A new theory of pulmonary consumption : its causes, nature, and prevention / by Francis Eagle.

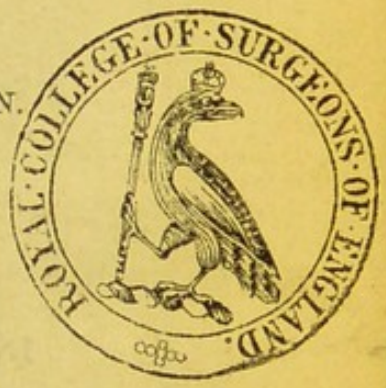
1	Eagle	A new theory of Pulmonary Consumption
2	.	A brief expostulation with Prof. Buckland
2a	Thomson	De Febri Endemica Batavicæ;
3	Jaylor	De Hominum Varietatibus
4	Temple	De Dyspepsia.
5	Skene	De Apoplexia Hydrocephalica
6	Salmon	De Chorea.
7	Scott	De Imitatione Complectens.
8	Wright	De Variolis.
9	Sayers	De Dysenteria

A NEW THEORY

OF

PULMONARY CONSUMPTION;

ITS CAUSES, NATURE, AND PREVENTION.



BY

FRANCIS EAGLE, SURGEON,

AUTHOR OF "A NEW THEORY OF SYPHILIS;" "THE CAUSES, NATURE, AND ENTIRE PREVENTION OF HYDROPHOBIA;" "THE CAUSES, NATURE, AND PREVENTION OF SMALL POX;" "THE CAUSES, NATURE, AND PREVENTION OF YELLOW FEVER," &c. &c. &c.

"In our investigation after Knowledge, great respect is unquestionably due to the opinions of men of acknowledged reputation and ability; but a still greater deference is due to *Truth*."—*Locke.*

"For men use commonly to take a prospect of nature as from a high turret, and to view her afar off, and are too much taken up with *generalities*: whereas, if they would *vouchsafe* to *descend* and approach nearer to *particulars*, and more exactly and considerately look into things themselves, there might be made a more true and profitable discovery and comprehension.

"Now, the remedy of this error is not alone this, to quicken the organ; but withal *to go nearer the object*."—*Lord Bacon on the Advancement of Truth.*

LONDON:
HENRY RENSHAW, 356, STRAND.
1839.

torily demanded the adoption of a "popular custom," was the *only* animal to which it was not extended!

The next subject to which I devoted particular attention was "Small-pox." Observation in practice, aided by some little philosophical research, led me to conclude, *first*, that (as regards cow-pox) the only method of permanently arresting its ravages, consisted in the annual, or at most biennial, renewal of cow-pox matter fresh from the cow, by the National Vaccine Institution; and, secondly, (with regard to the human subject,) that the grand periods for vaccination were *two*, namely, childhood and puberty. It is a satisfaction to the author, that the latter deduction has already been corroborated by more extensive research.

The necessity of constant recurrence to the cow has not, unfortunately, yet met with that attention which the great increase of Small-pox fairly calls for; and yet how simple and plain, and in how narrow a compass, lies this whole question, which continues to agitate all Europe and America!

For in what does the adoption of this proposition consist, but in *annually repeating Dr. Jenner's discovery?*

You complain, and all medical evidence shows the truth of that complaint, that the vaccine

matter has ceased to exercise that prophylactic power over small-pox which it formerly possessed, and yet you hesitate to place yourselves in that condition in which such immunity then consisted, and still consists!

See the strange Letter from the Vaccine Board to the Secretary of State, Feb. 1839.

Is it possible that the truth of this proposition can be much longer disputed? I believe not.

In a brief commentary on the statistical report of Captain Tulloch, it has been submitted that the principal cause of the great mortality amongst European troops in tropical climates (from yellow fever especially) is their persistence in European diet and stimulating drinks; for not only do nations suffer in proportion to their "high diet," but, even amongst individuals of the same nation, the most abstemious enjoy the greatest immunity from disease; and this view is further strengthened in the following pages by the testimony of Mosely, of Madden, of Copland, and others.

In the following pages, in the Philosophical Remarks, and also in the theory of Consumption, it will at once appear that *both* are but the "nuclei" for further matter.

The millepedes of ancient authors, the digitalis and oxygen gas of Dr. Beddoes, the uva ursi of Dr. Bourne, the tar vapour of Sir A. Crichton, the inhalation of St. John Long, Sir Charles Scudamore, and Dr. Ramadge,

"Like bubbles on the sea of *Error* borne,
They rise, they break, and to that sea return."

Shall salt and the saline system follow the same fate?—I appeal with confidence to further experience.

PHILOSOPHICAL REMARKS.

Dr. Clarke observes, "that although the power of different climates to alleviate and cure diseases is well established as a matter of fact, yet perhaps there is nothing in general science more unsatisfactory than the manner in which we are able to explain this influence; and certainly there is nothing in physic more difficult than to direct successfully its application. Much of this arises from the natural difficulties of the subject, but much also from our neglect of careful observation. And yet when it is recollected that the problem of physical climate still remains unsolved by natural philosophers, it need not be matter of surprise that the physician should find it no easy matter, nay, almost impossible, to give a satisfactory explanation, when the subject becomes

On climate.

complicated by the addition of such elements as organic life, health, disease, with all the intricacy and complexity of their combination."

The method of obtaining the above interesting knowledge is admirably expounded in the work of Hippocrates on air, water, locality, &c., and which has been subsequently and at different periods illustrated on a limited scale by Aristotle, Claromontius, Lord Bacon, Boyle, Smith, Madden, and others, by referring the principal changes, whether physiological or pathological, to a deviation of physical causes, air, water, soil, customs, diet, and clothing.

Claromontius, de aere, locis et aquis Terræ Angliæ.

The advantages of this knowledge would be boundless, for as the causes of the constitution and nature of things are to be found in the "Temperature of the Seasons," and the latter is again dependent upon meteorological phenomena; so astronomy is the foundation of all philosophy, whether in the aerial, mineral, vegetable, animal, or morbid kingdoms.

"If any one should think these are meteorological speculations, he may soon learn, if he can part with his opinion, that astronomy is so far from being of little use in physic, as to be of the greatest; for with the seasons the constitutions of men likewise change.

Hippocrates de aere, &c.

An extended view of this knowledge once obtained would supersede, in a considerable degree,

the use of medicine, especially of foreign production; for, by knowing the physical circumstances of different localities, and their operation on the human body, a change of residence could be selected where the inimical causes are absent, and the disease unsupported would cease with its cause.

Thus, persons obnoxious to ague lose that disposition, and even the disease, on removing to a locality where the physical causes of ague are absent: and the same of bronchocele, the incontinent or exciting cause of which being the water or liquid drunk, on removing to a locality where the fluid is of an opposite character, the disease will frequently, especially in the early stage, subside of itself, as I have myself repeatedly witnessed, and is farther corroborated by Odier, Alibert, &c.

The same may be said of urinary calculi, and many other diseases.

But, happily for mankind, it appears—

"That the same causes which produce a particular condition of the animal kingdom, also determine a particular *aptitude* or condition of the mineral and vegetable kingdoms."

Hence, every *zone*, *kingdom*, and *territory*, embraces those physical advantages best for its physical wants.

The Torrid zone has its peculiar physical world,

Human Comparative Anatomy of Lord Bacon.

its animal, vegetable, mineral, and morbid kingdom;—its peculiar materia morbida, its peculiar materia medica and alimentaria.

