attention to this subject, and is, perhaps, one of the most characteristic differences between the blood of the male and of the female. One of the females was slightly plethoric, which caused the globules to mount up nearly to the standard of the healthy male. This condition of plethora, according to Andral, is dependent almost entirely upon an increase in the globules. The difference in this respect between the blood of the female who was slightly plethoric, and the other, who was somewhat anæmic, is very marked; in the former the globules are 484.51 and in the latter 382.95. The blood of the ox was found to be very rich in globules.

In conclusion, I beg leave to state that I have not attempted in this paper to settle the normal constitution of the blood, much less to follow out the variations to which it is subject. This would require a largely extended series of observation. But, considering a proper idea of the condition of existence of the organic ingredients of immense importance to the physiologist and physician, I have endeavoured to study this fluid from a physiological point of view; and, with the ideas I have been led to entertain on this subject, it seemed that a new mode of analysis was indispensable, which would give us the real proportions of these principles. My object has been merely to settle upon some rational and simple process, leaving its extended applications to be made in the future. The process I have described seems to me sufficiently accurate for all practical purposes; and is so easy of application, that I cannot but indulge the hope that many may be led to cultivate this interesting and fruitful field of inquiry.

ART. V.—*Conservative Medicine as Applied to Hygiene.* By AUSTIN FLINT, M. D., Professor of the Principles and Practice of Medicine in the Bellevue Hospital Medical College, and in the Long Island College Hospital.

As the phrase *Conservative Medicine* may be misconstrued, a brief explanation is to be premised. The term Conservatism may be used to express a principle which leads the practitioner, in dealing with diseases, to preserve, develop, and support the vital powers. The unfolding of this principle more and more during the last quarter of a century, has been a result of the progressive increase of the knowledge of the organism in health and disease, together with the accumulating fruits of clinical experience; it is the characteristic of the therapeutics of the present time, as represented by the views of the ablest writers and practitioners, and it is claimed that it should be considered as the governing principle in medical practice. For a fuller exposition, the reader is referred to the previous articles on the subject.¹

¹ Vide Am. Jour. of Med. Sciences, No. for January, 1863.

The subject of conservative medicine in the articles just referred to, has been considered chiefly as regards its therapeutical relations. The purpose of this article is to consider the subject in its relations to *Hygiene*. Here, as heretofore, the largeness of the subject is such that the writer can only aim, within the limits of a single article, to present a few desultory thoughts which may be suggestive, in the minds of his readers, of trains of reflection leading to important practical conclusions.

Hygiene enters alike into the prevention and management of diseases. The name suggests more especially measures concerned in the preservation of health; but, in therapeutics, all measures, not medicinal, may be distinguished as hygienic. I shall use the term with this breadth of application. And it will be a notional division of the subject to direct attention, *first*, to hygiene in health, and, *second*, to hygiene in disease. I will adopt this arrangement.

Conservatism, as applied to hygiene in health.—There is no need to argue for the validity of the principle of conservatism as applied to the preservation of health. Hygiene, in this application, can, of course, have no object which does not assume to be conservative. To weaken the powers of life, or impair the constitutional strength, is never the design of measures to prevent disease. The violations of the principle which fall within this division of the subject proceed either from ignorance, or false notions as regards the effects of means supposed to be conservative. Violations of the principle are less frequent and marked now than formerly; the progress of conservative medicine is shown in its prophylactic, as well as its therapeutical relations; still, examples of not only past, but present non-conservative errors are not wanting.

It is not many years since the notion was prevalent, both within and without the profession, that there is such a condition as an overplus of health. And it was the custom to resort to potent measures to reduce the exuberance of health within safe limits. Bleeding and purgation were employed for this end. There are persons now living who were accustomed, in their young days, to get bled from time to time purely as a sanitary measure. Nothing was more common, a quarter of a century ago, than for healthy persons to apply at the offices of physicians for a venesection, which was performed, as a matter of course, on the judgment of the applicants. Such occurrences are very rare at the present time. Purgation, being practicable without the aid of the doctor, was almost universally employed as a health-preserving duty. Cathartics were regarded as cleansing agents, and not less important for the alimentary canal, than soap for the surface of the body. An occasional internal "sconring" was supposed to be even of greater importance than a thorough external scrubbing, far while the latter was enforced chiefly on the score of cleanliness, the former had the additional recommendation of being thought to be essential to the welfare of the system. There are many now in middle life, with whose

remiunscences of childhoed are associated periodienl doses of sulphur and cremor tartar mixed with molosses, giveo regularly for a series of dnys, before breakfast, or at bedtime, especially ot every recurrence of the vernal seasoo. This was the eleonsiog mixtore for healthy persoons of teoder age. After this period, the so-called cooling porgatives, soch as the Glaober and Epsom snlts, had preference. A persoo with no excess of health was considered to be on the threshold of disease, ood the latter was snpposed to be warded off by the timely employment of the lowering, eleoosing, and cooling measures just referred to. The popolar use of purgatives or prophylactic ogeots, is still snfficiently common.

