THE RÔLE OF EYESTRAIN IN CIVILIZATION.

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(Concluded from p. 666.)

The Ocular Symptoms.—One eye of De Quincey was kept closed in the latter part of his life when he was reading or writing, and is plainly divergent in his portrait. That proves a life of intense ocular strain. In the latter part of Wagner's life at least, the left eye was turned upward and outward, and the forehead wrinkled to keep the lid above the pupil. That demonstrates many years of grievous suffering. Parkman's photophobia was his first and most constant symptom during life; he also had blepharitis and Meibomian cysts. Pain in his eyes was as constant a symptom with Nietzsche as pain in the head and gastric trouble. Most people would think that because of these ocular symptoms such patients more certainly had eyestrain than the others without a single ocular symptom. This is not so. The almost universal rule is that the more severe the reflexes the more certainly the eyes themselves do not complain; or conversely, the more the eyes are injured by ametropia, the less the reflexes are shunted to other organs. That four out of eleven striking cases of eyestrain had severe ocular symptoms is highly exceptional, and shows that their defects were peculiarly irritating, and the labour to which the eyes were put was particularly severe. Parkman's photophobia was very exceptional. In old countries where patients do not have their errors of refraction properly and accurately corrected, one frequently sees patients with blue or coloured coquilles or "goggles" such as Parkman wore in the sunlight. Eyestrain frequently produces sensitiveness of the eyes to light, but in Parkman's case there was an extraordinarily high degree of it. Parkman avoided headache at least, if not gastric trouble also, by stopping near-use of the eyes. His "stirred-up head" with the least use of his eyes, would also stop when he ceased to work with eyes or brain. The most noteworthy of all the cases was that of Nietzsche, in whom eyes and brain suffered equally and coincidentally, both more than the digestive system, and all ingravescence until his mind gave way. This demonstrates the marvellous balance and equal resistance of all his organs and powers. The eyes first gave way, then the mental mechanism.

Some other Symptoms.—Connected with the insomnia of eyestrain is the symptom of night terrors, bad dreams, restless sleeping, etc., noted in the child Wagner, and in almost every child brought to the oculist's office. Unless relieved in the one possible way it means a life of intolerable suffering. I have in a day cured a number of children of nocturnal enuresis by glasses alone. The fickle appetite, especially for breakfast, the anorexia of such children, is also indicative of the same morbid cause. Extreme sensitiveness to noise is an aspect of the symptom of insomnia that has been noticed. Complaint of the "nervousness" of patients, young or old, the "fidgetiness," etc., of the waste and rush of our modern nervous life, fills the newspapers and magazines. Much of it is due to eyestrain. As high a proportion as 50 per cent. or over of modern school children are pronounced backward or subnormal in physical and mental qualities. Child suicide, the most frightful symptom of civilization, and general insanity, are both mathematically in proportion to the number of hours of school study demanded.

A critic has spoken lightly of the vast amount of drugs taken by the Carlyles in their struggle to prevent or cure their diseases. Quain was scornful and said that drugs and gingerbread caused Carlyle's woe. Nietzsche's sister, as much as the beautiful soul can be, is harsh-toned when she alludes to her brother's drug taking. But what else could they do? Who would not do the same under the like provocation? And Mrs. Carlyle would have been happier if she had taken as much morphine as Mrs. Browning. It is indeed true that opium was a blessing to De Quincey, as he said it was.

Before stopping I wish to allude to facial eyestrain expression. Observant oculists notice it when some patients enter the room. It is not always present, just as ocular symptoms may be absent in the worst cases. I should say that the expression of the eyes and face is characteristically morbidized in 50 per cent. of such patients, especially the older ones. In children with eyestrain, anaemia, anorexia, and night terrors, it is, however, usually to be detected. It is not a result of heterophoria, the latent or the permanent turning of the eye outward, such as De Quincey and Wagner had. That is a different matter, and causes a different expression. It is an almost indescribable haunting signal, as

exhausted and hopeless suffering, a sort of haggard, sunken look, telling a tale of pained, tired, and useless effort. In the later photographs of Darwin, of Carlyle, of Mrs. Carlyle, and of Whittier it is evident, and suggestions of it exist in those of others. (It was this look that first suggested to me many years ago that Carlyle was an eyestrain sufferer.) It is plainly present in the pictures of Beethoven, Tennyson, Mrs. Browning, etc. The "Bachelier eye" of Webster, Whittier, etc., I suspect was a result of the intensity and victory of the effort to compensate for the eyestrain present. Old painters sometimes reproduced the eyestrain expression more or less perfectly in their pictures of mediaeval saints and ascetics.

