

ART. II.—*An Introductory Lecture, delivered before the Medical Class of Jefferson College, Philadelphia, October 13th, 1859.*

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In compliance with a genial and time-honoured custom I bid you welcome, and offer you a cordial salutation. Let me hope that our meetings in this hall throughout the session now commenced, are destined to be productive of all the benefits reasonably anticipated by yourselves, your parents, guardians and relatives. To this end, no effort shall be wanting on my part; on yours, I trust, there will be a persevering diligence and untiring assiduity which cannot fail of their object.

But as, according to the high authority of the first Napoleon, every soldier has his 'moments of fear,' so, doubtless, every student will suffer from periods of dullness, languor and indolence. He must not, however, permit these to grow into intervals of habitual indulgence; he must struggle resolutely against the feelings which will thus occasionally oppress him; and in the phrase of Johnson, "doggedly" continue his labours, no matter how wearisome or distasteful. *Thus,* This custom will soon become a friend and ally, making difficulties comparatively easy, and even converting a toil into a pleasure.

It will be my agreeable duty here to aid you in the study of the natural history of diseases; to inquire with you into their origin and causes; to endeavour at the suggestion and adaptation of methods of prevention, the institutions of hygiene, that thrice blessed function which most elevates and adorns our glorious profession; to teach you all that I have been able to acquire of the divine art of healing; and instruct you how to relieve pain, to arrest disease, to avert death.

These are offices gravely responsible, full of anxiety and care, as well as of dignity and honour, and calculated to task to its utmost capacity the most active and expansive intellect.

Familiar as I am with them, having spent upon them my best youth and my whole mature life, having indeed been engaged in them more than a third of a century, I enter upon them once more with the profoundest sentiment of humble self-distrust, yet with a firm resolution to omit nothing which may render me fitter for my task, or enable you to derive the fullest advantage from its execution.

I propose to offer you this evening a few thoughts on a series of topics with which you are doomed to incur hereafter a sad familiarity—always of high interest therefore and weighty import; which it behoves us to ponder with deep earnestness, and which we must not shrink from considering attentively and habitually. It concerns us greatly to ascertain *how* men die; *why* they perish prematurely in such large proportion; how and why it is that so few comparatively reach the natural term of old age and necessary decay; and how and why it is that there is so much suffering attendant upon our exit—whenever it takes place—from this scene of toil and care, sorrow and anguish.

I have taken for granted (nothing is more certainly true) that death is often premature; and indeed our bills of mortality show everywhere the astonishing ratio of at least one half of our race dying at the very entrance of life, or carried off during the progress of adolescence; just when their active and useful existence was about to begin; when the results of previous nursing and training were on the eve of exhibiting themselves. Nay, death often accompanies or precedes birth. Great numbers die *prematurely* in the fullest sense, at a much later period too—in ripe manhood, in middle age, and in still more advanced years. The term is a relative one, and comprises an indefinite variety of elements, of which the principal and primary is the vital duration of the class or of the individual, by inherent or original constitution. In the vegetable world some of the sweetest flowering shrubs last but a week or two; others are annuals; others exist for a few seasons. The oak withstands the storms of many winters, and the baobab is supposed to have held out for thousands of years. Among the animated tribes,

the ephemeron flutters away its brief hours of light, love and joy, and expires before the darkness of a single night has fallen upon it; while the raven croaks through his ~~one~~ hundred years, and the eagle grows grey in following the flight of the sun for centuries of almost undiminished vigour.

These are ultimate laws of nature. Every thing that lives has its peculiar and specific capacity of resistance and repair, and decline. Death is thus the correlative of life—not merely its contrast, its cessation or abrupt extinction. Nothing is invested with the prerogative of dying, that has not previously enjoyed the privilege of living. Nay—the functions of life themselves involve the very methods and processes of death, and the rate at which these go on, under the laws of being of each species or tribe, will determine the rate of progress towards death, establish the vital duration of the subject, and unless interfered with by violence or accident, afford, if ascertained, the data for calculating the period of natural and necessary limitation.

Unless interfered with—I have said—by violence or accident. But such interference is the rule, and escape from it the rare, the almost unknown exception. Shall we complain that the frail thread is so frequently cut short, darkly and abruptly:—Shall we repine at this liability as a misfortune, or a harsh and gratuitous infliction? The whole brotherhood of poets, and in general, the philosophers too, have agreed to speak of a protracted and gradual decay in old age as the true Euthanasia. This seems to me a great and mischievous error. Such lingering and progressive decay, whenever it presents itself to our observation, impresses us with a sense of intolerable discomfort and impatience. Considered in this light indeed, old age might be truly defined as a terrible malady, or rather a complication of distressing and incurable diseases. These are grouped together and graphically described by Sir Henry Hallford, under the general (comprehensive) title of "Climacteric Disease," from the date at which they commence, and in Day's able work "On the Diseases of Advanced Life"—a gloomy catalogue. Sudden death, coming upon the man of many years, while yet "his

eye is not dim, nor his natural force abated," is as truly premature as that of the infant or adolescent. For old age is not an absolute or fixed condition, but a very uncertain one, dependent upon all the varieties of race or tribe, locality, habits and modes of living. It differs in different families of the same tribe, and in different individuals of the same family. The sight shall fail, the hearing grow dull, the hair fall out or whiten, the limbs totter, and the pulse intermit in one son, while his brother of the same parentage—elder born, perhaps—shall remain hale and robust, and untouched by infirmity or decrepitude. Not to refer for the thousandth time to the trite instances familiar in all your physiological books, we have some new statements on this matter quite noticeable. In his interesting work on La Plata, Commander Page speaks of the Indians of the Chaco, and mentions a cacique of Mbayas, Nabidiqua, a magnificent fellow, six feet two inches high, who at one hundred years, mounted his horse, handled his lance, followed the chase, and went into war among his countrymen. Dobrizhoffer says of the Abipones, inhabiting the neighboring regions—"If a man dies at eighty, he is lamented as if cut off in the flower of his age. Men of one hundred mount fiery horses like boys; and the women are longer-lived than the men."—Page in loco, p. 158. I will cite here from Voltaire's *Micromegas*, as apt to my purpose, a paragraph, ~~so~~ pregnant with wise meaning. "The traveller from the Dog-Star (Sirius) has just arrived in the planet Saturn, and is conversing with the Secretary of the Academy of Sciences of that planet. ~~There, it~~ *There,* it is alleged, they possess not more than six dozen senses—such as our five—to enable them to pass the time, which *Micromegas*, enjoying the use of near one thousand, considered a poor allowance; as we with our limited range of smell, taste, touch, sight and hearing, think the blind and deaf necessarily unhappy in the restricted monotony of their existence. "How long may you Saturnians live," he asks, "with your few senses?" "Ah! but a very short time, indeed," replies the Planetarian with a sigh. "It is the same with us," said the traveller, "we are forever complaining of the shortness

of life. It must be a universal law of nature." "Alas! we live only five hundred great revolutions of the sun," exclaimed the Saturnian; "and you see well that this is to die almost the moment one is born. Our existence is a point; our duration an instant; our globe an atom. Scarcely have we begun to pick up a little knowledge, when death rushes in upon us, before we can have acquired any thing like experience." "If I did not know you to be a philosopher," returned Micromegas, "I should be afraid of distressing you when I tell you that our life is seven hundred times longer than yours. But what is even that? And when we come to the last moment—to have lived a single day, and to have lived a whole eternity amount to the same thing. I have been in countries where they live one thousand times longer than with us, and I have always found them murmuring just as we do ourselves."