Gestation is o physiological, not o pthological, stote; ood, siuce it is by no means a modern discovery that all the needful supplies for the developmeot nod growth of the fœtns ore eotoioed io the moternal blood, a common-sense view of the matter, it would seem, should have led to the conclusion heretofore, os now, that pregnant women cannot well offord to lese blood; yet, o few years ago, pregooeey was snpposed, os a matter of course, to call for repented blood-lettings. The physicienn who declined to bleed o healthy persoo desirons of losiog blood simply oo the score of pregnaney, had often o task io tryiog to remove the disappointment which his refusal occasioned. Veesection, under these circumstauces, was deemed an important sanitary measure. How saeh an absurd notion arose, I will not stop folly to explain. Briefly, it was o resolt of theoretical views respecting inflammatioo, views which led to the eoclosioo that the great soorce of danger, as regards the development of disease, was a redondoney of the vital fluid. How different the practical views of the present time, based oo the belief that pnnicity and impoverishment of the blood ore eooditioos often giving rise to, ood standing in the way of recovery from, a variety of diseases!

As another exomple of the violation of eonservatism, may be cited the custom with maoy sargeoons, formerly, to prepare the system for important operations by lowering the powers of life. For this end, o course of porgatives, a system of reduced diet, and sometimes a venesection, were deemed importnot. This custom does not seem to be eotirely exploded ot the present time. Io like moooor, if there were good grounds to expect the speedy occurreoce of any disease, os, after exposnre to contagions fevers, during the period of incubation, a similar plan of impairing health, by way of preparation for the disease, was considered to be o prudentinl measure.

Now it may be loid down as o rule of prophylaxis, thot, other things being equal, disease is less liable to occur in proportion as the health is perfect and the vital powers high io the seole of strength. This rule may oot invnriably hold good. Some of the speeial causes of disease, omoog those styled zymotic, appear sometimes to luxuriato in vigorous organisms; but if there ore exeptions, they do not sobvert the rule. If this be true,

it is a correlative truth that everything which impairs health or depresses the vital powers, favours the occurrence of disease. Observation and common sense warrant the adoption of the latter truth as a maxim of conservative medicine. Akin to the foregoing rule is another, viz., the system is prepared to endure and recover from disease in proportion to the previous completeness of health and the degree of constitutional vigour. Without having the statistical data to demonstrate this rule, and without denying the possibility of exceptions, observation and common sense warrant its adoption as a maxim of conservative medicine. Let us, then, inquire whether among the existing notions or customs having reference to hygiene in health, there be not some which are inconsistent with the foregoing conservative maxims. I do not mean to inquire concerning those palpable violations of the laws of health, which every reflecting person recognizes as such, and which are common enough. My proposed inquiry relates to false views respecting the means of preserving health or warding off disease; in other words, instances in which persons suppose they are doing right when, in fact, they are doing wrong. It will not be difficult to find examples of this kind.

The wear and tear incident to untiring activity in the pursuits of life first suggests itself. In this country the evils springing from false notions and customs, relating to the exercise of the mental and physical faculties, are enormous. A young man enters upon active life, with injunctions to push his industry to the utmost limit of his capacity of endurance; he is incited to constant exertion by the examples of others; he is stimulated by his ambitious aspirations or a conscientious desire not to be wanting in the discharge of his duties; his position and responsibilities, in the existing state of society, may seem to render excessive and unremitting assiduity imperative. He may, or may not, violate the laws of health in other respects. If he be regular in his habits, temperate and moral, he is encouraged on every side by approving friends; he is held up as a model for imitation; he looks upon himself with self-complacency; and yet, he is advancing steadily onward, perhaps, to the accomplishment of the great objects in life before him, but with greater certainty to a condition of impaired health, with the mind weakened or disordered, and a proclivity to any disease to which there may be a predisposition. All physicians, especially those who practise in cities and large towns, well know that there is a class of patients who suffer from the want of health, without having any disease which has a place in the nosology. The morbid state in these cases has been gradually induced, and many suffer without appreciating the fact that their state is morbid, and, therefore, without making application for medical aid. They feel a deficiency of their accustomed energy and buoyancy, their interest in persons and things flags, their appetite fails, they lose strength, and they are depressed, without any apparent reason, or, by causes which, in a condition of health, would disturb the

mind very little. These are the early effects of wear and tear, due to over-tasking, not the physical powers alone, but, conjunctively, the mental faculties. Of the cases of chronic diseases, such as tuberculosis, Bright's disease, diabetes, etc., how large is the proportion in which the previous history shows the existence of wear and tear for a greater or less period prior to the development of the affection? This would be an interesting point for statistical research, but we need not wait for the results of statistics to know that the proportion is large. And, of the cases of acute diseases developed in persons suffering from wear and tear, how much of the fatality is due to the diminished power of resistance incident to the antecedent morbid state! How many would probably escape the development of acute disease were it not for this morbid state!