The Temperate and Frigid theirs also.

The tropical diet is incompatible with the temperate; the temperate with the frigid; so also of the animal, vegetable, mineral, and morbid kingdoms. The cause of which is the peculiar organization of the animal body; and ascending higher still, the cause of this is again "the Temperature of the seasons," operating through the different agency of air, water, locality, and possibly; in a degree, also of food.

Lord Bacon.

"There is no doubt but that the figure and structure of the inward parts are very little inferior for variety and lineaments to the outward members, and that hearts, and livers, and ventricles are as different in different men, as either their foreheads, or noses, or ears."

Thus we find

The circulating organs, the lungs, liver, the middle and anterior lobes of the brain, the

Copland.

muscles and bones, (excepting those of the head and face,) are very evidently smaller, and their functions less prominent, in the negro than in the European variety; whilst, on the other hand, the skin and its functions are more developed.

See also the stomach of the blacks of Sennaar.

Hippocrates.

You will generally find the complexions and

manners of the people to correspond with the nature of their country. Human Comparative Anatomy of Lord Bacon.

"Thus nature provides an antidote to the bane which is imposed on the inhabitants of unhealthy warm climates, and, by adopting the indications she presents, they are enabled to exist without suffering much more from disease than the natives of temperate climates, or having the allotted span of human existence much abridged. It is in no small degree owing to his persistence in the diet, beverages, clothing, and modes of living suited to a cold or temperate climate, and to which he had become accustomed, that the European is liable to disease when he has removed to a hot country. When travelling in the most unhealthy parts of intertropical Africa in 1817, I met with an Englishman who had lived there between thirty and forty years, and was then in the enjoyment of health. The circumstance was singular; and in answer to my inquiries as to his habits, he informed me, that soon after his removal to that pestilential climate, his health had continued to suffer, when, after trying various methods without benefit, he had pursued, as closely as possible, the modes of life of the natives, adopting both their diet and beverages, and from that time he had experienced no serious effect." Copland on Climate.

The Maltese use very little animal food; bread Capt. Tulloch's Second Report.

Human Comparative Anatomy of Lord Bacon.

with the vegetables of the country, and occasionally a little fish, form their principal sustenance; and the healthy and efficient state of the corps may no doubt partly be attributed to the important circumstances, that on becoming soldiers, they have not been required to change the simple diet which nature seems to have pointed out to the inhabitants of all southern latitudes, as most conducive to their health.

Hennen's Topography.

The soil and the inhabitants, if I may be allowed the expression, always re-act on each other.

Madden's Travels in Turkey.

"I had frequently observed that the exhibition of an emetic to the negro soldiers was often attended with convulsions and even death: on further inquiry, I found that these remedies invariably produced distressing effects in all the black people of Dougola and Sennaar. On examining the body, I found the stomach different from that organ in white people, both in size and structure. As this difference has not been noticed hitherto, I am free to acknowledge that the appearance I observed might be the consequence of disease, and not its natural state; but as I remarked the same difference in three cases, I think I am warranted in the supposition that the smallness of the negro's stomach, and the peculiar corrugation of their folds, are no less distinct marks of that race (insomuch as phy-

sical organisation is concerned) than their thick craniums and prominent cheek-bones. The vulgar notion of thick-headed persons being obstinate is founded in truth. But the peculiarity to which I alluded was this : the stomach was below the ordinary size of that organ in Europeans, and its internal surface resembled, in some degree, a turtle's throat, from the extent of its corrugations. I discovered, likewise, a difference in the skeleton, in two of these cases, each having six vertebræ of the loins, instead of five : and on examining the spine of many living negroes, I find the occurrence of six lumbar vertebræ very frequent. This accounts for the extraordinary length of the lumbar part of the back in many negroes."

Mr. Madden concludes that they must be a distinct race, and observes of the above peculiarity of stomach, that subsequent *post mortem* examinations in the military hospital of Alexandria confirmed his previous views.

The opinion that these negroes are a distinct race appears rather hastily assumed, for by a parity of reasoning it might also be inferred, that because the animal kingdom generally is more fruitful in some countries than in others, (Egypt and the Mediterranean for examples,) therefore they are all a distinct race.

Guthrie on Egypt.

Quadrupeds generally bring forth two a time, and sheep even four yearly.

Moses. Pliny.

The opinion that certain climates are more favourable for animal increase is of very ancient date, and is farther illustrated by the fact, that when, in the *less favourable* countries, individual cases of prolific birth occur, it is because *his* or *her* physical condition approximates to that condition peculiar to the more favourable countries.

Cunningham's New South Wales.

Human Comparative Anatomy of the First Descendants.

The colonial-born children of Europeans are denominated "currency." This name was originally given by a facetious paymaster of the seventy-third regiment quartered here, — the pound currency being at that time *inferior* to the pound sterling. Our currency lads and lasses are a fine interesting race, and do honour to the country whence they originated. The name is a sufficient passport to esteem with all the well-informed and right-feeling portion of our population; but it is most laughable to see the capers some of our drunken old sterling madonnas will occasionally cut over their currency adversaries in a quarrel. It is then, "You saucy baggage, how dare you set up your *currency* crest at me? I am sterling, and that I'll let you know."

These children grow up tall and slender like the Americans, and are generally remarkable for

that gothic peculiarity of fair hair and blue eye which has been noticed by other writers. Their complexions, when young, are of a reddish sallow, and they are for the most part easily distinguishable, even in more advanced years, from those born in England. Cherry cheeks are not accompaniments of this climate, any more than that of America, where a blooming complexion will speedily draw upon you the observation, "You are from the old country, I see!"

The animal and vegetable kingdoms are equally peculiar.

"European animals in general degenerate in the West Indies, and, as they descend in a few generations, retain but little resemblance of their original stock. How far this extends to the human race, as relative to natural endowments, is a subject of nice inquiry, and foreign to my present pursuit. However, if any inferiority is found at all, it does not appear in the first generation, or in those born immediately of European parents." Mosely.

Dr. M. admits, that in the first generation there is more acumen and intellectual refinement than in those born in Europe, and that "whether this diminishes or not in further removes, may admit of speculation."

"Telle est l'activité des causes perturbatrices qui forment la puissance du climat, que même Moreau de Jonnes.

sans sortir du territoire circonscrit de chacune des îles de l'Archipel ; le seul changement de demeure suffit fréquemment pour occasioner la perte de la santé. L'habitant des montagnes ne respire point sans danger l'air humide et chaud des cités, qui toutes sont à peine élevées de quelques pieds au-dessus du niveau de la mer ; s'il vient à séjourner dans les mornes, l'habitant des villes éprouve les inconveniens, du brusque passage d'une atmosphère embrasée à une température que la rapidité des brises semble rendre glaciale. Enfin, par des causes encore inobservées, les villes situées sur le même littorel a la même hauteur verticale au-dessus de l'Atlantique, et à des distances très-médiocres paraissent ne pas offrir une identité parfaite dans leur constitution atmosphérique, puisque des maladies dont le germe y réside, se declarent presque toujours parmi les troupes acclimatées d'une garnison dès qu'elles l'ont quittée pour une autre.