Lastly, I cannot forbear allusion to the influence eyestrain sequels have had on the growth during the last century of European spas and health resorts, springs and waters, sanatoriums, cures, establishments, etc. The histories of the search for health at these places by Wagner, Nietzsche, Darwin, Parkman, and Huxley bring vividly before the mind directly, and as much by indirection, that these resorts came into being largely, if not principally, in a pitiful attempt to cure eyestrain. Pleasure places and fashion resorts, one realizes often grew out of the superstition. The hunt for diet doctors and water doctors was so intense that its ludicrousness is almost as crying as its unavailing resultlessness, and both are only equalled by the pathos of it all.

Hydropathy, its gulls and its gullies, are still dismally echoing in the twentieth century. The peculiar kinds of diseases and of patients on which fatten a hundred forms of quackery, Eddyism, osteopathy, absent healing, and all the nauseating rubbish of several million maudlin American cranks and scamps, are also in big part due to an attempt to treat astigmatism by ignoring it, or by means of that potent article of the materia medica vulgarly named "tommy-rot."

Intercurrent Diseases.—Several of the patients—for example, De Quincey and Nietzsche—seemed extremely subject to influenza or colds; and especially Mrs. Carlyle. When not suffering from headache she was always suffering from colds or influenza—"eight influenzas annually," said Miss Martineau. They afflicted her all her life, most exasperatingly and most wearily. I have not copied near all the excerpts which prove the continuousness and severity of these seizures. It is gratifying to be able to quote a great medical authority that such attacks of colds and influenzas

may be due to micro-organisms, or local conditions in the air passages, but these maladies, as we now know, both depend to some extent on a special predisposition in the sufferer, having its root in the nervous system, and both leave their stamp on that system and gradually undermine it.

Now here is a truth, or a glimpse of it, that deserves most careful pondering by the profession. In Mrs. Carlyle's case it is noteworthy that these colds and influenzas did not co-exist usually with headache and sick headache; that they came on in a most unaccountable manner, without explainable reason, usually in winter, and remained long; and most remarkable that they ceased at the time of the great change in 57 or 62. Wet and foggy, or not, driving, sailing, or not, she is at this time "perfectly astonished with the impunity, etc." All of Mrs. Carlyle's sick headaches were caused by eyestrain, a fact beyond all question. As little doubt can there be that no cause can more directly and infallibly upset and morbidize the nervous, mental, and nutritional mechanisms. It thus supplied the "nervous system" with precisely the predisposing condition Sir James Crichton-Browne gives as the cause of colds and influenzas. The inference is very suggestive that Mrs. Carlyle's influenzal attacks were the reflex results of eyestrain. The smile of incredulity with which the all-wise may receive the thought has nothing to do with its truth or falsity. In private practice the fact of the interconnection of nasal and ocular diseases has often been noted. Illustrative cases have been published. The details of one such are of exceptional interest.

A healthy, clear-headed, intellectual man was given two pairs of spectacles for his myopic astigmatism, a stronger or higher correction for use at the theatre, driving, etc., a weaker correction for reading and daily or constant use. For a year his wife and daughter observed, without telling him, that whenever he wore the strong, or accommodation-exciting glasses, he "caught cold," with coryza, hoarseness, etc., which at once disappeared when the weaker lenses were used. He used the stronger ones but few times a year. When certain of the strange coincidence his wife told her husband. In the past ten years the cold has been produced in this way—a hundred or more times. Now, if his weaker glasses get

"crooked" or maladjusted, miscorrecting his axis of astigmatism by a few degrees, his cold promptly appears, to vanish in an hour after a visit to the optician.

Such cases of the inter-relation of nasal and ocular disease may be rare, but the careful diagnostician will always be on the look-out for them. Several of these patients also complained of parietic symptoms. It is not impossible that they were due to a reflex ocular neurosis, for I have had cases of numbness, aphonia, pareses, and partial paralyses of hands and arms due directly and beyond all doubt to severe eyestrain, and disappearing at once with relief of the cause.