These considerations, while they are of vast importance, should not militate against a proper degree of attention to the objects in life. They do not show that either physical or mental activity is unfavourable to health. The reverse of this is undoubtedly true. As regards the mind, it is not the intensity of the exercise of the faculties which involves wear and tear. It is the long-continued, unrelaxed efforts, accompanied by unceasing anxiety and strain, which tell upon the system. The physician, oppressed by the weight of his professional cares, is well aware that it is not the demand for the operations of the intellect which bears heavily upon him, so much as the pressure of the sense of responsibility inseparable from his duties. It is not the frequency or force with which the bow is bent, but the constant tension, which destroys its elasticity and renders it worthless. Unremitted exercise of the mental and physical powers, although they are not overtaxed, cannot be indefinitely borne; sooner or later the system will break down. Here is a truth difficult to appreciate in its personal application; but every one recognizes it in its application to the physical endurance of inferior animals. A horse, never overworked, and in all respects well cared for, after a time must be turned out to grass. The prudent owner sees this clearly enough, and acts accordingly, while he fails to see that what is true of his horse is not less true of himself. Many persons pursue a course with respect to themselves which they could not pursue, without remorse, toward a beast of burden. It appears to be a part of the egotism inherent in some persons to think that they are so constituted as to bear an unlimited duration of steady work. Next to this is the folly of supposing that the powers of the system, when they give way, may be restored by medication. And when, at length, they find that they are not exempt from the laws pertaining to all animal, as well as human bodies, they perhaps discover, too late, that the influence of habit has rendered continuance of labour essential to happiness. Fortunate are they who, without sacrificing ought that belongs to a proper degree of assiduity in pursuing the objects of life, have taken care to preserve the capacity for healthful recreation!

It is a curious notion, which physicians sometimes inadvertently sanction, that mental and physical exertions are compensatory as regards each other. The man who is overworking the brain, seeks to make amends by fatiguing the muscles. It has occurred to me repeatedly to meet with persons who were devoting too large a number of hours daily to labour of the mind, and who imagined that this may be done with impunity provided a certain amount of muscular exercise be added. A lawyer, for example, who habitually devoted ten or twelve hours a day to intense intellectual occupation, became sensible that he was taxing unduly his mental powers, and, in order to fortify his health, moved out of town, and managed to ride on horseback from ten to twenty miles each day. Under the combined effects of the exercise of mind and body, as might be expected, he was losing ground rapidly. It is clear that exhausting mental labours will be longest borne in proportion as the time not thus occupied is devoted to physical, as well as mental, repose; and, on the other hand, that too much physical labour will be less hurtful in proportion as it is not conjoined with activity of mind.

Violations of conservatism, hardly less flagrant, in the hygiene of health, relate to diet. Both the profession and public have been sufficiently alive to the subject of gluttony. The evils of over-feeding, as regards the production of disease, have undoubtedly been exaggerated. The injurious effects of gormondizing habits are mental and moral, rather than physical. So far as health and prophylaxis are concerned, false notions in an opposite direction have been productive of more harm. A quarter of a century ago, dietetic abstemiousness was considered to be the alpha and omega of hygiene. The world was eating too much; hence, the ills that flesh is heir to. So believed, not only physicians, but the non-medical health philosophers. The great conditions of health were supposed by many to be the minimum quantity of food with which life could be supported, as little variety in the articles of diet as possible, coarseness in quality, and rejection of most of the accessory aliments. Some advised, as a security against errors of quantity, to regulate each meal by weight.

Vegetarianism had not a few apostles and disciples. We have heard a transcendental reformer contend that in assimilating meat the natural characteristics of the animals were necessarily appropriated; that is, pork communicated to man the attributes of swine, and so of beef, mutton, veal, etc. All the refinements of the art of cooking were deprecated as tempting to over-indulgence.

The sense of taste was deemed a fallacious guide in the selection of articles of diet, and the appetite was so unsafe as a criterion of sufficiency, that the injunction was always to rise from the table hungry.

It was considered a wise course to watch carefully the progress of digestion, so as to ascertain after every meal whether any imprudence had been committed. The subject of dietetics was discussed, not only in medi-

cal writings and in intercourse with physicians, but it entered largely into popular literature; it not only pervaded table-talk, but ranked next to the weather in common conversation; public lecturers made no small account of it, and it was not overlooked in the pulpit. In short, the zeal in behalf of abstemiousness in diet amounted to fanaticism. And dyspepsia was the most common of all ailments among the intelligent and cultivated classes, while it was rare among those who, without thinking of dietetics or digestion, satisfied the appetite with the food placed before them. There is reason to believe that the fanatical notions just referred to, not only contributed to the prevalence of dyspeptic disorders, but favoured, in no small degree, the development of other and graver affections, by impairing health and lowering the vital powers.