A developed life, like an epic poem, has its beginning, its middle and its end; its opening scenes, its advancing conduct, and its foregone conclusion. It may consist like the several forms of the drama of one act, or three, or five; but it must come to a close, and to just such a close as has been prepared by the previous incidents. Up to a certain point all is usually bright and gay, or at least promising. The morning dawns, and the orb ascends to the glowing meridian; then comes decline, loss, deprivation, extinction. All of us are moving forward into the deep darkness of the future, to meet an impending and inevitable catastrophe. Our powers of action and enjoyment having attained their culminating point must fail, gradually or rapidly; every step of such failure involves, even in the most favoured cases, some suffering, negative, or merely comparative at first, but soon becoming positive and absolute. It is well when this failure is at all points consistent, and the universal impairment of capacity dulls the sensitiveness to pain, as well as the susceptibility of pleasure; when the mind is clouded as the body grows feeble, and the dim consciousness of imbecility scarcely oppresses the half-torpid subject of this symmetrical decline. Making allowance for exotic disease, the contagious and pestilential

epidemics, let it be noted, that men die ordinarily by the wear and derangement of the organs of which they make most use. Perhaps, it should be said rather, that men die by enfeebling the capacity of resistance and repair, in certain vital organs by undue employment of, or determination to them. Adams and Webster make perpetual and unrelenting use of their strong brain, which at last yields, fatigued and exhausted; thus die Cuvier and Dupuytren, and Chalmers and Miller, and the long catalogue of annual victims to apoplexy and paralysis, ramollissement and other cerebral affections among men of active intellect. Through what may be spoken of as a sort of contre-coup, on the other hand, some of the class of thinkers die from the decay of organs neglected or disused, thus atrophied and rendered incompetent; the lung never properly expanded by exercise in the free air collects an oppressive pseudoplasm or a stagnant clot--the deposits of a sluggish circulation; the stomach ceases to secrete its uncalled-for juices, and the torpid intestines intermit their peristaltic movements; the emaciated muscles no longer exert the vigorous contractions necessary to propel the vital current, and the whole frame languishes. It is recorded of one of our famous scholars, by his friend and biographer, that he once sat still in the same chair engaged in silent, solitary study for twenty-four long hours. From himself, I know that it was a frequent thing for him thus to retain the same posture for ten or eleven hours. You will not be surprised to hear that he suffered intensely from intestinal torpidity, and died in the prime of life, a most painful death from mechanical obstruction--the result of efforts, which had become necessary and habitual--to excite these neglected organs to occasional activity.

The great problem which, as guardians of human life and health, we are called on to solve, is this: Given or assumed the normal expectation of life, the "vital duration" of a particular subject, how shall he most surely attain and enjoy it most fully; and, next in order, and of almost equal interest, how shall he best and most easily "shuffle off this mortal

coil," when he must yield up his life; how die with least suffering when he must die.

Many causes of disease and death beset our path from the beginning, and hang over us daily and hourly. We set out on our course with hereditary tendencies of infinite variety and inevitable force, nay, often with developed hereditary disease upon us. On the one hand, we have to fear the evils of uncongenial hybridism, and on the other of intermarriage with relatives. There has been some exaggeration, I think, on both these points. The union of cousins has recently been much discussed, and loudly denounced, not only by our profession, but by laymen and legislators. There is reason in the prohibition, doubtless; but let it be fairly stated. If two perfectly healthy persons intermarry, there is nothing on earth to interfere with the perfect health of the product of such marriage. If two persons of ordinary, that is somewhat less than perfect health intermarry, the morbid predispositions of the two constitutions being dissimilar or opposite, or contrasted, there is no improbability in the expectation whether they are relations or not, that the product of such intermarriage may enjoy average health. But if two persons marry whose systems are burdened by morbid proclivities of identical character or similar tendency, it is clear that the children of such unhealthy parentage must labor under an augmented, nay, doubly intensified liability of the same nature. This concurrence may take place whether the parties be, or be not related to each other; yet it is much more likely to present itself when they are of the same tribe or family; and here lies the danger or evil of the marriage of cousins—not in the mere fact of their consanguinity. Lieut. Burton tells us that the Bedouin Arabs, admirable specimens of manly vigour, pure health and most tenacious vitality, *breed in and in* continually, marrying always, or with rare exceptions, in their own tribes; nay, he informs us, that it is the unquestioned *privilege* of every youth to select his first cousin as his wife, and that such selection is a custom almost universally followed. I am informed that a similar privilege and custom are in use among the Osages. Galter—see Ran-

kin, July, 1859, p. 23, informs us that the mean duration of life among the Jews is quite above the average of other known races in Europe—being 46.5 years, while that of Germans is but 26.7, and of Croats 20.2. But the Jews are notoriously stringent in their intermarriages.

Their longevity is similarly extended. The age of 50 is passed, for every 1000 by 319 Jews, to inhabitants of Central Europe,.....297

Prussians,.....280

Croats,.....236

Hungarians,.....224

The age of 70 is passed in every 1000 at Frankfort by 73 Jews to 39 Christians. In tables collected more extensively by Jews,.....123.1

Inhabitants of Central Europe,.....117

Prussians,.....108

Croats,.....71.1

Hungarians,.....54.4

But this is evidently safe only in races of sound and uncontaminated blood; it becomes dangerous in proportion as we meet with the fully developed influences of civilization.

Hence have arisen and thus have extended scrofulosis, tuberculosis, gout and cancer. Hence the extermination of families; the abrupt ending of long genealogical lines. Hence the total extinction of autochthones or the aboriginal inhabitants of almost all countries on the globe, at least where the white varieties inhabit. Almost everywhere we find hybrid races the exclusive or predominant denizens. The Greek is no longer of the blood of Agamemnon or Socrates; the Frenchman is not of the pedigree of old Gaul; the Italian—alas! how fallen—is neither Etruscan, Sabine nor Roman; the ancient Roman himself, once the master of the world, being a most composite hybrid. The Englishman—emphatically an Englishman, is neither Anglian, nor Saxon, nor Norman. Among the most efficient causes of the historical decay of nations is doubtless this steadily increasing morbid proclivity—this augmenting tribal predisposition to special diseases, gradually or rapidly enhanced into active and de-

structive maladies. "For these reasons, belike," says the quaint old author of the *Anatomy of Melancholy*, vol. i. p. 89, "the church and commonwealth, human and divine laws, have conspired, forbidding such marriages as are any whit allied; as Mercatus advises all families to make choice of those that differ most in complexion from them, if they love their own and respect the common good. And sure, I think, it hath been ordered by God's especial providence, that in all ages there should be, as usually there is, once in 600 years, a transmigration of nations to amend and purifie their blood, as we alter seed upon our land."