" Ces étranges altérations physiologiques sont aussi constantes que générales; elles ne se bornent point aux hommes d'Europe, dont l'acclimatement est si difficile : elles s'étendent aux animaux de ce continent, qui, lorsqu'on les transporte aux Antilles, perdent bientôt, du moins en partie, leur beauté, leur grandeur, et leur force primitive. Après quelques générations, la taille du cheval n'excède pas celle de l'âne. Quel-

ques mois suffisant pour d'épouiller le bélier de sa toison, et le coq de ses panaches brillans, le premier se revêt, au lieu de laine, d'un poil rare et inutile ; le second éprouve la mue des grandes pennes intermédiaires de la queue. Plusieurs observations qui je projette de verifier incessamment, me donnent même lieu de croire que le coq et la poule sans croupion,* qu'on a dit être originaires de Perse, ne forment point une variété réelle, et ne sont si communs aux Antilles, que parcequ'ils doivent ce caractère negatif à une degradation dont la cause est dans le climat.

"Le règne végétal presente une foule de faits analogues."

Every one is acquainted with the general fact of the difference between the plants of warm and those of cold countries ; between the plants that grow on plains, and those that grow on mountains. Thus, in the countries lying near the equator, the vegetation consists of dense forests of leafy *evergreen trees*, *Palms* and *arborescent Ferns*, among which are intermingled *epiphytal herbs and rigid Grasses*. There are no verdant meadows, such as form the chief beauty of our northern climate ; and the lower orders of vegetation, such as *Mosses*, *Fungi*, and *Confervæ*, are very rare. As we recede from the Equator, the plants above mentioned gradually give way to

Prout's Chemistry.

* Gallus ecaudatus.

trees with deciduous leaves ; rich meadows appear, abounding with *tender herbs ;* the *epiphytal Orchideæ* are no longer met with, and are replaced by terrestrial fleshy-rooted species; *Mosses* clothe the trunk of aged trees ; decayed vegetables are covered with parasitical *Fungi ;* and the waters abound with *Confervæ.* Approaching the poles, Trees wholly disappear ; *dicotyledonous* plants of all kinds become comparatively rare ; and *Grasses* and *cryptogamic* plants constitute the chief features of the vegetation.

Captain Tulloch'sReport. Comparative Philosophy. Animals. Diseases. Remedies

In the island of Jamaica almost any variety of climate may be procured. At a residence of four thousand two hundred feet above the level of the sea, the range of the thermometer is from 55° to 65° ; in the winter it falls even as low as 44°. There the vegetation of the tropics disappears, and is supplanted by that of the temperate regions. The diseases of the tropics too, seem, like their vegetable productions, to be restricted to certain altitudes and particular degrees of temperature.

The Maroon negroes are active, enterprising, and hardy.

Van Rense laer.

The plants grown on the borders of salt springs are similar to those growing on the seashore.

Dr. Clarke.

The influence of relative temperature on organic life might be aptly illustrated by a refe-

rence to its very remarkable effects on plants; and the influence of warmth, whether natural or artificial, in exciting or accelerating the vegetation of these, affords matter for the reflection of the physician in estimating the effects of climate on man.

Of the animal kingdom, the most remarkable illustration is that of the Jews, for history informs us of a race of this ancient nation, within the tropics, entirely black; and it is worthy of notice, that this fact, although noticed in the works of Pritchard and Lawrence, is by no means satisfactorily refuted. Rees' Cyclopedia.

In tracing the globe from the poles to the equator, we observe a gradation in the complexion nearly in proportion to the latitude of the country. Immediately below the arctic circle, a high and sanguine colour prevails. From this you descend to the mixture of red in white. Afterwards succeed the brown, the olive, the tawny, and at length the black, as you proceed to the line. The same distance from the sun does not, however, in every region, indicate the same temperature of climate. Some secondary causes must be taken into consideration, as correcting and limiting its influence. The elevation of the land, its vicinity to the sea, the nature of the soil, the state of cultivation, Rev. J. Smith.

the course of winds, and many other circumstances, enter into this view.

Again, the power of climate, I have said, appears from obvious and undeniable events within the memory of history. From the Baltic to the Mediterranean you trace the different latitudes from various shades of colour. From the same, or from nearly resembling nations, are derived the fair German, the dark Frenchman, the swarthy Spaniard and Sicilian. The south of Spain is distinguished by complexion from the north. The same observation may be applied to most other countries of Europe. And if we would extend it beyond Europe to the great nations of the East, it is applicable to Turkey, to Arabia, to Persia, and to China. The people of Pekin are fair—at Canton they are nearly black. The Persians near the Caspian Sea are among the fairest people in the world; near the Gulf of Ormus they are of a dark olive. The inhabitants of the stony and desert Arabia are tawny, while those of Arabia the Happy are as black as the Ethiopians. In these ancient nations, colour holds a regular progression with the latitude from the equator. The examples of the Chinese and the Arabians are the more decisive on this subject, because they are known to have continued, from the

remotest antiquity, unmixed with other nations. The latter, in particular, can be traced up to their origin from one family. But no example can carry with it greater force on this subject than that of the Jews. Descended from one stock, prohibited by their most sacred institutions from intermarrying with other nations, and yet dispersed, according to the divine predictions, into every country on the globe, this one people is marked with the colour of all—fair in Britain and Germany, brown in France and Turkey, swarthy in Portugal and Spain, olive in Syria and Chaldea, tawny or copper-coloured in Arabia and in Egypt.

The Comparative Philosophy of the American Nations.

Another example of the power of climate, more immediately subject to our view, may be shown in the inhabitants of the United States of America. Sprung, within a few years, from the British, the Irish, and the German nations, —the fairest nations of Europe,—they are now spread over this continent; and notwithstanding the temperature of the climate, and the continual mixture of Europeans, still they have undergone a visible change. A certain paleness and sallowness of countenance immediately strikes the traveller from Britain, and which is even still more plain in the labouring population, and in the southern than in the northern states.

Smellie's Philosophy of Natural History, vol. ii.

We cannot have a stronger evidence of the influence of climate upon the colour of the human skin, than to find under the same latitude, and distant from each other above one thousand leagues, a race of men so similar as those of Nubia and Senegal; and that the Hottentots, who have sprung from the blacks, are the whitest people in Africa, solely because the country they inhabit is the coldest.

Madden, vol. ii. p. 117.

Speaking of Egyptian paintings, Mr. Madden observes, "I was more struck here than elsewhere by the different complexions given to the two sexes in their pictures; the men are always painted red, the women yellow.

Philoe.

The few colours known to the Egyptians enabled them to approach no nearer to the real complexions of their race. If a painter had now only the use of the primitive colours, he would find that red would be the nearest approach to the swarthy complexion of the male Nubian, and yellow to the female, whose tint is so much lighter from the less exposure to the sun.

Guthrie and Smellie.

The most remarkable phenomenon connected with Hudson's Bay is, that animals change their colour, becoming perfectly white in winter, those from Great Britain especially.

Hippocrates.

Colours differ in different seasons; in northerly and southerly weather, and in different ages, no

man being able to bear a comparison with himself or another.

With reference to the colour of the human species, Mr. Lawrence observes—"The skin differs in some other properties besides its colour. Travellers have described it as remarkably soft and smooth, and as it were silky, in certain races, —as in the Carib, Negro, Otaheitan, and Turk. It secretes a matter of peculiar odour in some races." "The Peruvian Indians," says Humboldt, "who in the middle of the night distinguish the different races by their quick sense of smell, have found three words to express the odour of the European, the Indian American, and the negro; they call the first *Pezuna*, the second *Posco*, and the third *Graio*." Lawrence's Zoology.