These notions are by no means yet obsolete either within or without the profession. There are many now who fancy they promote the welfare of body and mind by habits of diet which are incompatible with the highest degree of mental and physical vigour. There are physicians who sanction such violations of the hygienics of health. It is still considered by not a few to be gross and unrefined to eat heartily. Especially with the other sex, it is deemed a lady-like accomplishment to have a delicate appetite, and abstain from the more substantial articles of food. There are fashionable boarding-schools where, as a part of the educational discipline, girls are placed under dietetic restrictions which, in a measure, explain the imperfect development, the anæmia and feebleness of constitution of those who are preparing to become wives and mothers. It is not yet sufficiently appreciated by all, that the *mens sana in corpore sano* is best secured by nutritious supplies abundant and varied; that the healthiest, ablest, and best men and women have been good feeders; that an excess of ingesta over the absolute wants of the economy is not necessarily an evil, there being provisions made for the disposition of an overplus, but none against a deficiency of aliment; that generous living, constituting an important part of the management of certain diseases, *e. g.*, pulmonary tuberculosis, must be also important in preventing their development; that hunger, appetite, and taste were designed to govern dietetics, and are adequate to their office; and that personal experience derived from watching the progress of digestion, is extremely fallacious. There is still, therefore, scope for the progress of conservatism in this direction, in order to meet the requirements of existing knowledge and of common sense.

With these few remarks on conservatism as applied to hygiene in health, I pass to the second division of the subject.

Conservatism as applied to hygiene in disease.—The importance of the hygienic management of diseases has not been, and is not, adequately estimated, for two reasons: *First*, because hygiene in its relations to health has been imperfectly understood and is not sufficiently appreciated; and, *Second*, too great reliance has been placed on medicinal measures of treat-

ment. It is only within late years that the profession has begun to be awake to the vast importance of the study of the laws of health. Sanitary science is yet in its infancy, and claims far more interest and attention than it now receives. The main dependence, hitherto, in the management of diseases, has been on the curative influence of remedies. That many diseases, under favourable hygienic circumstances, intrinsically tend to recovery, is a fact but recently known and still too little considered. The mind of the physician is too often engrossed with the inquiry, "What drugs shall I give to effect a cure?" and, hence, he frequently loses sight of another inquiry, often of far greater consequence, viz., "What hygienic regulations will contribute to the recovery of the patient?"

This division of my subject has diverse relations. In one aspect it relates to the various hygienic circumstances embraced under the heads of diet and regimen; the latter comprehending influences affecting not only the physical but the mental and moral being. In another point of view, it relates to different diseases, the different stages of disease, and the numerous circumstances which are incidental to disease. I cannot undertake to treat of this more than the former division of the subject with any approach to completeness, or in a systematic manner. I shall only offer a few desultory thoughts, and I will consider first the topic which was last considered in the former division, viz., *diet*.

A striking improvement in the practice of medicine, of late years, relates to diet. Physicians have learned to appreciate, more than formerly, the value of supporting treatment in fevers and other acute diseases, and to regard alimentation as an essential part of this treatment. They have also learned that it is a great object in various disorders and chronic affections to build up the powers of the system, and that this is to be done by conjoining with other measures nutritious food. Has improvement in this direction reached its limit? Is the extent to which alimentation should enter into the management of diseases, fully appreciated? Let us see if there be not ground for answering these questions in the negative.

Limiting attention to acute diseases, it is now generally understood that they do not stand in the way of dying from starvation. Graves uttered a literal fact when he said that patients with continued fever, treated without nourishment, may be starved to death. And this fact is equally applicable to other acute diseases. That a fatal result may take place, and not infrequently has taken place, not from an existing acute disease *per se*, but from inanition, will not be denied. Now it is only an extension of this fact to say that more or less of the morbid phenomena pertaining to the progress of acute diseases are due to a suspension or impairment of the processes involved in nutrition. If patients affected with acute diseases may die from inanition, the latter must play an important part in the production of the phenomena manifested in connection with the diseases; and this must be true of cases which end in recovery as

well as of those which terminate fatally. Deficiency of assimilation originates the symptomatic phenomena, in acute diseases, to a greater or less extent, and here is a source of danger in a greater or less degree. In other words, the symptoms which represent the condition of a patient affected with an acute disease, spring, in part, directly from the disease, and partly from the want of appropriation of fresh supplies for nutrition. In nutrition, in a pathogenetic point of view, has not been sufficiently considered. There is reason to believe that it forms a constant, and often a very important element of all acute diseases; and the practical bearing of this fact is of great importance.

It is fair to assume that the effects produced in a healthy person by withholding food, may also result from the want of nourishment in disease. If starvation be not less fatal in the latter case than in the former, the morbid phenomena, it may be reasonably supposed, are essentially the same in both cases. In order, therefore, to judge of the extent to which the symptoms of disease are attributable to innutrition, the clinical study of starvation in health is important. Experimental observations in inferior animals are not altogether satisfactory in consequence of the difficulty of appreciating certain symptoms. Nor are the instances of human beings starved from necessity, as in shipwreck, suited to the purpose, because the effects of the want of food are mixed with the moral influences incident to their situation, and, moreover, in such instances, generally, there is a deprivation of water as well as food. Experiments voluntarily made are to be preferred; and of these the best to which I am able to refer are those made by Hammond, to establish the relative nutritive value of albumen, starch, and gum.¹ Subjecting himself to the trial of restricting his diet to these alimentary principles singly, Hammond found that they were incapable of supplying the wants of the system, and that the two latter were absolutely inanitionous. During each experiment certain phenomena were produced. Now, these phenomena, for the most part, certainly were not produced by the alimentary principle taken, but resulted from the absence of other alimentary principles, or in other words, from inanition. These experiments, therefore, may be taken as illustrative of the morbid effects of starvation, effects occurring in disease as well as in health. In this point of view they are not only interesting, but of great value. Referring the reader to the essay for fuller details, I will simply mention the symptoms entering into the concise descriptions by the experimenter.