I have elsewhere suggested and maintained that the future prospects of our own beloved country are brightened by these considerations, which look so menacing to the eyes of some of our European professional and philosophical brethren. We are in a state of marked and continuous hybridism, intensely complicated; a most heterogeneous mixture of all the civilized white races; rejecting or promptly eliminating all the inferior orders. By an inexorable law, (harsh as to the individual, like many other of nature's ordinances, but merciful and beneficent in its application to masses), accidental, partial, or even frequent mixtures of uncongenial tribes, give rise to a stock of feeble tenacity and comparative infertility; of brief vital duration, therefore, quickly dying out and leaving the field for the stronger and more enduring hybrids.

Civilization, a progressive condition, comprising numerous elements, chiefly of improvement, doubtless, must at the same time be admitted to have generated new and given increased intensity to old modes of death, familiar causative agents of disease. Mere domestication has been dwelt on by Williams as shortening the lives and impairing the health of the lower animals, obviously and of necessity. This is true also, of the higher animal man, in the most favorable hygienic circumstances and under the best and most judicious care. At least, such is the sure result of a certain density of population, upon which civilization depends, and

with which it is essentially connected. In the coal mines of Great Britain are employed 230,000 persons. The lives lost among them were :

In 1851.....	984
" 1852.....	986
" 1853.....	957
" 1854.....	1045
" 1855.....	963
" 1856.....	1027
" 1857.....	1119

In seven years a total of.....7080
 young and robust, average 1 in $32\frac{1}{2}$ nearly—3 per cent.
 nearly.

But it is in the ultimate development of our social economy; in the prodigious inequalities of physical existence which it produces everywhere; it is among the civilized poor that we reach the culminating point of human suffering—that we find human life reduced to its shortest average term—that we see death in its most terrible and repulsive forms. Poverty!—let me beseech you for a moment to reflect upon the ample meaning of the word; to analyze the status which it represents; to contemplate the infinite number and diversity of the revolting details which go to constitute it. Among savage tribes, in the extremes of unfriendly climate and locality, we meet with our brother man in want and destitution, and full of misery. We pity the Esquimaux in his ice hut, perishing in filth and starvation. We pity the wanderer of the Sahara, whose parched lips can scarcely utter a last prayer for water as he sinks exhausted on the fiery waste. We pity the emaciated Indian of the Rocky Mountain desert, famishing upon annutritive berries and ferns, and digging the earth for scattered bulbs and roots. But if these demand our pity, what feeling shall we bestow upon the child of wretchedness born in the purlieus of our large and flourishing cities, in the very midst of wealth, and abundance, and luxury! Being poor, the atmosphere he breathes is poisonous; the food he eats is garbage; the water with which he quenches his thirst is saturated with abominations; his clothing is rags; he earns his

foul morsel through vice and humiliation; throughout the whole of his existence of sorrow and discomfort—this living death—he is watched by those who live around him in ease, and comfort, and enjoyment, as dangerous to them, both morally and physically; and if he does not fall into the hands of the executioner, may consider himself fortunate in being permitted to expire in the ward of some hospital. The wigwam of the Indian, the bushy lair of the Maorie, and the mud hut of the Hottentot afford some social comfort, some domestic joy; for man is everywhere gregarious, indulging the universal passion and feeling the parental storge. For such resorts even as these, civilized destitution offers no substitute. Scarcely a shelter—how can we call the haunts in which they congregate by the sacred name of home! “Homes!” exclaims a recent British writer, “filthy, stinking dens, overcrowded, incestuous, vermin-haunted kennels of the poor! Bed and board in the same room; every prohibited degree—including a new one, that of the transient lodger—herding promiscuously together; light and air always wanting; food insufficient; drink, indeed, often in abundance, but always noxious or intoxicating.”

The Latin poet tells us, with the melodious mockery of his tribe, while lamenting the certain termination of his butterfly career, *Pallida mors æquo pulsat pede pauperum tabernas, regumque turres*. Alas! it is not so: not with equal, not with impartial footstep, comes the pale messenger. He tramples with iron heel the faces of the poor; but treads softly, as ~~in~~ velvet slipper, when he enters the carpeted chambers of the rich. Nor pen nor pencil can portray the wretchedness of the pauper's solitary death-bed. Let us visit ~~him~~ *him* ~~with Milton's Adam and the Seraph,~~ seeking him in the refuge which humanity provides for him:—a sad “noisome place,” with which you have been or are to be but too familiar in your visits to the sick poor; “A lazar-house it seemed, wherein were laid—

Numbers of all diseased; all maladies
Of ghastly spasm, or racking torture.

—Death his dart

Shook, but delayed to strike, though oft invoked
With vows, as their chief good, and final hope.

—PAR. LOST, E. ix, p. 362.

Look at the bills of mortality everywhere; ask from what quarters are filled the black tables which tell of the crushing of infant life, and exhibit the annual hecatombs of adolescence. You will be at no loss to distinguish that these hosts of the youthful dead are recruited from St. Giles', not from St. James'—that the Five Points furnish a vastly larger quota than the Fifth Avenue. Compare the chances for them—the reasonable prospect: In one quarter of Boston we are told that the average duration of life is but 13 years; while in the immediate neighborhood it rises as high as 26. In the 15th Ward of the great city of New York, the deaths are but about 1 in 60 per annum; while in the 1st and 6th Wards they amount to 1 in 22—being nearly or quite triple in ratio. Need I tell you in which of these quarters dwell the poor? If you are awestruck by this prodigious difference between the two classes in civil life, what will you say of the wider contrast still which separates the different grades in the camp, the field, the barrack, the military hospital. Let us follow the angel of mercy through the wards—where the wounded soldier impresses the sacred kiss of gratitude upon the shadow of Florence Nightingale as it flits across his pillow. What gloomy scenes surround us!—what infinite agonies are accumulated under our eyes! Pincoffs tells us, p. 189, that in the Crimea “the mortality from *fevers* was for the men in the ranks $19\frac{1}{2}$ per cent., and less than 1 per cent. for the officers; from diseases of stomach and bowels, for the men 19 per cent., and about $\frac{1}{2}$ of 1 per cent. for the officers. The mortality from all diseases summed up was, for the men 35 per cent.; for the officers $2\frac{1}{2}$ per cent.” It is interesting to read that cholera alone—the true democratic leveller, the red republican of pestilence—is no respecter of persons. “It takes but little heed,” says Pincoffs, “of the constitution of the individual *befallen*.”—Its mortality being for all alike about 60 per. cent.