This smell is not only found in the above races, but also in different parts of the same individual, even in temperate climates, where also the colour undergoes a corresponding change. If, then, we could explain the causes of the latter, it would most probably lead to a solution of the former, and the contrary. If I except the illogical opinion, that certain diseases can persist without a persistence of their causes, no one opinion that I have ever met with has excited my astonishment more than that which assumes that because mankind are of different colours, *ergo* they had different *origins*. Me- Theophrastus.

Pritchard, Buckland, Lawrence.

thinks that a careful observer must naturally conclude that philosophers who entertain these views must also be intimately acquainted with the true causes and nature of *colour;* familiar with human comparative anatomy; with the comparative analysis of the blood; of the sweat; of the action of climate upon the vegetable, animal, and mineral kingdoms; of the causes why some animals, as at Hudson's Bay, change their colour with the seasons. How great would be the surprise of such an individual to learn that such philosophers confess their almost entire ignorance of all this philosophy! Mr. Lawrence even says, "*he is not aware that any of the animal fluids have been analysed comparatively.*"

Proclaimed deficient in philosophy by Lord Bacon.

What is difference of smell but difference of physical composition? Who can tell, then, but that when we have discovered the physical peculiarities of the *black*, the action of heat and light upon the production of colour will appear a purely physical operation, and that the same causes *in nature* which determine the simple areola of the nipple in pregnant women, will also determine the colour of the human species: and that the comparative analysis, anatomical, physiological, and chemical, of the different parts of the body and its secretions, will unfold the *local* differences of colour, and ascending from localities to generalities, from individuals to

Our ignorance of colour; its nature and causes.

Nitrate of silver.

varieties, this philosophy will equally unfold the physical peculiarities of the white and the black nations of mankind?

Of all the climates of Europe, England seems to me the most fitted for the activity of the mind, and the least suited to repose. The alternations of a climate so various and rapid continually awake new sensations; and the changes in the sky, from dryness to moisture, from the blue ethereal to cloudiness and fogs, seem to keep the nervous system in a constant state of excitement. In the changeful and tumultuous atmosphere of England, to be tranquil is a labour, and employment is necessary to ward off the attacks of ennui. The English nation is pre-eminently active, and the natives of no other country follow their objects with so much force, fire, and constancy. Sir H. Davy. Consolations of Travel.

There are but few diseases that originate in England, in which the climate of England, with change of place and horseback exercise, is not equal to any other. Foreigners have an erroneous notion of the climate of England. Perhaps our atmosphere is not mild enough for the tender fibres of weak bodies, and for broken constitutions, where a decomposition of the frame has begun to take place. But take it for all in all, the climate of England is the best on the habitable globe. For by what comparison is a Mosely.

climate to be estimated which produces such a people as the English, and in which almost every species of animal arrives to the utmost perfection?

Shall I be told that this is unsavoury egotism? I ask who is the greater egotist—he who arrogates to his own paltry intellect the greatness of Great Britain, or he who refers that greatness to the peculiar physical condition and circumstances over which man has little or no control? And what does this philosophy teach? Bigotry? No. Blasphemy? No. Pride? No;—but humility and universal charity.

Capua fuit Canna Hannibali. Constantinople was *destruction* to the Thracian; Constantinople was *destruction* to the Roman; Constantinople was *destruction* to the Greek; Constantinople was *destruction* to the martial ardour of the Turk, whose very religion teaches that

Hydrophobia unknown in *Constantinople* and the East.

> "Through unbelievers' blood
> Lies the directest road to heaven."

Constantinople *will be destruction* to—*Ambition*, whether in the form of Goth or Gaul.

Having endeavoured to show that to the change of physical circumstances are to be attributed, first, and principally, the peculiar physical condition and variety offered by different portions of the globe, it will be comparatively easy

to show that the animal, vegetable, mineral, and morbid kingdoms, suffer changes corresponding with the changes of the seasons, spring, summer, autumn, and winter.

Those of the vegetable kingdom are sufficiently known to every casual observer; but, notwithstanding that Hippocrates has shown the importance of this study to the investigation of disease, modern authors generally devote scarcely any attention to this subject.

Simultaneously with the budding of trees, and of the vegetable kingdom, is the determination to the skin of the animal kingdom; variola in man, hydrophobia in the dog, ——— in the female; and in this change of the human body lies the Wisdom of the Christian fixed institution of Lent, and the Mahomedan blunder in the varying fast of Ramadan.*

In the Summer, the general expansion of leaves corresponds to the still greater determination to the skin and surfaces, as in the hemorrhagiæ.

Following Hippocrates and Sydenham; in the Autumn the inverse of Spring takes place, trees lose their leaves, seeds follow and ripen; as in the human body, the cutaneous perspiration diminishes, and tubercles form in the lungs.

* Ramadan, a heat which consumes.—Encyclop. Metrop.

In Winter, the diminished vitality, and sometimes the decortication of trees and plants, lead to the knowledge of the true nature of the condition of the human body in winter, by showing the almost entire departure of perspiration from the skin, and thus account for the prevalence of influenza, catarrh, and pneumonia.

Hippocrates. If with the seasons the constitutions of men likewise change, and with these changes we find a corresponding change of diet in the globe at large, then comes the question, whether a similar change of diet should not also take place, according with the changes of the different seasons in the same country; for almost all animals, even the domestic animals, the horse, the sheep, swine, and birds, have their diet varied according to the season, and especially in their wild state.

Hippocrates. "Our diet should be considered, as to the quality of meat and drink, in different seasons."

Philosophy of general diet. Custom, following nature, has sanctioned certain variations in the diet of man; as, veal and lamb in spring, fish and salt meat and fruits in summer, mutton and poultry in autumn, beef and pork in winter; and the same may be said of the different ages, for this change of diet is dictated by nature in the birth and maturity of the animal food.

In the Spring the drink should be mild and diluted, and greater in quantity than in winter.

In the Summer increased in quantity, weakened in strength.

In the Autumn, return to the strength of spring.

And in the Winter, strong and concentrated in quantity, as also of food.

Careful attention to these rules will most commonly prevent the various epidemics that occasionally prevail; the cutaneous diseases of spring; the bowel affections of summer; the rheumatic diseases and fevers of autumn; the influenza, pneumonia, and pleurisy of winter; for the causes of the latter being identical, so do they for the most part prevail at the same seasons. Aristotle. Hippocrates.

Future investigation will also most probably demonstrate, that as every species of vegetable possesses properties peculiar to itself, so of the different species of animals; and further, the same animal, according to the food on which it is fed, as Oil-cake Beef, Acorn-Pork. Galen, Celsus, Theophrastus, Pliny, Chevreul, and Lecanu.

I have endeavoured to learn from graziers and butchers, whether animals slaughtered in autumn and the early part of winter, after a moderately dry season, die leaner than after a wet season, when the quantity of grass has been more abundant. The answers I have uniformly received are, that they die best after moderately Williams on Climate.

dry seasons, provided care has been taken to supply them with a sufficiency of water; that is, they weigh better, and the meat is more firm; but after a wet season, the beef and mutton want that firmness, or solidity of flesh and fat, which constitutes good meat; and in the technical phrase is *squash*, like the food on which the animals have fed.