1. Under a diet consisting of pure albumen for ten days: Febrile movements, heat and dryness of skin, headache, loss of appetite, nausea, abdominal pains, progressively increasing debility, serous diarrhoea, want of sleep.

¹ Vide *Physiological Memoirs*, by Wm. A. Hammond, M. D., Surgeon-General U. S. Army, etc., 1833.

2. Under a diet of pure starch for ten days: Debility, disturbed sleep, sense of oppression of chest, palpitation, headache, slight scratches of the skin showing tendency to inflammation and suppuration, febrile movement, abdominal pains.

3. Under a diet of gum, which he was able to continue only for four days: Abdominal pains, disturbed sleep, headache, febrile movement, diarrhoea.¹

Can it be doubted that these symptoms occur under similar conditions as regards diet, in the course of disease? And, if so, how often are these symptoms, presenting themselves in the course of disease, referable, measurably or entirely, to innutrition? I cannot dwell upon these inquiries. I must leave them, reiterating the belief that, while under erroneous views, physicians have been accustomed to regard the ingestion of nutritious food during the course of acute diseases as fraught with evil results, more or less of the morbid phenomena supposed to belong directly and exclusively to the existing disease, proceed from defective assimilation.

The practical conclusion based on the statement just made is obvious. It is an object in the management of acute diseases not to withhold nutriment, but to promote the assimilation of nutritious supplies. In many diseases this is the great object in the management, taking precedence of any known curative remedies. The object always exists, but the extent to which it can be accomplished varies according to the nature and seat of the disease, together with a host of incidental circumstances. The object is the basis of a principle which may be laid down as applicable to the treatment of all acute diseases, viz., alimentation is important to the fullest practicable extent. It is always desirable for a patient affected with any acute disease to take as much food, embracing a proper variety of alimentary principles, as will be appropriated. Inconvenience and evil results may doubtless follow the ingestion of aliment beyond the powers of digestion and assimilation; but the risk of injury from this source, with the exercise of a fair amount of prudence, is less than the liability of harm if, from an excess of caution, the patient suffer from starvation. The minds of physicians have been too exclusively directed to the harm which may possibly be done by overfeeding in acute diseases, and they have overlooked the greater harm of failing to furnish supplies which may be digested and assimilated notwithstanding the existence of disease.

A wide field is opened up by the practical application of this principle. It involves the encouragement of a desire for food instead of the dis-

¹ For a full account of the effects of starvation on the different organs and functions, and for references to the literature of this subject, the reader is referred to the *Cours de Physiologie*, par P. Bérard, tome premier, pages 517 et seq. The following quotation, by this author, from Chossat, embraces a fact which has been to a great extent overlooked: "*L'inanition est une cause de mort qui marche de front et en silence avec toute maladie dans laquelle l'alimentation n'est pas à l'état normal.*"

conragement cased by needless npprehensinns. The desire for food may often be developed by jndicions contrivnnces; the nppetite may be fostered, on the one hand, or, on the other hand, destroyed by cirenmcstances enncnected with the selection, preparatinn, and nministration of artieles of diet. Giving medicines tnn frequently, and the use of nnnseous or nnn-seating remedies, may dn harm by comprnmising the desire for food and appetite, which their remedial effects will nnt compensate for. The mental condition may enndict with a dispositinn to take food, when, if taken, it will be digested and assimilated; this is true of the continued fevers, and other diseases occompanied by a typhoid stote. In such cases food is to be given without regard to the desire or nppetite; the condition of the digestive organs, and the results of experience from day to day, are of coorse to be considered. These are some of the numerous cirenmcstances affecting nlimentation as a mensure of mnngement in nente diseases. I must content myself with this allusin to them. But in passing from this topic, a word or two with regard to the diet of hospitals. This is generally determined by the supposed wants of the system, without much reference to the ehnce or wishes of the patient. How much good might be done by selecting, preparing, and serving food to hospital patients with a view, not olone to the requisite amount and vnriety of ontritive material, but to develop, enennrage, and satisfy desire and oppetite! I have often thought if I had unlimited control of the culinry department of a hospital, I would willingly submit to a prnportinnate curtailment of the artieles pertaining to the dispensary.