Nietzsche, Mrs. Carlyle, and others had more or less constant rheumatism, and Parkman had life-long arthritis. A sound and healthy hip-joint, the supposed seat of neuralgia, has, I have read, been opened for toothache. Mumps may be located in the parotid or in the orchitic gland, and cases have been reported of transmigration to the brain. One who is careful to avoid the subtle demon of prejudice will not rush into dogmatism about the matter, either that such rheumatic affections may depend, or may not, upon eyestrain, that is, upon the ocularly-caused abnormalized nervous centres of control—vasomotor, reflex, or nutritional. There are multitudes of more seemingly absurd facts than that, well attested, too, by physiology and pathology. Throughout his eyestrain life from childhood on, Wagner was bothered by ever-recurrent attacks of erysipelas. How far that affection may also depend upon innervational and morbid vasomotor antecedents I do not know, and I suspect no other does.

The Heredity Theory.—When a certain class of medical and other scientists cannot explain a pathologic fact that is unduly troublesome, there is a hasty scuttling to the protection of the god of heredity. In one of these eleven cases, to the facts that the father died of typhus fever, that uncles and aunts had few children, and that the patient had sick headache, is ascribed her sick headache. That seems hardly scientific, and certainly does not explain her "climacteric insanity" nor her sick headache. Heredity is not at all understood, and has been unduly and illogically advanced to explain disease. It may fairly be said that it fails to explain more frequently than it explains, and the instances in which the supposed law is absolutely non-existent are more numerous than those in which it seems to give hints of a possible reason. Browning's physician acquiesced in the fatalistic necessity of his patient's headaches because in facial expression he resembled his mother. He forgot to ask where Browning's mother got her headaches, and if it were necessary to go back to Mother Eve! As all the world do not have headaches, it would follow that one-half exactly must have them (possibly correct!), and that Adam had none. From such childish science one can only turn with the evident question, What caused the headaches in the mother and in all ancestors?

The climacteric theory should have long since been abandoned. In order to apply to women it should have been noticed that the sexual climacteric is not synchronous with the climax of the symptoms. These grow more intense for about ten years after the menopause, and this fact makes a careful observer smile ironically at the pitiable hint of over-sexual-minded women patients, and of the professional opinion which has encouraged it. The mere cessation of a function not necessary to the life of the individual organism—hair growth, loss of teeth, loss of eyes, etc.; even the excision of arms, legs, uterus, etc.—does not produce positive symptoms. The *coup de grâce* of this ridiculous climacteric insanity nonsense is given by the very simple observation that the climax of the same kind of sufferings of men comes at the same age as in women, and if men have a sexual climacteric at that age, the genito-urinary surgeons have misinformed us.

A Physiologic Truth Ignored.—Concerning the eleven patients considered, of all earthly things, each most needed a simple optical device to have freed them, and to have turned the bitterest tragedy to perfect joy. All except one, inheriting the traditional and ridiculous prejudice, affected to scorn spectacles. For the rest, none except one could have obtained scientifically correct ones, and only in his old age; and he, alas, failed. Optics, opticians, scientists, physicians—all had forgotten that simplest of physiologic truths, that no muscle can be steadily and continuously innervated without pain, even for a few minutes. Of the ametropic eye the literary worker demands such an unrhythmic strain of innervation for consecutive hours, and for five, ten, and even sixteen hours a day. The intimate association of the eye with every organ of the mind and body, the amazing delicacy and complexity of the mechanism of vision itself, the absolute

dependence upon it for safety and sustenance, makes accurate seeing the *sine qua non* of the life of the organism. Accuracy in this supreme function has been insured by the punishment, on Darwin's own principles, of the organism endowed with the faulty organ; the head cannot direct because of pain, and the stomach with unattached organs, will not supply food to any part of the machine because it cannot digest. The sole conditions of safe and useful existence, the mathematically picturing eye, being denied, Nature strikes work and refuses brain and digestion. That may sound somewhat transcendental and deductionist in logic, but if Darwin and Spencer and Huxley are correct in their science, it is exactly what takes place in the struggle for existence by the elimination and destruction of non-competing and unsuccessful organs and organisms. Science and medical science, flushed with bacteriology and surgery, and prepossessed, obsessed, almost, with the thought of the infectiousness of disease, may neglect this truth, but not for much longer, and already with danger and expense.