This simple fact will at once present to the mind of the intelligent reader the injurious practice of taking excess of fluid, whether as tea, water, soups, &c., or any other form; for a subsistence on fluid principally tends to produce a similar relaxed state of the solids of the body, and a diet principally of solid food tends also to produce a corresponding firmness and vigour of the whole frame; the quantity of both being regulated by the demand, namely, exercise and labour.

It having been previously advanced that the different zones and countries have that peculiar condition best for their wants, and that the constitutions of the animal and vegetable kingdoms, in the same country in the temperate zones, do also change with the seasons; and further, that a corresponding diet should also be adopted; I now submit, as another illustration of *this Philosophy*,—

"That plants are produced at that period

of the year, when the diseases for which they are indicated are also produced."

Dr. Paris observes, "Nature is very kind in favouring the growth of those productions which are most likely to answer our local wants. Those situations, for instance, which engender endemic diseases, are in general congenial to the growth of plants that operate as antidotes to them."

Thus, *of Countries.—Examples :*

South America has its intermittent and its forests of cinchona.

Brazils its mucous diseases, its copaiba and pareira brava.

China, its ginseng.

The Holy Land, its leprosy and citron.

Consumptive nations, their salt springs.

Of seasons.—Examples :

The Spring cough has its violet and almond emulsion, its cutaneous eruptions and sudorifics.

The Summer hemorrhagiæ their digitalis.

Autumnal rheumatism its colchicum.

Winter cough, its diuretics, &c.

Such is the glorious harmony of the physical world, that wherever there is found a particular disease, there also will be found its remedy.

"The prevalent maladies of Egypt and Arabia can be ill studied out of these countries; the modes of cure we bring from Europe are seldom applicable to diseases which are thoroughly modified by climate; that malady for which mercury

Madden's Travels.

is with us held to be a specific, is here cured without it by the natives.

"The dysentery of Egypt is very different in its malignity from that of England; and the intermittent of Alexandria or Cyprus, from the Lancashire ague; and were we to trust here to the same quantity of calomel in the one, and quinine in the other, which suffice to cure either of these maladies at home, we should be wofully mistaken.

This philosophy of national importance.

"The consideration of this subject, in however a summary manner, is of general, even more than medical, interest; inasmuch as its object is to warn the traveller of those dangers which have overtaken his predecessors, and caused the failure of so many African expeditions."

Herein lies the explanation of the almost constant failure of foreign remedies for home diseases, although in their own indigenous country they may deserve all the faith, which there obtains, of their efficacy; and the knowledge of this fact, so far as the philosophy of medicine is concerned, is of vast importance to its further advancement, since it dictates the necessity of investigating the properties of our own indigenous plants, rather than of those peculiar to foreign climates

Dr. Sigmond.

The philosophy of universal diet and living.

But the most important practical inference from these remarks is, that the philosophy of diet

and living consists in varying its nature in accordance with the peculiar physical circumstances with which we are surrounded—in other words, in closely approximating to the diet of the natives, whether in the Tropical, Temperate, or Frigid Zones; and the abuse of this knowledge, as Madden truly observes, has led to the failure of many African expeditions; and it might be added, with equal truth, the loss of an incalculable sum of human life.

The Philosophy of universal Diet, living, &c.

A recent example in the yellow fever in the French Mexican squadron.

Nor can it here be deemed superfluous to suggest the grievous error of having recourse to change of climate upon every slight indisposition, which is so much the fashion of the present day. How many suffer temporary banishment from their native, noblest land, merely for the sake of drinking the waters of some continental spa, whose properties are totally foreign to the British constitution; when some slight philosophical analysis of drink, or food, or clothing, or custom, would have demonstrated the "peccant evil," and the effect, the disease, would have ceased with the cause which produced it. And who can deny that the constant practice of residing a great part of the year in a foreign mild climate has a strong tendency to weaken the natural constitution of an Englishman? But, above all, it is unnatural; and whatever is unnatural is, generally speaking, to be condemned.

From a contemplation of the foregoing facts, and others of a similar character, I have always regarded the modern doctrines of cosmogony and geology, so far as they treat of a succession of *Creations*, as purely illogical, and founded *rather* in our ignorance than our knowledge. That certain entire genera of animals and vegetables have disappeared from the earth in the course of six thousand years, surely is no source for wonder; for their existence would become incompatible and irreconcilable with the universal spreading of mankind.

Our entire ignorance of human comparative anatomy, of animal comparative anatomy, of vegetable comparative anatomy, of mineral comparative anatomy, and of colour; their causes and nature, even of heat and light; their identity or non-identity; and, lastly, whether one or both proceed from the sun.

Throughout the whole universe, the physical condition of the globe is constantly deviating, up to a certain point, with physical causes. If an animal or vegetable has disappeared, the first point requisite to ascertain is, whether the food upon which that animal fed did not also simultaneously disappear, or whether it was not destroyed by the aborigines of a country. But without knowing the physical condition and circumstances requisite for the existence of an animal—without knowing the physical condition and circumstances requisite for the existence of a vegetable—without any knowledge of the causes of geological phenomena and their persistence—without any knowledge of the causes and true nature of colour and its varieties, even the colour of the new-born babe—wholly ignorant of human

comparative anatomy, of animal comparative anatomy, and vegetable comparative anatomy, surely it must appear something more than presumption to attempt to build up opinions in direct opposition to the Mosaic account, and, like the children of Cœlus and Terra, of mythology, to dare to wage war even with Heaven itself.

A modern reviewer has observed, and in that opinion I most heartily concur, "that the publication of the Bridgewater Treatises has done more for the advancement of irreligion, scepticism, and ungodliness, than the atheism of Lucretius, the wit of Voltaire, the learning of Gibbon, the philosophy of Hume, or the powerful intellect of Paine."

THE CAUSES, NATURE, AND PREVENTION, OF CONSUMPTION.

The history of a disease is but a relation, in part, of its phenomena or effects; and as by the observation of effects only it is that we can ascend in the scale of causation, the history of consumption will materially assist in investigating its true nature.

Adopting the Mosaic account of the creation, Asia and Africa were the first portions of the globe inhabited by the descendants of Adam; and as the same localities are also in the present day but little obnoxious to this disease, it need not be matter of surprise that, in the long catalogue of diseases by Moses, no mention should be made of consumption. And although a long interval of time elapsed from the period of the formation of Athens to the Hippocratic era, still there appears some ground for the opinion, that until mankind emerged from the dry and warm

countries of Egypt and Arabia, consumption was little, if at all, known.

The following is a very imperfect outline of the prevalence of this disease :

In Europe and America, very fatal ; in Asia and Africa, rare. Of the different countries of Europe—in Turkey, rare (Oppenheim) ; in Greece and Italy, common (Hippocrates) ; in the Mediterranean, common, but varying in the different islands and coasts, being in Malta and Sicily, common (Irvine) ; in Gibraltar, rare (Hennen); in Spain and Portugal, rare ; in Poland and Hungary, rare ; in Russia, rare, especially among the peasantry (Sir A. Crichton) ; in Lapland, we are informed by the celebrated Linné, that consumption is extremely rare. "Few or none of the Danes," observes Lord Molesworth, "are troubled with coughs, catarrhs, or consumptions, or such-like disorders of the lungs." In Sweden, also rare ; in Germany and Prussia, common ; in Austria and France, very common ; and most fatal in Great Britain and Holland.

