, during the process of eruption; the offending teeth, when not carious, could only be discovered by expert sounding or tapping with a steel instrument. This delicate percussion would probably fail the first time, when no signs of periosteal inflammation could be seen, to discover the affected tooth; but at a second visit, a few days later, the cause would probably be detected. Let it not be understood that teeth were frequently the cause of this distressing malady. It arose from a variety of causes, and was probably most frequent in women about the climacteric period; and Mr. Gaine had not found a dental origin for hemimeria.

With regard to those cases where the teeth were primarily affected, either from overcrowding, caries, or congestion of the periodontal membrane, or from tardy eruption of the wisdom teeth, or necrosis of a tooth, or any part of the alveolar process or jaw, technical inquiry would rarely fail to detect the origin of the trouble, and prompt treatment might avert long and painful disease and invalidism. Early attention was always particularly necessary where a fault in the teeth was suspected, causing pain or stiffness in the jaw or surrounding structures, especially if near the time for the eruption of the wisdom teeth; for trismus was apt to set in very rapidly, and any operation that might be necessary was easiest before the spasm of the jaw, with its full complement of teeth, had set in.

The lecturer then referred to his own researches, already published, on trismus or purulent discharge of the antrum and nasal fossæ resulting from dental and alveolar inflammation. He described a case of ptosis and amaurosis associated with fractured upper molar and pus in the antrum. Removal of the stump and evacuation of the pus was followed by disappearance of the ptosis. Another case of neuralgia, trismus, and sinus below the lower jaw was caused by an unerupted wisdom tooth. The removal of that tooth, with the molar next to it, cured the patient. Mr. Gaine related a remarkable instance where, after a blow over the teeth, a lady suffered from paroxysms of pain darting through the head to the back of the ear and down to the shoulder. A lower second molar, which had lost its antagonist, was found to be tender on percussion, yet not carious. It was extracted, and the symptoms almost immediately disappeared. Mr. Gaine split the roots of the tooth, and found the dental canal of the posterior root almost obliterated. The pulp had, no doubt, been calcified for some time; and although the congestion of the periodontal membrane at the apex of the root was apparently slight, there could be no doubt that it was the cause of the mischief. This case showed how through the spinal origin of the fifth nerve, and its communication with the otic ganglion, a morbid impression could be conveyed to the brachial plexus and the ear. All the above cases showed the necessity of timely interference before sinuses had formed and burst through the integuments of the face.

Some observations were then made upon the chronic cachexia or septicæmia seen in persons who went about for years with carious but painless teeth in their heads, or with their teeth half buried in tartar. Such patients remained in a chronic state of invalidism, until the dental mischief was attended to. It was admitted that very serious diseases of the nervous system, even epilepsy and tetanus, were sometimes traced to dental affections. Mr. Gaine then spoke of epulis, cleft palate, and epithelioma of the gums.

The lecturer, in conclusion, referred to the necessity of specialism, as medical science was too wide to be taken up in its entirety as a profession. He advocated, however, the thorough education of dental students in all those branches of science studied by other students of medicine. It was very advisable for the dentist to take a surgical diploma, and it would be better for the public when his scientific education reached such an admitted degree of perfection as to enable him to practise preventive dentistry. By examining the teeth of children and adults, just as the practitioner examined their tongues, not only would dental disorders be averted, but likewise many of the general diseases of the various forms of impaired health, of which those disorders were the cause.