The Cause of Disease and the Cure.—Just now the cry goes up from a united profession, and is appealingly echoed by kings and prime ministers, "Discover for us the cause of cancer." The most famous man in the world would be he who should make the discovery, and he would be justly honoured. But might it not come out that after all our acclaiming we should be no nearer an effective therapeutics than now? We know at last the causes of the two diseases of the respiratory organs which kill more than any other two. Is their deadliness any less because of our knowledge? It emphasizes the measures of prevention, and proves they are proper, but tuberculosis and pneumonia kill as many as before. Prevention is not the same as cure; it is, of course, better, but the laws of prevention are learned by simple observation, seeing macroscopically rather than microscopically, and reasoning straight from that, *plus* effective putting into practice of the known needed thing. It is again the old question of morbid soil and morbid seed. Hygienic living remains still the one preventive of the pulmonary conditions which make pneumonia and tuberculosis possible. One of the most successful, one of the most potent preparers of the morbid soil for any infectious disease is eyestrain, and it will in time be recognized as such. There is no single more prolific source of the anaemia, denutrition, than eyestrain and its reflexes, which prepare the soil wherein may spring up the weeds of any disease.

Eyestrain and its results depend, first, upon the kind and degree of ametropia and muscle imbalance, the latter a secondary and rare factor. The low and slight astigmatisms and anisometropias are more injurious to the nervous system than high errors. High errors change character and occupation, low ones disorder nervous control and nutrition. This is because the low error can always be only temporarily neutralized or compensated for, while at the same time the attempt to neutralize can never be renounced. It is a true task of Sisyphus. Secondly, the results of eyestrain depend upon the kind of organism in which they occur. The chemic reaction depends upon the substance in which the reagent falls. If the resistances or vital powers are great, the effects will be small, even of bad kinds of ametropia, while a small strain upon a morbidly unstable organism will end in disastrous consequences. The reflexes, like all forces, will take the line of least resistance, and wreak themselves on the less resistant organ. In an organism like that of Nietzsche, with splendid and equally resistant cerebral and nutritional systems, no one will give way, and the invader, not dreaming of desistance, the storming of all the defences continues until the defending general sacrifices himself for the cause of peace and to save his few remaining supporters. Rare as they are, such "victories" exist, and are the most lamentable of the results of the war of civilization. Thirdly, although but one of our eleven patients was a woman, the hurt of eyestrain generally is greatest in the female sex. For several reasons the incidence of the morbid effects of eyestrain falls far heavier upon women than men. Their organizations are more unstable, they are more emotional, and they are more sensitive to slight stimuli or inhibitions than men. These are powerful and effective reasons. I see other vague but real reasons why femininity of sex itself increases the liability, but I cannot even recapitulate them here. Outweighing all the others, however, the dominant cause of this seemingly unjust law of nature lies in the simple fact that women do most of the sewing, have more leisure for reading and handwork amusements, and because they live indoors far more than men. It is true that men are seizing

upon many of these occupations, tailoring, handicrafts, etc.; but that only makes the woman tragedy the more severe and bitter, as they are forced to other kinds of more enslaving eye labour. The suffering that is going on in conventual and educational institutions, and in the sewing rooms of the old countries, is literally appalling. A charity that would supply poor workwomen and workmen with the services of scientific oculists and scientific spectacles would stop more suffering than the combined almsgiving of the world. Fourthly: But the preceding conditions all depend upon a fourth. Eyestrain is wholly a disease of civilization. It is entirely an occupational disease. As an Indian or an African savage the ocular defects of any of the eleven patients would not have produced a single morbid result of the kind illustrated. Even a basket weaver or arrow chipper with the astigmatism of a Nietzsche would have found other work or been forced into it. He would have failed in the chase, or in any art requiring accuracy of vision, and the god of natural selection would have dispensed with him in the old terrible way; there would have been no pain or insanity. This is because the morbid results of eyestrain depend entirely upon use of the eyes within reading or writing, or hand distance. The more such use the more baneful the consequences. Civilization has multiplied a hundred or a thousand times the amount of such near-range work, and the multiplication still goes rapidly on. In making the eye, evolution never foresaw civilization, and that mechanism, created for accuracy of distant vision, is of all organs the one most glaringly ill-adapted for the near vision our modern life relentlessly demands. There are a few occupations in civilization, slowly being weeded out however, in which our eleven patients could have been happy if—and what an if that is!—if they could each have renounced the intellectual life. Under this proviso they could have been contented and useful citizens, for example, as osteopaths, mental-science healers, policemen, night watchmen, stage drivers, cattle drivers, cowboys, burglars, or even political bosses and senators, but they could not have passed a Civil Service examination or have been of intellectual service to their fellow-men.