But the death-tables of civilized poverty give the lighter shades of the terrible picture. When we consider the infirmities and suffering which belong to the institution, for it is indeed rather a permanent institution than a condition

transient or liable to change, a deeper melancholy settles over our minds, and we are filled with disgust and dismay. Death, instant and universal, would be a doom preferable to the pollution, infamy, crime, and wasting and incurable disease which cover the whole scene as with a pall of infernal blackness. How do the poor live at all in our great cities? The Hon. Erastus Brooks, addressing the N. Y. Sanitary Association, tells them that "not less than 25,000 of their population dwell in deep, damp cellars, six feet and more under ground, exposed during every rain to deluge from the pitiless storm. Similar statements are made in reference to Liverpool, Glasgow, Manchester, London. Of what civilized city of large size are they not indeed true? In 1841 the cellar population of Liverpool was rated at 40,000. "The atmospheric infections in the crowded portions of a city like this," Mr. Brooks goes on to say, "are legion; and how can it be otherwise, when there are 20 or 30 families in a house? In the 8th Ward, what is called Rotten-row, 250 families and 1250 persons are crowded into a space of about 180 feet by 50—a space little greater, not twice as great, as that occupied by this assembly. In Halliday's Report we read of the same metropolis that, on an average, three families dwell in each house: that about three-quarters of its population are domiciled in the proportion of six families to a house: that that there are 329 houses which contain 20 families and more: that 87 families were found in one house, and 94 families in another: and that there are many single blocks of dwellings containing twice the number of families which reside in the entire Fifth Avenue, a street of palaces, as is well known, some ~~three or four~~ miles long. These revolting records of our neighbor city, in greater or less intensity, shadow forth the condition of the poor everywhere. In such thronged haunts pestilence of every kind is and must be indigenous, endemic and ever prevalent. Typhosis, marasmus with its wasting decay, all deformities, impairments of the senses, deaf-mutism, blindness and idiocy, these are the dreadful heritage of the poor. Every tissue, and fibre, and atom which goes to build up the organism under such cir-

cumstances, from the unwashed surface encrusted with its own foul excretions to the interior chambers of heart and brain, must be of morbid composition and thoroughly inquinated.

Civilization demands another class of victims, scarcely less wretched and almost as numerous. As the wants of refinement and luxury multiply and extend themselves, so, on every hand, do the implements required to satisfy them; and the occupations and modes of labor, and the several substances brought into use, develop, from time to time, new and unmanageable agents of evil. Even our merely mechanical improvements exhibit a direct effect in augmenting the amount of suffering and swelling the tables of mortality. The Briareus steam, strikes with its hundred arms on all sides most deadly blows; explosions, collisions, scaldings and burnings on board ships whose machinery is always capriciously prompt to harm its managers; and the inexorable locomotive, with its lightning impulse of irresistible momentum, giving us almost daily its thrilling accidents, as they are called, of crushing, mangling and mutilation. The workers in all our metals, whether specifically poisonous, as lead and mercury and arsenic, or only mechanically injurious, as *iron*, the most valuable of all, must endure more or less injury, and incur the imminent risk if not the absolute certainty of shortening life. Take an example: "A grinder," says Chambers, "sits on a block of wood which he calls his grinding horse, and his grindstone is before him, turned on an axle by steam or water. To this he applies the article to be ground, and a spray of fire arises at every touch. But the fire is not the worst. The grindstone itself wears away in foam-like surges that fill the lungs and in a certain number of years, calculated by statistics to a nicety, kill the principle of life. A dry grinder does not reach 35; a wet grinder may defy death for ten years more. The men themselves, and they number between 2000 and 3000 in Sheffield alone, insist on their trade retaining its fatal noxiousness; because if this were removed there would be a greater competition of hands, their high wages would come down, and their deep drinking be cut off."

Perhaps in no single point does the savage state differ from the civilized more impressively than in the facility of procuring light and fire. Yet this inestimable benefit is purchased at a high price. Our phosphorus matches, indispensable in every household and found in almost every man's pocket, have introduced in their manufacture a new and terrible mode of suffering, mutilation and death. Our brilliant modern illumination with gas, besides giving constant offence to the delicate sense of smell by its diffusion and universal infiltration, must thus do more or less injury through its irrespirable qualities—not to speak of the occasional accidents of explosion and asphyxia from its freer escape. Camphene and its kindred mixtures swallow up with fire-torture the careless and imprudent; the thoughtless housewife putting off till night, arrangements which, unless at severest risk, must be made by day; the starving needlewoman whose small lamp burns out and requires to be replenished before she can finish the work upon which depends the miserable pittance that sustains her toilsome existence; the weary mother, suddenly half aroused from sleep and anxious to see without delay the face of her sick, wailing and struggling infant.

Too much vague declamation has been uttered on the topic of alcoholic excess to admit of its being dwelt on here and now; and the influence of hygienic teaching has been greatly weakened by the exaggerations indulged in. But there remains an appalling amount of irrefragable truth, which should be kept before the eyes of our youth in statistical tables and sounded in their ears in the plainest words of warning and repression. All Christendom should shudder at hearing that while yet the asylum for habitual inebriates, undertaken to be built by the munificent State of New York, is not half finished, applications have been made for reception by not less than *twenty-eight hundred* of these unfortunates; of which number—it is enough to make one's heart bleed to record it—upwards of four hundred were *women!* Not women of the pariah caste, which society makes and then tramples in the mire; but women in a condi-

tion—either of themselves or through their friends—to bear the expenses of such accommodation. What an unimaginable mass of suffering presses upon our thoughts while we hear this statement. What loss of young life—of manly strength—of feminine beauty and worth—of eager intelligence! What a vast wreck and engulfment of the most precious jewels of existence!

Of the premature mortality of our race, *war* is directly and indirectly a fruitful source; the sufferings to which it gives rise are absolutely above and beyond all estimate. The pathological study of violent injuries is curious and instructive. Men when wounded die of the shock—or of the hurt done to some important organ; immediately when unrestrained hemorrhage occurs, or the nervous tissue is hurt with deadly paralysis; slowly when consuming inflammation supervenes, or atrophy and wasting decay, from impairment of the functions of reparation and supply. The analogies with our general pathology are plain and clear: Men die of disease in precisely similar modes; of the shock, or of prompt or gradually increasing organic injury, of loss of vital fluid, or impediment to vital function. The labors of the army surgeon are more arduous than formerly; wounds are more frequent, more severe, more destructive. Modern arms are more deadly, more certain, far more extensive in their range. The musket did not strike one to a hundred that are now hit by the rifle, and the ball made a wound far less harmful. Shell and shot are now scattered thicker than of old; the Dahlgren and the Armstrong and Lancaster guns and the rifled cannon carry to a distance and with a precision unheard of until recently. Battles are not won now by bloodless manœuvres. “Skill in the use of firearms,” says a recent military writer, “is now the only discipline, and the ability to kill at the greatest distance and with greatest certainty, the only tactics.” Those of you who are to be army surgeons hereafter may do well to suggest to the proper officials the methods proper for diminishing the exposure of the men under your care. It is true that human ingenuity knows no limit, and that it finds its most favorite field in the