European Turkey is a mountainous country, and its mineralogy little known.

In Greece and Italy the soil is rich and fertile, but contains little or no saline matter, Naples excepted.

In the Mediterranean, if we trace the relative mortality from consumption in the different

islands, it will be found that those islands abounding in salt lakes and saline matter offer the greatest immunity from this disease, other circumstances being the same. Dr. Hennen remarks, that the workers of salt in the different islands are robust, healthy men.

Hennen's Topography.

The soil of both Spain and Portugal abounds in saline matter; Cadiz and Lisbon, for example—the reputation of which for phthisical invalids is well known (Guthrie, Townsend).

A great part of Europe is supplied with salt from the mines of Wieliska in Poland, and those also of Hungary; and here phthisis is very rare. It is worthy of note, that the former country has always been famed for an indigenous breed of horses, remarkable for their breadth of chest and spirit; which remark may probably be extended to the Polish nation.

Many circumstances contribute to render Russia free from this disease—the common clothing of inverted sheep-skins, constant employment in the open air, the regularity of the seasons, where, as in the more northern countries, the year is principally divided into the two seasons of summer and winter; the diet also, as well as the saline nature of the soil: and, except in the latter property, the same may be said of Lapland, Norway, Sweden, and Denmark.

It is, therefore, in Germany, Prussia, Austria,

France, Holland, and Great Britain, that consumption becomes most fatal; and nearly in the foregoing order—in Germany being the least, and in Great Britain the most, fatal.

In Great Britain there are no salt mines, saving in Cheshire; in Holland there are no salt mines; in the United States salt has been observed only in solution in salt springs; (Dunglison and Dana's "Mineralogy;") there are salt springs in France, but no mines of rock salt. (Bakewell's "Geology.") Lyell.

Africa, lying almost entirely within the Tropics, is but little obnoxious to this disease; whilst Asia, stretching from the Torrid to the Frigid Zones, and embracing every variety of climate, appears also to enjoy considerable immunity from consumption; and both abound in saline matter.

Diseases of the lungs are exceedingly uncommon in Ceylon, both amongst Europeans and natives. The saline productions of this island are numerous—nitre, magnesia, alum, and common salt. The names of twenty places may be enumerated in which saltpetre is produced, and in which it has been manufactured; and no doubt there are many other spots which yield this salt known to the natives, whose policy it is not to make us acquainted with them. Dr. Davy's account of Ceylon.

The empire of Morocco furnishes immense quantities of salt and saltpetre. Jackson.

Thomson's Chemistry.

Carbonate of soda is found native in Hungary, Syria, Egypt, Arabia, Thibet, India, China, and South America, on the surface of the earth, and on the margin of some lakes which become dry in summer.

Dr. Clarke on the Mortality of Troops.

The mortality from consumption is greater in the West Indies than any other station, and least at the Cape of Good Hope and the East Indies.

Table XII., by the same author, constructed to show that phthisis is both relatively and absolutely more prevalent among the natives than among the Europeans in the East Indies, does not appear to warrant that deduction; for in Marshall's Topography of Ceylon, whence the above table is compiled, it is distinctly stated that only a part of the *Malays* are natives of that island, the remainder being brought from Java and Sumatra. The *Caffres* from the eastern coast of Africa, and the Indians from the Madras presidency; the Veddahs, and Kandyans—the aborigines of Ceylon—suffer but little from chest affections.

Nicholson's Dictionary. Sir A. Crichton.

In South America consumption is uncommon, in Peru especially. Peru abounds in salt mines and springs, and consumption is here unknown (Chardin); whilst in Chili, from its peculiar locality and temperate climate, with rich alluvial soil, it is by no means rare.

Peru, it is said, is unusually exempt from

consumption. My friend Dr. M'Burrough says, Dunglison.
"Dr. Morton, who resided upwards of four years in Lima, informs me, that he did not meet with a single unequivocal case that originated there during that period, although scrofula was not unfrequent." The same intelligent gentleman mentions, that he knew many foreigners in consumption to be much benefited by a residence in Lima; but that in every instance where they had been tempted to go further south into Chili, the effect on their constitutions was fatal.

Salt is found in immense quantities in Peru; Rees's Cyclopedia.
and it is worthy of notice, that in a great part of this country it never rains.

In the principal cities of the northern and Dunglison.
middle United States, between 35° and 45° north latitude, the mortality from phthisis closely approximates that of Great Britain; but on removing further northward towards Canada, or southward towards Charlestown, the disease becomes comparatively rare.

(N.B.—This method of investigation will be further extended to the different counties of England and Wales, when the statistical report of their general mortality is laid before the public.)

PHYSICAL SYMPTOMS.

The basis of pathology is physiology; for, without a knowledge of the healthy condition or action of a part, it is impossible to be certain of its morbid changes.

Healthy human blood is saline, healthy human urine is saline, healthy human sweat is saline. The urine of carnivorous animals abounds in phosphates of uric acid, containing a trace of muriate of soda. The urine of herbivorous animals abounds in carbonates of lime, soda, and potass.

Dunglison. Berzelius.

So also of the blood: when the carnivorous use the herbivorous food, then their blood and urine approach that of the herbivorous animal.

Müller's Physiology.

Chevreul found that, on feeding dogs for a considerable time on vegetables, their urine approached the condition of the *herbivora*, ceasing to contain uric acid and phosphate of lime. The contrary would also most probably follow in the herbivorous. So also the blood of the carnivorous is fatal to the herbivora; the blood of either fatal to birds; of birds, to fishes.

What a vast unexplored world here bursts upon the view! For when the proper food of either animal is deviated from, then the blood and urine also deviate, and disease or a deviation from their nature ensues. The physical condition of an animal, up to a certain point, deviates with the physical causes of that condition.

Primitive creation. *Brute-Tamers.* Nebuchadnezzar, Dan. chap. iv. Peter the wild boy also.

Saltness and acridity of the blood have been constantly connected with phthisis, either as a symptom or cause of the disease, from Hippocrates and Galen to the present day; but so vague, and indefinite, and loose has been this view, that I have not been able to ascertain that the opinion ever resulted from actual experiment.

Bennett, indeed, particularly notices this symptom; but it is rather curious that one of his most interesting cases of cured consumption was that of a gentleman who constantly offered this symptom; while in one of his fatal cases of *tabes*, in which this symptom was also present, the lungs were found perfectly *entire*.

Theatrum Tabidorum.

The opinion of Paracelsus, as to tartar in the blood; of Sydenham, Morton, and Sylvius, as to excess of serum; of Willis, as to sour blood; of Dolœus, Etmuller, Bennet, and others, as to saltness of blood, all seem equally deficient in one essential point, namely, demonstration by experiment.

Robinson on Consumption.

On this subject Dr. Robinson, 1721, observes, —" Now methinks it was a duty incumbent on these gentlemen to have demonstrated the existence of these several sharp acid juices, before they assigned them as a cause of so considerable a disease; yet nothing of this nature appears; not one step can I discover in all their writings that attempts to clear up this difficulty; nor is there any symptom in a body labouring under a consumption, that gives the least indication of their existence; unless we may derive their being in the body from an acid goust that sometimes arises in belching; but this will not serve their turn, because it happens most frequently to bodies under the soundest state of health; and Hippocrates makes it a sure indication of health returning after a dangerous diarrhœa.