"Great Wits and Madness."—Dryden's famous couplet is a poor and untruthful variation of Aristotle's "No excellent soul is exempt from a mixture of madness," and of Seneca's *Nullum magnum ingenium sine mixtura dementiae*. The truth, the little truth, there may be in the sayings, consists principally of three constituent errors: (1) The people who accept such a psychology of genius and insanity are themselves incapable of knowing or understanding in what genius or madness consists, and view both as something alien. They are in no danger of illustrating either *ingenium* or *dementiae*; (2) they may drive the genius into dementia by their stupid unrecognition and even hatred; (3) a genius may go mad because of eyestrain. Mrs. Carlyle, tortured for forty years by excruciating bodily suffering, may, in the crisis of pain, and the mystery of it, gaspingly demand a promise that if she goes mad she shall not be put in a madhouse. De Quincey may prevent pain and insanity by opium; great alienists may assure Parkman he will soon be a maniac, and may class Schopenhauer and Wagner as such; Wagner may live in fear of it, and Nietzsche may be crushed into the horrible actuality of it. It all proves not the silly pathology of the proverb, but the sin and the want of medical science. A simple, or, rather, speaking in optical terms, a compound pair of lenses would have absolutely prevented the entire tragedy in each case.*

Influence of their Diseases upon the Character of their Work.—The life-work of De Quincey, the best classic scholar in Europe at the age of 14, in view of that marvellous beginning, must be pronounced pitifully disappointing. So far as its morbidness and other qualities were directly due to opium, they were also, I am sure, due to eyestrain. So far as he failed to utilize his great intellect the result was directly due to eyestrain. There cannot be any doubt that the pessimism, gloominess, injustice, exaggeration in style and judgement, dictatorial and overbearing harshness, the history in lightning flashes, etc., of Carlyle, are the consequences of the disease which made him write, as he said, with his "nerves in a blaze," "in a red-hot element which

wastes the life out of me." That is to say, a fury of innervation had to be aroused to overcome the eye defect. This intensity was ruinous, and was, of course, followed by an equally morbid depression and exhaustion. A similar method and result was necessary in the cases of Wagner, Nietzsche, and was present in a minor degree in Huxley and others. Surely the frequent over-critical sharpness and acidity of Mrs. Carlyle's letters, and possibly of her conduct, were the cry of her suffering brain.

Darwin's lassitude, his lack of physical energy, the dragging step, and the spurred jadedness showing in face and walk, seems also present in his slowly-formed conclusions, and in a certain irresoluteness of style and matter.

In Huxley a love of polemics and a controversial harshness, etc., may have been due to the exasperation and intensity which his malady produced.

The naturally rugged and English intellect of Browning may have been directed to recondite metaphysical and ethical subtleties, and his expertness as a versifier almost destroyed, by the cause that set him to walking and working in Italy, instead of among Anglo-Saxon scenes and peoples, and to be satisfied with hastily-grasped truths that did not need the artist's reworking and polish. The change to England "had a most depressing effect." His involved and obscure sentences, abrupt breaks, interpolations, etc., are possibly the result of the eyestrain that would not allow finish and out-working. His MSS. show few corrections.

How much more perfect and wonderful might have been the almost perfect and always wonderful art works of Wagner if he had not had a quivering and suffering and exhausted nervous system! Instead of the contentions and unneeded controversialist prose writings, and especially the pessimism which is an almost inevitable result of a tortured and jaded nervous system, instead of frequent crudities and much over-emphasis in his operas, we might have had a hundred times the number of heavenly things he has left us.

Parkman's affliction seems to have had little result upon his literary work except to limit tremendously his productivity. Unless overconscientiousness and prosaic sternness were consequent upon the prison-like narrowness of his necessities, the iron logic of his character defied all the cruelties of fate to change or modify his mind or the quality of its work.

Whittier was a true neurasthenic, without a single clinical symptom of what goes by the etymologically absurd name of neurasthenia. The sad apathy of his mind and body late in life is in sharp contrast with the fire of the earlier antislavery reformer and politician. His poetry reflects the altered necessities of his life.

Herbert Spencer escaped the fate that would have been inevitable with greater use of his eyes, but the limitations and materialism of his magnificent attempt at "syntheticizing philosophy" are too evident to need re-emphasis. The man who could not read German could not synthesize "philosophy" in the nineteenth century. And a man could never have learned German and mastered German thought, who, at the age of 83, could "read without spectacles."