invention of means of destruction. It is difficult to imagine what we shall do when the commanders employ the "liquid fire" of Capt. Norton, which is to be discharged by gallons at a time, and will convert all military surgery into the mere management of terrible burns; or when Dr. Lardner's idea is carried into execution of sending among the enemy missiles which shall generate profusely and overwhelm them with fetid and irrespirable gases; or even when Whitworth succeeds in his purpose and confidently expressed hope "to make a rifle that will fire a ball into the barrel of another at a distance of five hundred yards, and indeed to make two guns reciprocally load each other at that range." Meanwhile let us save as many as we can from being hurt. In a formal duel, the second brings his principal upon the ground in black dress, unbroken by a single spot of lighter hue that can attract the eye and fix the aim of his opponent; he allows no object either in front or behind to place him in relief or make his outline clear and marked. The Austrians, who fight bravely, nay obstinately, but are always beaten, wear a light uniform and are easily hit. The French have wisely selected a dress of dark blue and dark brownish red. Those of you who are good shots can readily say which you would prefer to fire at, the distance and light being the same. A scarlet coat was found in our revolutionary war a good target; and Nelson's epaulet gave a fatal mark for the enemy's bullet. In fighting time men should throw off even their buff belts, and go to the field in brownish red clothing, or a greenish gray—for these are the colors which sharpshooters find most difficult to distinguish clearly or to hit. So much for field hygiene or prophylaxis.

The actual sufferings of wounded men are fearful to think of. The Russians have been accused of and denounced for having put to death on the field men hopelessly disabled. If the charge be true, it has its humane aspect; although the proceeding involves an awful responsibility. Nothing in the whole history of blood and carnage affects us with so much horror as the story of the arrival of the French army, on its winter retreat from the flames of Moscow, on the ghastly

plain of Borodino, where, among the unburied bodies of those slain in the battle fought a fortnight previous, they encountered numerous wretches who had survived their disabling wounds and were gradually perishing from cold and famine; some of them, indeed, confessing their resort to cannibalism to relieve the pangs of hunger and evade the agonies of the slow death by starvation.

But it is not by wounds alone—nay! not even chiefly—that armies perish. It has been calculated that a soldier, weight in lead must, on the average be fired at him to kill him. At Sebastopol there were 25,000,000 of cartridges discharged by the French: we have no account of the musketry or rifle shots of the Turks, or Sardinians or British—the latter of whom fired from 150,000 to 200,000 shot and shell. As less than 25,000 Russians were hit, we know that setting aside all other waste the French alone threw away 999 loads for every enemy hurt. We account otherwise for the immense sacrifice of human life in the great game of war. Not to go back to the deadly and disgraceful Walcheren Expedition or other examples familiar in history, we will quote briefly from the recent “Experiences of a Civilian in a Military Hospital” the following astounding facts. “The Turco-Russian Campaign of 1828 and 29 exhibited a loss of 80,000 men. It began in May, 1828, and up to the end of February, 1829, less than a year, the admissions and deaths in the Russian hospitals had been—on the average strength of 150,000—210,000 admissions and 29,798 deaths.”

What shall we say “of the facts told by the British Army Commissioners of the extraordinary mortality” upon which they comment—“men picked and selected” says Wells—*Med. Times and Gaz.* see Rankin, July, 1859, page 20—“by reason of their bodily vigor, dying in numbers far beyond the mortality of any other classes: 70 per 10,000 of the London Fire Brigade die per annum—of the Foot Guards 204 per 10,000. In all England the mortality is 92 per 10,000—of towns, Manchester shows blackest, 124 per 10,000; in the Infantry of the Line 187—in the Household Cavalry 110—in the Dragoon Guards 133.”

The showing for the British army of the Crimea, in 1854, and 1855, is still more appalling. "On the average strength of 28,939 men, there were 56,057 admissions into hospitals and 10,053 deaths. The diseases were plague, cholera, dysentery and other bowel complaints, scurvy, typhus and other fevers, frost-bites, pulmonary disorders, rheumatism.

Of plague the proportion of deaths was from 76 to 85 per ct.; of frost-bite 21 per ct.; of diseases of stomach and bowels 19 per ct.; of wounds but 13 per ct.

From the French army we have no statistics; but Pincoffs mentions that the deaths from typhus fever alone, were for several consecutive weeks of 1856 as many as 70 per day.

On examining tables of mortality authentically derived from sources most widely separate, we shall not fail to be struck with the general resemblance, which amidst certain marked diversities they will present for our consideration. We shall always find phthisis, pulmonary consumption, occupying a very prominent, usually the highest place on the list. The exceptions are generally transient, and depend upon the occasional and temporary presence of some epidemic pestilence; as of cholera in one place, and yellow fever in another.

I fear that notwithstanding the sanguine hopes and utterances of those who believe in the efficacy of our modern methods of treatment of this terribly destructive disease, we shall note no diminution of its established rate of mortality anywhere, whether compared with the entire population or with the other modes of death recorded. Yet I do not say that it is always fatal. Some sustain its ravages through a long life: some live beyond its continuous manifestations, and if they die during an interval of these are set down among the examples of recovery or cure; some grow worse so slowly as to seem to live out their natural term; while its subjects generally sink more or less promptly, declining, as the shadows of twilight steal over the darkening landscape, or falling into the profound gloom of a sudden eclipse, or of an overwhelming tempest.

Not far down on the catalogue will stand the acute non-malignant inflammation of the same organs—pneumonia.

This may surprise us if we have been reading the frequent histories of cases cured or recovering under expectant, or self-styled rational treatment, or under the use of the heroic remedies recently substituted for the habitual resort to the lancet. But we shall not fail on reflection to feel that pulmonitis, in all its forms should be spoken of among the ministers of death with very respectful consideration.

A large place is always to be assigned to the zymotic affections, as they have been somewhat pedantically styled. A portion of this class is specially frequent among children and fatal to young life. The fact that they assail the organism but once—a most mysterious and unexplained feature in their history—affords the only alleviation to the calamity of this peculiar infant liability. They are exotics and come to us from the distant trans-oceanic regions. Some, if not all of them have been derived as we are told from the lower orders of animals; small-pox is supposed to have originated with the camel, and vaccine we have from the cow and perhaps from the horse. Variola, formerly the most hateful among them, is now, thanks to the shade of Jenner, almost entirely disarmed of its terrors. Scarlatina, probably of human and of European origin, at present heads the repulsive list, and appears to be steadily advancing in wide extension of prevalence and in destructive malignancy.