I cannot find spnce even to touch upon the vnrious practical points pertaining to the kinds of food suited to the diverse cirenmcstaues incident to different diseases; and I will only add, lest some of my readers may imagine what I have written on the dietetic mnngement of nente diseases to be purely spcclnitive, that the views oow presented ore based not only oo reasoning believed to be sound, but oo coosiderable experience. This experience would have been larger were it not that traditinnnl ideas fixed in the public mind, as well as still prevoiling in the profession, render it difficult often to carry out an efficient plan of olimentation in private practice; and in hospitals this part of the treatment is limited by cirenmcstances which the physiann cannot control. Prejudices, prnfessinnl and popular, against air and water in the mnngement of acnte diseases, prevniled until within a recent period, and ore by no means nnn obsolete. The antipathy to feeding patients will in time appear as absurd as to deny drink and disregard ventilation.

The foregoing remarks have had refereoe to diet in ocute diseases. The importance of nuple nlimentation in ehronic affections is better appreciated, but there is room here for further improvement. I shall content myself here with a maxim of ennservative medicine, quoted from my first essay on this subject: "Under all cirenmcstances, a ehronic affectinn is less likely to

be prolonged, serious lesions of structure are less likely to take place, and a fatal termination is postponed in proportion as the vital powers are preserved." I need not stop to argue that the vital powers are to be preserved by a nutritious diet combined with other hygienic measures.

I have just now alluded to *air* as an element of hygiene in disease. Of the various hygienic conditions, perhaps, to none has attention been more directed, of late years, than a sufficiency of breathing space and adequate ventilation. There is room, however, for the inquiry whether improvement here has reached its limit. Granting the largest estimate of cubic feet, and the best contrivances for the renewal of the air of the ward or sick-room, there is reason to think that additional influences pertaining to the atmosphere may be brought to bear with advantage on the management of diseases. During the present civil war in this country it has been repeatedly observed that the wounded have done better in the open air, exposed to deprivations and vicissitudes of weather, than after having been received into houses or hospitals, containing every provision for comfort. Surgeons have found that the most effectual mode of arresting hospital gangrene is to transfer patients at once to tents, and the rapidity of improvement in the latter situation is remarkable. Now, the question arises, may not outdoor exposure, or what is equivalent thereto, be useful in many acute diseases? Its usefulness in chronic affections is acknowledged. This question is worthy of consideration with a view to experimental observation. It would not be surprising if patients affected with fevers and acute inflammations were found to improve in a notable degree under the freest possible exposure to air. As to the choice between such exposure and insufficiency of space and ventilation, there is, of course, no question. There are facts enough bearing on this point. But the question is whether such exposure may not be advantageously added to the observance of the usual sanitary requirements respecting air. Free and daily exposure is important as a means of preserving the vigor of the body in health; may it not be equally important as a means of keeping up the vital powers in disease? Every one accustomed to spend much time in hospital wards, must be aware of the sense of debility felt after remaining there for even two or three hours. How different the feeling after having been in the open air for the same period! How would the strength and energy of mind and body flag, if an active, healthy man were confined for successive days and weeks to an apartment, with the air sufficiently renewed to preserve its purity, but kept steadily at a uniform warm temperature! How refreshing would be cool breezes and alternations of heat and cold after such a confinement! Do not these facts apply to the body and mind in disease as well as in health? As a general rule, the hygienic circumstances required by conservatism in health, are not less important in disease; and it is at least highly probable that, as respects the depressing effects of confinement in heated rooms on

the one hand, and the invigorating effects of free exposure to air on the other hand, sanitary laws are applicable alike to disease and health.

As bearing indirectly on this topic, I may refer to instances of persons passing safely through fevers and acute inflammations, in situations in which they are necessarily exposed to atmospheric vicissitudes. For example, I have reported a case of pneumonia affecting one entire lung, the patient living entirely alone in a shanty, in the winter season, in Louisiana; the shanty in a swamp, the floor of earth covered with water; his subsistence consisting of bread and water with a bottle of whiskey, and the evacuations passed in bed. The patient was discovered and removed from this situation to the Charity Hospital of New Orleans already convalescing, and he rapidly recovered. I have known a patient affected with pneumonia escape from the ward in a state of delirium during the night in the winter season, wearing only a cotton shirt, and walk a distance of two miles to a house where he had formerly lived. He was brought back to the hospital the next day, free from delirium, and he convalesced rapidly, having received no detriment from this great amount of exposure and exertion. Examples analogous to these occasionally fall under the observation of all practitioners. They show, at least, that prevailing apprehensions of danger from exposure to atmospheric influences, during the progress of acute diseases, are much exaggerated. This remark will apply to early gestation in convalescence from acute diseases. It was formerly supposed that most acute diseases left behind them a liability to relapse, or a condition favourable for the development of other affections; and, therefore, that great care must be taken to avoid all exertion, and especially the morbid agency imputed to cold. A better knowledge of the natural history of diseases has taught us that, as a rule, there is little or no tendency to relapse, and that the sequels of certain diseases proceed from intrinsic tendencies. Of the hygienic circumstances favouring rapid and complete restoration to health, getting up as soon as the strength will permit, and gentle exercise in the open air, are among the most efficient. I could cite illustrations of this fact in abundance. As I am writing, a striking instance comes to my mind of a fellow-practitioner who had kept the bed for a long time with chronic pleurisy, accompanied with great debility and emaciation, and, finally, bed-sores were added to his sufferings. At this juncture he was taken out of bed, placed in a carriage, and driven a short distance. The effect on body and mind was such that the experiment was repeated. He continued to ride out daily, and rapidly recovered. This was many years ago; he is now in good health and in active practice. This is a striking instance among many exemplifying the hygienic importance of air and exercise in determining convalescence and promoting recovery.