The youth who at 24 was a German professor of philology, who had so splendid an organization, physical and intellectual, as had Nietzsche, who was forced to give up that professorship in ten years because of suffering of eyes, head, and digestive organs, and who at the age of 45 was steadily and fatally driven into insanity by his ingravescent atrocious eye defects coupled with love of knowledge, just at the time presbyopia was beginning its cruel exaggeration of misery—such a man and such a fate is the very limit of the awful and the tragical. If Nordau says it was all due to Schopenhauer or to unmentionable causes, the answer comes quick that pessimism is the almost inevitable outcome of years of the torture, the denutrition, the drained life-power, and the disappointment due to an eyestrain so atrocious as that of Nietzsche.

The Professional Blunder.—For twenty-five years the medical profession has had placed before it the evidences of the pathogenic results of eyestrain to the entire nervous and physiologic economy. The fact was first called to its attention in 1875 in a most reputable periodical and by a most trustworthy physician. There is no evidence in European literature, as far as I know, that any physician of England or of the Continent had ever read this article, or the hundreds that have followed it, or cared a fig for its teaching. The stomach specialist has continued to treat the special organ as if its functional diseases had no relation to the general system. Biliousness, like a wandering and very ancient mariner, transfixes us with his glittering and yellow eye, and lays his

* Three months ago a professional student from a great university came to me with a typical history of intense eyestrain which had forced him twice to renounce his intended career. Utter breakdown was again upon him. The cerebral and psychic symptoms were terrible. Suicide was constantly in his mind. He returned recently to thank me for his glasses and to say he is happy and studying hard, and that he stands scornfully smiling at the locomotive as it approaches him, while he has not the least hint of his old impulse to throw himself before it.

spell even upon the wedding guest of science; dyspepsia is drugged and studied, and headache is drugged and not studied. All the time spectacle-peddlers fill the land, ruined eyes and lives multiply, the patent medicine disgrace rules legislation, bitters grow more alcoholic, tons of headache powders are sold every year, and the carnival of Eddyism and blatant quackery goes more wildly on. And much if not the most of it all is due to neglect of the physiology of the eye and of its reflex neuroses, and carelessness as to the functional diseases which depend upon eyestrain. The deadliest blow that can be given to quackery in and out of the profession, to the patent medicine and Eddyistic humbugs is to prevent the dyspepsias, anemias, neurasthenias, and headaches which are caused by eyestrain, and whereon battens the multitudinous quack incarnadine.

Not the genius alone, but the common workman and workwoman should be in our mind. One is very likely to get a very distorted, or at least one-sided, idea of the rôle of eyestrain in the world if he sees it only from observing its disastrous effects in the case of great literary and scientific minds. The symptoms and the kind of tragedy it brings to the mechanic and the mechanic's wife; to the sewing-woman, clerk, housewife; to the lonely and distant settlers far from cities and oculists; to the millions of school children and college students; to professional men and women of all kinds—these are different calamities, and they present in each case a separate problem. The one fact common to high and low is that it morbidizes character, doubles suffering and personal burdens, lessens all productive capacity, depreciates the national valour, and validity, and wealth, and delays the advance of civilization. This last is its most evil effect, because every act and product of intellect is intermediated by vision.

Value to Nations and to Civilization of its Great Men.—The most valuable products and assets of a nation are confessedly not its material things, not those measurable in financial terms; they are not discussed in legislative halls, or much thought of by kings or presidents. Worth all of these things are the few literary and scientific geniuses that silently emerge in each century. How inestimably valuable were the men whose clinical lives we have hastily studied! And the amount and character of their intellectual product was limited and qualified by their bad health. Of their atrocious sufferings their contemporaries were incurious, and to them indifferent. The pathos and pity of it is appalling, whether we think of it as a personal matter or from the standpoint of the progress of civilization. How narrowly each escaped absolute failure to deliver his message, how fine the line between utter loss and the saving of even the wreckage; and there is added poignancy when one considers that it was precisely the act of doing their intellectual tasks that brought the suffering, that crippled and morbidized the results, and that brought the danger of absolute failure itself.