" I have made several experiments with the different fluids of the body; but, upon the strictest examination, have not been able to discover the least appearance of acid sharp humours in the blood of persons labouring under consumption. The urine is often perfectly tasteless, and generally continues so through all the different stadiums of the disease. I have also examined the blood, especially the serum, and cannot discover the least acidity, *nor so much saltness as is generally observed in the blood of healthful constitutions.*"

Dr. Stevens, 1761, says, "the urine is perfectly tasteless, and the blood and serum discover not even so much saltness as may be discovered in the blood of healthful constitutions."

In confirmation of this view, Mr. Cruikshank compared the urine passed during an hysterical attack in the pregnant state, with the urine of a soldier labouring under tubercular consumption. The soldier's urine gave a much larger proportion of microcosmic salt than that which can be obtained from healthy urine; the hysterical urine produced the same in quantity and purity; and both excoriated the parts in passing. But the nature of the salts were found somewhat different. A little of the salt of the soldier's urine was thrown on a red-hot iron, and it melted readily, while those of the hysterical urine only in part, a considerable portion decrepitating, owing to a larger portion of common salt. By re-agents it appeared the former contained more phosphoric salt, and that the latter consisted principally of the muriates of soda and ammonia.

Rollo on Diabetes.

From subsequent trials of the urine of pthisical patients by mere evaporation, it appeared uniformly to give the same results.

Rollo, vol. ii. page 291.

Thus the history and physical symptoms both seem to suggest that moisture is the

Cause, and saline dryness the *Prevention*, of consumption.

Lemery. In Egypt and India, for example, salts of soda form a considerable portion of the soil, for to the saline atmosphere of Egypt Savary attributes the ophthalmia, so justly dreaded, and somewhat peculiar to the country. Speaking of Egypt and its diseases, Dr. James Johnson observes, "If this slight medico-typographical sketch be compared with what I have said respecting Bengal and the coast of Coromandel, it will be at once perceived that the climate of Egypt combines, in a considerable degree, the peculiarity of both these. It has the inundation from its central river, as in Bengal; it has its *samiels*, or hot land winds, with an excessively high range of temperature, as Madras."

Johnson on Tropical Climates.

Dewar. Their productions are also very similar; cotton, nitre, &c., as also many of their diseases, as leprosy, elephantiasis.

Dr. Clarke. The great prevalence of pulmonary diseases among the natives of tropical climates, who come to this and other cold climates, is doubtless owing to the influence of a cold and humid atmosphere upon their system. It is in such persons, and in young children, that tuberculous diseases are most speedily induced; and it is in these that inflammation appears more inti-

mately connected with tubercles. The rapid progress of the disease in both classes of persons is to be explained principally, I believe, by the circumstances of their habit of body being that which is most disposed to tuberculous affections —the most nearly allied to the tuberculous diathesis. The same disposition is observed in animals brought from warm climates. The monkeys that die in the Jardin des Plantes at Paris are, I believe, generally found to be tuberculous; in this case, however, other causes besides cold contribute to induce the same state. The influence of climate on the natives of different countries is often observed on a large scale in white and black troops. As the former move southward, pulmonary diseases become rare; and as the latter move westward, tuberculous disease becomes frequent, much more so than among the European troops.

Capt. Tulloch.

Countries that are ill situated with respect to the seasons, produce diseases of a like nature with the seasons; as, for instance, when the heat and cold are unequal or irregular the same day, autumnal diseases succeed there, and so in proportion to the other seasons.

Hippocrates.

This is peculiarly the case in Great Britain; and the coincidence is not to be overlooked, that those countries which are comparatively free

from phthisis, most commonly have no seasons at all equivalent to our four seasons; being either of the same temperature all the year, or divided principally into summer and winter.

Hippocrates. Descending from *zones* to countries; from *countries* to *individuals;* from *individuals* to *diseases;* the same character, excess of moisture, still obtains.

Billard. Those who fell into consumptions were the *smooth*, the *whitish*, the lentil-coloured, the reddish, the gray-eyed, the leucophlegmatic, and those whose shoulders stuck up behind.

This physical condition of the phthisical subject illustrates this theory as to individuals; the hectic sweats as to diseases.

Müller's Physiology, 119. It may also be observed, that Lecanu's experiments as to the relative proportion of fibrine to serum of the blood, in carnivorous and herbivorous animals, in men, women, and children, further corroborate this view.

Morton, Sydenham, Andral. This disposition to consumption is strongest in the lymphatic; the age of infancy; in the female sex, and in the negro race. The blood also is serous, and deficient in fibrine and colouring matter; and hence Morton, Sydenham, and others believed the lymphatic system to be the seat of the disease.

Andral informs us that he has detected tuber-

culous disease, or consumption, in many animals ; amongst the mammalia, the carnivorous, as well as the herbivorous ; monkeys, parrots, and other tropical animals, and even our own domestic animals, when removed from their natural air and exercise. There is one remarkable exception, however, to this general rule, in the dog; in which, according to the same author, he could never detect any tuberculous matter. This immunity would appear to be a consequence of his physical organisation in the construction of the skin, and the comparatively constant and free action of the urinary system. So that one *cause continent* of hydrophobia constitutes, also, his immunity from consumption. And it should be further observed, that herbivorous animals are more obnoxious to this disease than the carnivorous, speaking generally.

Pathological Anatomy.

Causes continent of Hydrophobia *two ;* absence of *vesiculæ* seminales, and absence of sweat.

The general character of all the excretions also strengthens this view; the nature of the perspiration is no longer the same as in health ; neither is that of the urinary system, or even the lachrymal ; the two former especially, having lost their saline taste and smell.

The condition of the skin is entirely changed from its natural appearance, and presents a condition opposite to that of the saline oily nature common to those nations which are free from this disease.

Hillary, Madden.

Aristotle, Dunglison, Clarke, Bennett.

The absence of this saline property leads first to sweetness and insipidity, and then to a decomposition of the fluids. When the change is sudden, this latter symptom sets in with little premonitory warning; hence the remark of Aristotle, that the flesh of animals in the first stage of phthisis is unusually sweet to the taste of the unsuspecting epicure.

Bennett's Theatrum et *Linguam*.

"*Odor* corporis maxime inter sudandù à consueto demutatus cutisq, presertim faciei quoad colorem deflorescentia, habitus corporis mutatus, vigor languescens, hujus adulterationis jamjam factæ in morbis plerisque diuturnioribus, præcipue pthisi, indicia sunto."

Cruikshank, Carswell.

Many coincident illustrative circumstances may here be mentioned; the immunity of sailors from phthisis; the superabundance of phosphates in the blood and urine; and the chemical composition of the tuberculous matter; the immunity of workers in salt; and, lastly, the fact, that a saline character of the blood is necessary for the persistence of health; it is, in short, its natural healthy condition.

Bostock's Physiology, Prater, Tiedeman, et Gmelin.

"There cannot be a doubt," says Prater, "that where excess of salt is used, that excess of salt gets into the circulating system; and that excess of salt will altogether change the properties of living blood, experiment satisfactorily determines."

Hence, that the saline character of the blood is supported by the quantity taken into the system with food, &c., is far more probable, than that it is formed in the blood by any vital action. Dr. Prout indeed, observes, that the muriatic acid, in combination with soda and potash, occurs both in the blood and in the urine, thus appearing to pass through the kidneys unchanged.

Beyond doubt the best of all cosmetics, nature's rouge.