In entering upon the next division of my subject I shall avoid as out of place here any detail of the familiar regulations of hygiene and prophylaxis. It is however always proper to repeat the warning against the habitual tendency to common place exaggeration and exclusiveness, while we must take care not to be led by any reaction into the contracted errors of paradox or startling originality. It is beyond all doubt best and safest to pay a strict attention to cleanliness, personal and municipal—to drainage and sewerage—to ventilation of dwellings and lanes and alleys and streets—to perfect scavengering and removal of all filth and impurity. We hesitate with instinctive reluctance to accept the facts, if they are facts, with the inferences, adduced by McCulloch and McFarlane to show that the foulest parts of Rome and

New Orleans are the portions of those cities freest from the endemic and local epidemics by which they are apt to be ravaged. Yet we admit that they prove something else besides mere filth to be necessary to the production of those maladies. We will endeavour by prudent seclusion to *protect* our clients from contagious diseases, while we shall find ourselves forced to acknowledge the inefficacy of quarantine regulations in general. We will confess that we do not know how far aerial contagion may pass through space with retained virulence, and we shall therefore secure ourselves by a wide margin. We will not depend implicitly upon any sanitary arrangements, knowing that there are certain forms of pestilence which respect the purity neither of the arid sands of the desert, nor of the uncontaminated surface of the ocean fanned by its most salubrious winds; and which would invade a city of mere stone and iron. Not being able to define with exclusive exactness the character and texture of fomites, we shall not venture to take for granted that the hair and beard of a healthy man may not carry and retain the unrecognized matter of contagion, as well as the fumes and odour of tobacco, or that he may not become, while himself in health, a moving focus of transmissible disease, as is alleged to have been the fact in the black assizes of Oxford, Taunton and Exeter.

But having been instructed in the ingenious facilities of smuggling and of personal evasion, we shall be slow to inflict upon any community the certain evils of an imperfect quarantine or cordon sanitaire; unable as we shall be to procure any assured benefit from restrictions so reluctantly submitted to and so doubtfully trusted, that even those to whom their execution is committed, are often found, in their unbelief, among those most prompt to aid in their infraction.

For my own part, I take this occasion to say, that I am so weary of the contest, that I am willing, if not desirous, that the experiment should be fully tried of *free trade in diseases* as well as merchandise—the absolute removal of all restrictions upon their introduction. We shall thus at any rate avoid the evils of concentration of pestilence; and as Christi-

son has observed in one form of contagion, the typhoid, shall perhaps find them all disarmed by mere diffusion; provided meanwhile the most strenuous efforts are made to perfect our hygienic arrangements.

A scientific physician will always speak with cautious reserve as to what is called the *cure* of diseases—the abrupt arrest of their progress, jugulating them or causing them to abort, in technical phrase. He will aim to attain a prudent medium here; neither lightly falling into scepticism on the one hand, nor on the other confiding blindly in favourable statements from the most weighty authorities. So much depends upon time, place and circumstance, undefined and indefinite contingencies; upon the mode of use and the transient adaptations presenting themselves, that we may as well attempt to explain why Corregio was a better painter than West, Phidias a sculptor superior to Powers, or Shakspeare a higher poet than Wordsworth, as to show why Sydenham, and Cullen and Rush succeeded with the lancet, where Bennett denounces it as injurious; or how Chisolm, and Graves, and Warren, obtained beneficial results from mercurials in fevers, in which it is now the fashion to avoid them as useless or worse.

You will hereafter discover that I do not regard these uncertainties and contradictions with a faint heart or a despairing spirit. I am content to learn the truth by slow steps, and to see it often under a veil; not questioning its real existence, and never abandoning the delightful hope of its ultimate outbreking and clear revelation. Meanwhile our efforts must be exerted to render our imperfect knowledge as available as possible for the great purposes of humanity. We must essay to lessen the duration of painful diseases; to palliate or subtract from the intensity of the attendant suffering; and as all men must die, either from curable or incurable disease, either of imperative necessity or from some fatal contingency, or through the gradual decay of age and inevitable infirmity, we must study to strip death of its material terrors, and render tranquil the passage to the grave ordained for all men. I cannot too strongly

urge upon you the contemplation of your duty to your patient in this particular light. You may or may not restore him to health; but you *must* relieve his sufferings; you *must*, whether he live or die under your care, palliate or shorten his agonies. It is not too much to affirm that this is always in your power, and to lay down the rule that it *must* be accomplished.

Pretermittin at present, then, any other discussion of therapeutical applications, I shall go on to speak of them merely in reference to their influence in the relief of human suffering, their effect, whether direct or indirect, ~~as to~~ ~~as to~~ ~~as to~~ as *anæsthetics*. Happily for us, the movements of nature, even under morbid influences, are so consistent, and the pain indicative of disease is in general so closely connected with the internal and obscure conditions which it manifests, that in assuaging and controlling it we shall usually find ourselves more successful in arresting the present malady, and in protecting life, than in any other way. And conversely we may assert that, in the few cases in which we can strike at the proximate cause of disease and abruptly arrest it, the means by which we do this will be found the most available in relieving pain. Nothing can be clearer, for example, than that cinchona and its salts are the best anæsthetics in malarious fevers, because they address themselves at once and correctively to counteract the contingencies that produce all the suffering belonging to the course of those fevers. If we could discover any means of putting a similarly abrupt termination to the morbid actions which constitute tetanus and hydrophobia, and the varied forms of spasm, we should scarcely lose time in palliating the current evils with opium or chloroform. But unhappily our list of direct efficient antidotes—specifics, as we call them—is a very short one. There has been of late much opposition to the use of the lancet in inflammation as inappropriate, irrelevant and of evil tendency. Its effect, however, in relieving the pain and distress of inflammatory diseases is so obvious and unquestionable, that it will always be employed by the judicious practitioner, of course under due restraint and with

every proper consideration of its general influence upon the constitution.

Yet we are not always, it must be clearly stated, to evade the application of painful remedies. Some of these are among our most efficient and useful means of ultimate relief and beneficent influence. They are also very powerful and prompt though indirect anæsthetics. A blister sometimes soothes a patient into a sweet sleep by diverting a local determination previously painful; and I have seen both neuralgic and inflammatory agony so suddenly and perfectly removed by acupuncture that the patient fainted at once from—what he himself termed—absolute and positive pleasure.