We must also remember that not these few only were they that were lost or ruined, or morbidized. By the very nature of the cases, in the vast majority of instances, the records are wanting from which to gather knowledge of the losses or hints of the failures. With only a little search eleven startling examples have been found. The evidence that has come to us in these eleven examples is too indefinite and unscientific as to details, although it leaves no doubt as to the fundamental and essential pathogenic factor. Had we but data concerning de Maupassant and his insanity, if we knew the facts about Swift, Chatterton, Keats, and a multitude of budding or blasted geniuses, many of whose names are unknown to us. For, wherever intellect has sought the solution of the mysteries of our life, wherever reason has attempted to lessen the world's load of suffering and ignorance, there may the eyes have been defective, upon which all results depended, all results to the worker and to the aftercoming workers, who we are. And so it comes to this that the geniuses, the instruments and makers of civilization, depend at last on the medical profession. At last and late we are rising to the measure of our opportunity and our duty.

REGISTRATION OF CONSUMPTIVES IN AMERICA.—An ordinance has recently been passed in Kansas City which provides that all persons suffering from consumption in an infectious stage must be registered at the Board of Health, and must follow the instructions as to isolation and treatment made in each case by the city physician. It is believed that the law is aimed primarily at the negroes, among whom consumption is very prevalent, and who in their conduct on the streets and in crowds are said to show no care for the danger to public safety from the germs of the disease.

REPORT ON AN EXTENSIVE EPIDEMIC OF DIARRHOEA APPARENTLY DUE TO THE POLLUTION OF A PUBLIC WATER SUPPLY.

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EPIDEMICS of diarrhoea due to the use of impure water do not appear to be of frequent occurrence. The few with which I am acquainted are referred to in my work on *Water and Water Supplies*, and, of these, some were attributed to the action of suspended mineral matter, and others to the action of bacteria derived from sewage, manure, or decomposing animal or vegetable substances, but none of these outbreaks appear to have been so extensive as the one to which I am about to refer, in which there have been over 1,000 cases and 14 deaths.

The epidemic affected the borough of Chelmsford and the village of Widford, and in order that the nature of the evidence implicating the water may be understood, a brief description of the water supply is necessary.

The town of Chelmsford includes the borough and portions of the parishes of Springfield, Great Baddow, Writtle, and Widford, which are in Chelmsford Rural District. The borough population at the last census was 12,580, and of the town, including the portions of the rural districts above mentioned, about 14,500. The central portion of the town is flat, and lies on the banks of the rivers Cann and Chelmer. During the past summer the recreation ground, near the market and station, and the meadows behind the High Street, have been flooded on two or three occasions. The water supply to the borough and Widford is derived from three different sources. A considerable portion of the town, all that lying to the west of the Shire Hall, is supplied from a spring in Admiral's Park, the remainder is supplied by a mixed water derived from a spring called Burgess well, which is very near the town, and a deep well. The water from the Burgess well is carried by gravitation to a tank at the waterworks, and the deep well water is pumped into the same tank. The mixture is then pumped into a reservoir on high ground just outside the town, and from here it flows by gravitation to supply part of the borough and Widford. The portions of the town situated in the rural district are not supplied with water from the borough mains. Springfield and Great Baddow have a public supply of their own, and the Writtle cottages are supplied by numerous shallow wells. The water mains throughout the borough are continuous, but near the Shire Hall there is a stopcock shutting off the mains to the west of the town, so that all the houses to the west can only be supplied with water from the Admiral's Park Spring, and those to the east can only receive the mixed water from the Burgess well and deep well. The two portions of the town, therefore, have entirely different water supplies, as during the present summer I am informed that the stopcock above mentioned has not once been opened.

The excessive prevalence of diarrhoea in the borough and in Widford came to my knowledge about August 20th, just after my return from my summer holiday, and on the 22nd I commenced a house-to-house visitation in Widford. This was done because I am the acting Medical Officer of Health to the Chelmsford Rural District Council. The results of the investigation showed that the outbreak had a sudden onset about a week before the August Bank Holiday, and July 23rd to 25th appear to have been the dates of the earliest cases. In 54 houses with a population of 250, all deriving water from the Chelmsford mains, cases of diarrhoea, and diarrhoea and sickness, had occurred in 25 houses; and 54 persons, or one-fifth of the entire population, had been attacked. The disease was not the usual autumnal diarrhoea affecting children chiefly, as the majority of the patients attacked were over 5 years of age. The age and sex distribution was as under:

	All Ages.	1 Year.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65.
Males ...	28	4	3	6	7	6	2
Females ...	26	2	5	8	1	10	0

Two deaths have occurred from "diarrhoea and exhaustion," both infants, one on July 29th and the other on August 26th, both after a few days' illness.