Are the requirements of conservatism fully met by a due appreciation of all that pertains to mental hygiene in disease? This question will lead to

o few remarks which will conelude my brief consideration of conserntism os applied to hygieae io diseoe. Physicians are oot oamindful of the reciprocal infloueees of mind ood body. It would be trite to assert their existenee ond importance. They are pent to every medical observer. But it is perhaps true that mental conditions are more largely concerned in either favouing or antagonizing diseoe thao is generally supposed; ond, hence, that the therapeutie valae of hygieae influences oeting primarily on the mind, are oot suffieiotly appreciated.

It is obvions that the capaeity of resisting ond recovering from diseoe varies in different persoo. The same diseoe, having apparently the same ioteosity, will destroy some ond not others. And there is a wide difference as regards the duration of life with o similr amount of inearable lesions. Take, for example, pulmonary tubereulosis, how great the diversity in the extent of destruction of the lungs in cases in which this diseoe olone has produced deoth! Now this intrinsic power of overcoming diseoe, ond of living on with irremediable offeetions which will sooner or later prove fatal, is not oltogether vital but in part oiental. If the faeulties of tha mind be not impaired or obseared by diseoe, tha potient is rarely indifferant to its progress or the result; it is aecompanied by more or less emotioal activity. Much, oftea very mach, depends oo the eharaeter of the predominant emotions. Hope, confidence in the physieian ond the means of eure, reliance on the wisdom of Divine Providence, are sentiments which sostain the vital powers ood ara cooservative. On the other hand, discouragement, apprehensions, dissatisfaction, impotenee, depress the vital powers ond are non-conserotive. Tha choraeter of the predomiunt emotions will, of course, depeod in a great measare on mental constitution, education, habits of thought and feeling, etc., with reference to which there is othing like uniformity in different persoo; but judieious maangement on the part of the physieian may determine their eharaeter to o greater or less extent. Tho ability to seure complete confidence, to exert oo influence over the minds of patients, enhances, in oo small degree, the skill of the physieian. As belonging legitimately to tha praetice of medieiae, this is not enough eoosidered. But the skillful exercise of a moral power requires oourney of diagnosis ond knowledge of the laws of diseoe. If the physieiao be nat able to jadga correctly of the situation of a patient, ha cannot give the ossoranees which the nature of the case may warrant; prudenee, as regards his own reputatioo, dietates great reserve, and he depresses his patient by non-committalism. In o dispensary praetice limited to offeetions of the chest, I have been forcibly impressed with the good which may be done in many cases by simply declaring *ex cathedra* the obsenee of consumption or an affeetion of the heart. Poor patients, after having perhaps suffered long from seeret apprehension of serioos diseoe, come trembly, at length, os if to hear their doom pronoeed. Thanks to tha invaluable methods of physical diagnosis, the healthy state of the thoracic orgaos may

be positively ascertained. How delightful to witness the transition from despondency to joy, when soundness of the suspected organs is announced and believed! The moral effect is often of more efficacy than any medicinal remedy. It would be easy to cite numerous instances of mental suffering with physical disorder persisting many years, for the lack of an authoritative assurance of the non-existence of a fatal malady.

It does not enter into my plan to discuss the various means by which mental influences may be brought to bear on the management of diseases. I wish only to bring forward the fact that here is an important province of conservative medicine. A topic suggests itself in this connection which I will not pass by, because it relates to a matter concerning which the opinions and conduct of medical men differ: I refer to the co-operation of the clergy in cases of disease. Some physicians take the position that during the progress of diseases involving danger to life, the ministrations of religion are liable to interfere with recovery by producing excitement and discouragement. I desire to bear testimony against this position. Divesting the topic of all considerations save those which relate to the influence upon the progress of the disease, experience has led me to have no fear of harm from the timely and judicious offices of clergymen and religious friends. On the contrary, the effect is often manifestly salutary.

If the mental functions remain intact, every patient must think of the probability or possibility of an existing disease ending fatally. There can be no stronger evidence of an imbruted mind than the absence of all thought of danger. And the doubt, uncertainty, and anxiety engendered by the patient's reflections occasion a more depressing effect than even a definite expectation of a fatal result. Every physician knows how common it is to be entreated by the patient to make known to him his actual condition, to tell him the worst, a painful state of suspense with respect to death, as well as any event involving a deep personal interest, being more difficult to bear than its anticipation. For this reason, although a certain amount of reserve may be allowable, the physician should, as a rule, meet the demands of the patient for explicit information with candour, and he should never violate the truth. The most favourable condition of mind, in a hygienic point of view, is that induced by confidence and hopefulness in union with a cheerful resignation to the will of God. In so far as the services of the minister of religion conduce to the latter, he becomes the coadjutor of the physician. Irrespective of life and health, this topic has relations to momentous interests which would be here out of place, even if the writer were presumptuous enough to consider them. I wish simply to record the opinion, as a physician having had considerable opportunity for observation, that so far from there being any ground for antagonism, the minister of religion may effectively co-operate with the medical practitioner in behalf of the physical welfare of the sick.