A certain amount of suffering seems to be unavoidable in the course and progress of disease, as an almost universal rule, and in the processes which lead to death. The act of dying may, or may not, be a painful one. It is usual to regard it and speak of it as “an agony,” with some very natural exaggeration of language. On the other hand, there are many who maintain with Hoffman that the appearances of suffering are entirely automatic or mechanical, and that it is no more painful to die than to be born—that we are alike and equally unconscious of both. The truth, I think, is plainly this: that death, considered physiologically or pathologically, is a progressive condition, at some point of which insensibility begins, and thence encroaches with more or less rapidity; sometimes being prompt and immediate, at others very slow in its increase, until unconsciousness becomes complete. Diseases differ greatly among themselves in this respect, as do indeed the several cases of the same disease. We cannot establish any definite relation between degrees of pain and actual danger. Two of the most destructive maladies known to us are here strongly contrasted: Tuberculosis goes on to a fatal result, often with little or no relevant pain or distress, such suffering as the patient undergoes being indirect and varying with contingencies that differ greatly. Carcinoma, on the other hand, gives rise to insufferable and almost uniform anguish, beginning early in its progress and continuing with horrid pertinacity to the last

hours. Neuralgia, often compatible with a wearisome tenacity of life, seems, so to speak, to consist of the single exclusive element of pain. Fever is usually a disease of much suffering, of which, however, a large part seems to be merely incidental, admitting of relief or great palliation. We are so familiar with this suffering in ordinary cases, that we make far too little account of it habitually. I well remember the surprise and remorse expressed to me by a southern physician, in large practice, when assailed for the first time by remittent—country fever, as we call it—from exposure at his plantation: “Good God! how little I knew or thought of what my patients have been undergoing for so many years!” Always courteous and humane, he became thenceforth doubly assiduous and anxious to relieve inflictions of which he retained a most vivid recollection. We seldom gather any statements on these points from patients capable of describing in appropriate language the distress they endure. The unmanly moan and groan; the brave are silent; despairing of redress, they make no definite complaint. The traveller Flint, one of our finest American writers, has left incidentally a paragraph that deserves to be quoted. “I am aware that every sufferer in this way is apt to think his own case extraordinary. It is in my view desirable that, in the bitter agony of such diseases, more of the symptoms, sensations and sufferings should be recorded than have been; that others in similar predicaments may know that some before them have had sufferings like theirs and have survived them.”

Epilepsy presents many points of curious interest in this regard, and merits your attentive study. There is nothing in nature more shocking than an attack of convulsion—very plausibly ascribed of old to demoniac possession or the wrath of an angry deity. The violent throes and agitation of the limbs; the rolling of the protruded eyeballs; the distortion of “the human face divine;” the bloody foam upon the livid lips, form a picture full of horror and dismay, far too revolting for the soft pencil of Raphael, yet faithfully portrayed on his immortal canvas. We sympathize deeply with the

apparent sufferings of the wretched victim and eagerly strive to succor him. But we come to know upon inquiry, and we delight in the knowledge, that these manifestations are deceptive; that at the moment when the poor patient is thrown so violently to the ground, he is at once and totally deprived of all self-consciousness, and while torn and convulsed so vehemently is altogether insensible. This most happy anæsthesia continues after the convulsion has subsided into coma, and he sleeps profoundly—waking to absolute forgetfulness or unconsciousness of all that has happened. Yet it is not always thus; some epileptics, more tormented than their fellows, undergo uniform preliminary inflictions, which usher in the dreaded fit. In one of my patients a brief but pungent headache of intolerable intensity preceded always, giving useless but terrible warning of the coming blow. Suicide put an end to this hopeless anguish. Some are admonished by vertigo, some by oppressive nausea, many by the mysterious aura.

Cholera is often painless; often attended with severe suffering of cramp and spasm. Previous to its invasion those exposed are apt to be depressed with fear and anxiety, which frequently disappear at the moment of attack, and are substituted by a cheerfulness or indifference, greatly to be desired, though doubtless unnatural and morbid.

So in fevers, delirium ^{may} come on with pleasant hallucinations, or a state of mind without hallucination in which the subject is highly exhilarated. A distinguished luminary of the Church, who was my patient in attacks of almost every variety of type of fever, enjoyed, if I may say so, this strange elevation of spirits, shouting and hallooing like a boy at play, at every access or exacerbation.

While, therefore, with a reluctant and heavy heart, I find myself forced to admit that there is a certain amount of pain and suffering indissolubly connected with all known maladies and uncontrollable morbid conditions, I will not cease to hope, and will strive even to realize the hope, that all the ills which afflict humanity will ultimately be, as some of them are now, brought under and made subject to the corrective

influence of remedies. Meanwhile, I contend and earnestly argue that a very large proportion of the anguish of the sick bed even now admits of removal or palliation. It imports us, then, to examine carefully into the nature of each individual case, and to inquire whether any relevant means of relief exist, applicable either upon general principles, or specially applicable to the ascertained condition of the subject and the mode of suffering. In this relation we must take care to make due allowance for the peculiar sensitiveness of each subject separately; for men differ as widely on this as on any point of idiosyncratic constitution. Some are acutely alive to all impressions; others are comparatively obtuse; and these latter are often boastful of their assumed powers of endurance, and, in their self-complacency, contemptuous to those who, with infinitely more to bear, show less patience and utter more complaint. As some men get sea-sick in a boat upon a smooth river, while others disregard the motion unless the sea runs tumultuously high, so there can be no doubt that one may actually undergo as much pain from the prick of a needle as another from the stab of a bowie-knife. We may do much kindness by unwearied effort at special modes of palliation. Thus: the tortures of headache being increased by light, sound and heat, we resort to silence, darkness and cold applications; the mechanical impulse, which is the cause of the insufferable throbbing, we control by elevating the arms above the head and compressing the carotids, and by sedatives, diminishing the force of the heart's action. In fevers, the consuming heat which aggravates all the symptoms should be brought down by affusion, immersion or sponging, ablutions, wet cloths, evaporating lotions. I have already alluded to the therapeutical principle upon which we build the reasonable expectation that these consolatory measures shall prove remedial also.

Before I conclude, I would say a few words more concerning the employment more frequently of anæsthetics, properly so called, in the treatment of diseases for the direct and avowed purpose of the relief of pain as connected with

morbid conditions in the sick and dying. The establishment of such a class of remedies is of recent date, and it must be admitted that we have not yet decided upon the propriety of their specific and independent use. For my own part, I am a sworn enemy to pain; and would regard as worthy of high esteem, and worship as a demi-god that man who shall discover or invent any certain and unfailing means of abolishing it in any case whatever, without collateral injury to the sufferer. I would lay down without a word my brief remnant of life to be made the happy instrument of pointing out *one sure* method of putting an end to any, the least dangerous of morbid inflictions; the throbbing tension of paronychia, the torture of toothache, the oppressive distress of asthma, the fiery itching of pruritus, the lancinating stitches of pleurisy, not to speak of cramps, and spasm, and convulsion, of the burning corrosion of cancer, of the horrors of tetanus and hydrophobia. Such martyrdom would be, in my view, as lofty and desirable as any other endured by the world's heroes for the great purposes of patriotism and piety.

We must not hesitate to admit that, with regard to our large and increasing list of direct artificial anæsthetics, we have much to learn. Opium, longest and most familiarly known, has been from the earliest times the favorite resort of the sympathizing and tender-hearted physician. But there are many well-known objections to its promiscuous exhibition, and its real availability is mournfully limited. So, indeed, we must say of every individual of the class; but it is equally clear that as their number and variety are augmented we shall be more likely, upon a careful study of their peculiar influences, to find some one among them which shall be adapted in each particular case to our immediate purpose.

It is infinitely to our shame that we physicians are so slow in following the examples of the surgeon and obstetrician, and that we make so little use of anæsthetics in the melancholy chambers of sickness and death. It surely cannot be for want of variety of resources or ~~want~~ of modes of application. Besides those already mentioned, opium, æther and

chloroform, each endowed with its own specific properties and adapted to special uses, we have the cannabis indica or haschisch, bang or gunga of the East, alcohol, the nitrous oxyd, amylene, the coca, cicuta, lactucarium, aconite, belladonna, hyosciamus, daturum, and numerous others among which to make a selection.

As to modes of employment, besides the internal administration by the mouth and enema, we may resort to friction, inoculation, injection into the cellular tissue or into the veins, inhalation, and voltaic narcotism as it is called by the ingenious discover, Richardson; by which, as by ordinary electricity in the hands of others, and the local application of cold advocated by Arnott, a total suspension of sensibility in a part, and arrest of pain there, may be brought about. Voltaic narcotism has, however, this inestimable advantage, that by the mysterious force employed the particular narcotic principle may be conveyed, when it is needed, to the most interior recesses of the body.

Let it not be forgotten for a moment, however, that all the anæsthetics yet discovered require to be employed therapeutically with great caution and unremitting prudence and supervision. It is not only that the best of them, the most efficient, are always administered at the implied risk of life, however small that risk may be—this is not the point to which I now wish to direct your attention. Chloroform has, indeed, been fatal to a considerable number absolutely of those to whom it has been, under varied circumstances, administered; but the actual *proportion* is, after all, a mere fraction, indefinitely small; in the great majority of these death was already impending, and there was only the substitution of a prompt and painless termination of life for a succession of cruel and protracted tortures. There was probably great gain in the exchange. Observe farther, that several on the catalogue died in the worse than futile attempt to avert a brief and easily endured pang, as in the extraction of a tooth. We must not lose sight of the fact, in whatever way we may attempt to explain or account for it, that really severe suffering renders the use of anæsthetics

innocuous in almost indiscriminate amounts. Thus we account for the exceedingly rare occurrence of accidents to women taking chloroform during the terrible pangs of labour. Opium may be consumed in tetanus to an almost incredible extent. Perhaps there is nothing in pathology more obscure or inscrutable than the marked relation of contrast or counteraction existing between certain morbid conditions and certain drugs. The cautious observance of this relation, as far as it is known, renders the exhibition even of our most heroic medicaments comparatively safe; inattention to it is followed by terrible misfortunes. Fleming died of his own familiar dose of aconite; tobacco has repeatedly extinguished life in the hands of skilful and experienced physicians; even ether is said to have been—though very rarely—fatal; and I have seen tedious and alarming prostration brought on by the inhalation of the usually exhilarating nitrous oxyd gas.

We cannot, perhaps, expect to interfere thus impressively with the vital sensibility of any part, even locally, especially as in voltaic narcotism, without impairing somewhat, more or less, its functional capacities, and according to the importance of its function will be the risk of this interference. And when, as in the administration of anæsthetics by the stomach or by inhalation, we bring the whole organism under this influence, the sensorial system principally, prominently and emphatically, we cannot but disturb seriously, by the production of this artificial coma, the whole current of nervous circulation or diffusion. Especially do we derange the action of the great nervous centres. There is usually, though with rare and happy exceptions, before the deep sleep or stupor comes on, so benignantly substituted for the waking agonies, a perceptible intoxication, with delirium, struggling, exhilarating or depressing hallucinations, dreams pleasant or annoying: and afterwards, on emerging out of the blessed oblivion, we observe nausea and vomiting, prostration, headache, vertigo, impairment of muscular strength, and conscious intellectual imbecility in greater or less degree. I speak of what I know from repeated observation

and personal experience. In one instance I saw the sense of pain annihilated—without any other perceptible effect either upon the mind or body. *O! si sic omnia!*

Now, when we witness the remarkable phenomena which I have thus but partially described, we are impelled to deep and serious reflection upon their nature and mode of causation. What is the ~~actual~~ ^{actual} condition of the subject? We often perceive signs of distress; does he suffer? There are moans, and groans, and starting; does he feel? Does he only forget when he revives and assures us that he knows nothing now, and that he has not known anything of all that has past?

Was there actual insensibility, or was there unrecorded sensation, impressed on a sensitiveness so transient as to retain no trace of an impression? Sir William Hamilton urges ingeniously enough and very plausibly the doctrine that when there is no memory, there is no consciousness; but there still remains in one's mind a lingering and unpleasant doubt.

Yet, after all, the effect of anæsthetics is so clear ^again—the substitution of even a seeming indifference so much to be desired in the place of the struggles and shrieks of agony with which the professional ear^l is too often tortured—the abolition of the power of retention by which we are saved the remembrance of past anguish—all this is so admirable a boon to frail and afflicted humanity, that I can only express my wonder that it has been made of so little avail in the practice of medicine.

I have heard obstetricians maintain that the pangs of maternity were inevitable, and of some inscrutable utility. I have heard surgeons argue that the pain inflicted by the sharp steel was indispensable as a guide in operation. Simpson and Hayward have disproved the former view—and my distinguished friends here present are too well skilled in anatomy and physiology to need, and have utterly discarded, such appalling aid as may be found in the agony of a bewildered and frightened patient.

Why then should we, physicians, persist in the belief of

the unavoidableness, the immedicable character of pain in disease, any more than in amputation and in labour? *Hic patet ingeniis campus!* here lies spread before you, gentlemen, a noble field for experiment and discovery; one that must be fertile in good results if properly explored and cultivated. That something can always be done for the relief of human anguish is certain. We know not yet how much in each instance; we must learn. We must observe attentively; we must note accurately the relevancy of each remedy to each separate case and class of cases; we must watch carefully the collateral effects produced under the anæsthetic. Our efforts will often prove unavailing; we may find them occasionally injurious; all this is subject for earnest and faithful inquiry. Let me urge you to set about it without delay; and may your success be equal to the highest hopes of the most sanguine benevolence.

ART. III.—*Cases of Hernia cured by Wutzer's operation.* Reported by T. L. OGIER, M.D., Charleston, S. C.

Believing that the description of ten or twelve cases of Ingüinal Hernia, cured by Wutzer's operation, would not be uninteresting to your readers, and considering it a duty to make known the result of my experience in this important invention, I take the liberty of trespassing on your pages by a detail of some of the cases operated on during the past Spring and Summer.

Some years since, Gerdy proposed to cure Hernia by plugging the ring and canal with the invaginated scrotum. A portion of the scrotum was pushed up into the ring with the finger, and retained there by sutures passed from within outwards through the parietes of the abdomen at the ring; and these were allowed to remain until union had taken place