Attention to mental hygiene in hospitals often falls short of the require-

ments of conservatism. The violations of conservatism, in this regard, consist, in the first place, of circumstances which lead to depress the vital powers by their influence on the mind, and, in the second place, in the absence of circumstances influencing the mind in an opposite direction. Obvious sources of a depressing influence are apt to be overlooked. One of these is the necessity of witnessing the distressing manifestations of disease in other cases in the same ward. Cases which, from their character, shock or painfully excite the feelings, should, as far as possible, be isolated. To be confined in the same apartment, or, perhaps, to lie side by side with patients in a state of active delirium, or affected with convulsions, or in stertorous coma, or suffering extreme pain, is to be exposed to a depressing influence which one can best appreciate by imagining himself in such a situation. It is melancholy to think that a brutish insensibility is often the only resource against this influence. It is cruel to compel hospital patients to witness the phenomena of the dying act. How often have I seen the most marked evidence of the unfavourable effect of a prolonged agony in a hospital ward! If it be true that the patients may become habituated to these scenes, so as to regard them with indifference, is this a result to be desired! The propriety of assigning wards to tuberculous cases, or to incurable diseases, is more than doubtful as a measure of mental hygiene. What can be more discouraging to a tuberculous patient than to be surrounded with cases presenting all the different phases and gradations of consumption? For this reason consumptive hospitals are objectionable.

The circumstances just referred to may not be under the control of physicians connected with hospitals; but there are circumstances for which medical officers and visitors are exclusively responsible. It is very rarely the case that hospital patients are treated cruelly, roughly, or neglectfully; but the fact of their having the same faculties of thought and the same sensibilities as private patients, is not always sufficiently borne in mind. If this fact were not sometimes forgotten, the nature of the disease, the prognosis, and the appearances which may be expected to be found after death, would never be discussed without reserve at the bedside of a patient; the chances of recovery or death in the cases under observation, the incidents of the dead house, and other topics of a like character, would not enter into conversations held in the wards. It is not just to say that such breaches of conservatism are by no means common, and that when they do occur they proceed generally from the thoughtlessness incident to youth and preoccupation.

There is room for improvement as regards mental hygiene in hospitals, not only by obviating circumstances which exert a depressing influence, but by trying to call into exercise thoughts and feelings which have a salutary effect in disease. It is a great charity to institute for the sick poor places of refuge, furnishing shelter, nourishment, nursing, and medical aid; and for many of the miserable candidates for such a charity, a hospital ward

offers comforts far beyond those to which they have been accustomed. But supplying these needs does not fulfil all the requirements of relief; sympathy, encouragement, and religious ministrations may be added with advantage in a sanitary point of view, irrespective of other and higher objects. For this part of the hygienic management the physicians must depend in a great measure on others. And here is a field for philanthropic labour which looks husbandmen. How few of the many who are earnest to benefit their fellows think of the sick and friendless poor in hospitals, where, by judicious words and offices of kindness, they might reap a harvest of good works, of which least in importance, although important, is the favourable influence on the course of disease! But I am entering on a train of thought which, for the medical reader, offers nothing new and is not called for, and I therefore here rest my remarks on hygiene in disease.

With this article I take leave of the subject of *Conservative Medicine*. In my first article I endeavoured to show that the term conservatism expresses the great feature of medicine of the present time, and a governing principle in medical practice. In my second article I considered the principle of conservatism as applied to therapeutics. In this third article I have offered a few fragmentary thoughts on the application of this principle to hygiene. With the rise and progress of conservatism we see a great, almost a radical change in practical medicine. This change is a legitimate result of the progress of knowledge. It is not to be expected that medicine is to be stationary; unchangeableness is incompatible with progress. There must be changes if medicine be progressive. Bearing in mind these truths, it is the part of every true physician to try to keep pace with the advancement of the profession.

ART. VI.—*On Sunstroke*. By HORATIO C. WOOD, JR., M. D., Resident Physician to the Pennsylvania Hospital.

DURING the heated term of our summers, several classes of cases of what is termed sunstroke are without doubt developed. In this paper but one of these is considered, no other having come under the notice of the writer.

CASE 1. J. B., Irishman, æt. about 30, was brought into the ward at 1 P. M., August 2, 1863. He was said to have fallen whilst walking in the street a few minutes before. He was perfectly unconscious, with very laboured breathing. His pupils were not markedly dilated or contracted, and yielded sluggishly to light. His skin was cyanosed and very hot and dry. He had vomited and passed his feces unconsciously. His pulse was