It accords with my observation, that young persons, both male and female, not unfrequently abstain almost entirely from salt at their meals, under the impression that its tendency is to produce cutaneous affections. But if the evidence herein contained be taken at its proper value, it will appear that so far from being a cause, it is a most effectual remedy for many so called scorbutic diseases; that it improves the circulation of the skin, sweetens the breath, increases the periodical changes when deficient, diminishing them when in excess, and finally increases the general tone, vigour, and beauty of the whole system. It will be my task at a future opportunity to show, that, strictly speaking, salt is not the cause of scurvy, although one *property* of salt is capable of producing this disease; but that when such *property* occurs, where little or no salt is present, the scurvy may commit the most frightful ravages; as in besieged cities and armies; as in

the Milbank Penitentiary in 1819 ; and, finally, as in individual cases of either land or sea scurvy.

Lind on Scurvy, Stevens on the Blood.

The public are already indebted to Drs. Lind and Stevens, the latter especially, for endeavouring to remove the above erroneous but universal impression ; since, I am satisfied, that it will hereafter appear to others, as I myself have experienced, that the great increase of cachectic diseases, struma and consumption particularly, is, in a considerable degree, attributable to a deficiency of saline matter in the blood.

The cutaneous eruptions at puberty.

The necessity of a proper management of the eruptions common and somewhat peculiar to the period of puberty, has not yet met with that attention, either from the public or from the medical profession, which it so well deserves. During the earliest period of my professional education, the sudden suppression or cure, as it was surmised, of tubercular ache of the face by free friction with the stronger nitrated mercurial ointment, in a strong and healthy constitution, was followed by hæmoptysis, phthisis, and death ; and subsequent observation has served to confirm me in the opinion, that great danger to health is incurred by the officious and improper interference of art under such circumstances.

The danger of suppressing them by quack specifics

As salt forms a principal agent in the prevention of phthisis, a brief description of its properties may not be misplaced.

The most obvious hypothesis respecting the

formation of rock-salt is the one which supposes that it was deposited from the sea, or by the desiccation of salt lakes, which formerly covered the present continents. Of its original formation nothing is known. It is formed from the atmosphere, says Patrin: from submarine vegetation, says Van Renselaer. Lake Asphaltites.

From the Bible we learn, that salt was required to be present at most of the Jewish sacrifices; and throughout the sacred records, both old and new, it is frequently used as a type or sign of incorruption.* Other histories relate, that an "exorcism by salt" has been not uncommonly exercised for casting out devils, or rather for preventing their entrance into the human body. Johnson's Topography.

The veneration for salt, throughout all eastern nations, especially among the Arabs and Mahomedans, is well known to every reader and traveller, and even extends to the simple aborigines of every country. By the ancients, Homer, Plato, and others, it was called "corpus divinum," 'deo amicissimum;" and Pliny observes, there is nothing in nature more useful and necessary than air and salt. Madden, Davy, and Marshall on Ceylon.

It is one of the most abundant substances in Wood's Zoography.

* "And every oblation of thy meat offering shalt thou season with salt; neither shalt thou suffer the salt of the covenant of thy God to be lacking from thy meat offering; with all thine offerings thou shalt offer salt."—Leviticus, chap. ii. verse 13.

nature, being distributed with a profusion in proportion to our wants, and found in some state or other in every country of the world.

Van Renselaer.

In France, according to Necker, the annual consumption of salt was an average of fourteen pounds to each individual. In Cumana and Barcelona, according to Humboldt, the average consumption is sixty pounds per individual. In the United States, thirty-six pounds is the average consumption of each person.

Van Renselaer, Mayo, Paris.

In the United States of America, the custom of the bakers is to use only half a pound of salt to every bushel of flour; while in England double this quantity is used.

This remarkable difference in the two countries has probably some unknown practical ground for its foundation; perhaps in the relative *moisture* of Great Britain and America.

Van Renselaer, 1823.

"In order to show the quantity of salt that would be used yearly in Great Britain and Ireland, in case the duty on it was repealed, as well as to show the quantity used in those countries for different purposes, and to exhibit the oppression of the salt duty, I copy the estimate made by Mr. Parkes.

	Tons.
28,972,000 acres of meadow and arable land .	1,298,850
1,790,000 horses and colts	537,000
3,684,000 cows, oxen and calves . . .	1,094,400
Carried forward . . .	2,930,250

	Tons.
Brought forward	2,930,250
26,148,463 sheep and lambs	26,184
Butter, cheese, hay, &c., for farming purposes, in addition to what is now used . . .	10,000
Domestic general purposes, additional . .	20,000
Trade and manufactures, ditto	40,000
Increased quantity for the fisheries . . .	30,000
Add for Scotland and Ireland one half of the consumption of England	1,528,199
	4,584,597
Exports as at present	140,000
	4,724,597

Mr. Parkes makes a deduction of one half for the people not being accustomed universally, at present, to the use of salt; but that is probably owing to its present price, far above the reach of the very poor.

In case, then, of a repeal of the Salt Duty, there would be used and exported		4,724,597
Present exports and fisheries amount to	140,000	195,000
Present home consumption . .	55,000	
Leaving an annual amount of . . .		4,529,597

Or nearly one hundred and sixty-two millions of bushels, which British subjects are now prevented from using by the enormous tax of their government on this useful and almost necessary article.*

* The Salt Duty has since been repealed; but as it is announced that the government intend to renew it, the above statement, when taken in connexion with the author's theory, will serve to show the horrible policy of such a tax.

Mungo Park, in his Travels in Africa, relates that the continued subsistence on vegetable diet creates such a painful longing for common salt, that words cannot describe the misery of the sensation.

Dr. Paris observes, the beneficial operation of salt as a condiment is proved by ample experience. Theory has had no share in establishing the fact; and, in the present state of our physiological knowledge, *it will be perhaps difficult to offer a theory for its explanation.*

Mr. Mayo says, salt taken in moderation with food is not less wholesome than grateful to the palate. *Its operation is not clearly made out.*

Dr. Dunglison thus expresses his opinion: "Salt is the most important of all condiments, 'aliorum condimentorum condimentum.' It is a natural and agreeable stimulant to the digestive function, is liked by almost every infant, and is greedily sought after by wild animals, when it can be obtained in our forests; and, by those that are domesticated, is keenly relished when mixed with their ordinary food. In the western part of the United States, there are many salt springs called *licks*, in consequence of the bison and the deer resorting to them for the purpose of licking the earth around them, and it is in the neighbourhood of the tracks to these licks that the hunter waits, sure of his game when

the time arrives for its visit to the scene of enjoyment. The use of salt with the food appears of indispensable utility. A diet of unsalted aliment generating much morbid mischief, chiefly of a cachectic character, and its efficacy in preventing worms, bots, and the flukes of cattle, is well known to the agriculturist."

It appears extraordinary that with the ancient and universal reputation of salt, philosophical investigation has entirely failed in accounting for its action; the effects were observed, but the cause remained hidden.

Whilst some believe that it preserves the balsamic texture of the blood, and prevents it from growing too thin, others have entertained precisely the opposite opinion. Browning, Rutty, and Neuman.

Lord Somerville, in an address to the English Board of Agriculture, refers to a punishment that formerly existed in Holland, and which is illustrative of this subject. The ancient laws of the country ordained men to be kept on bread alone, *unmixed with salt*, as the severest punishment that could be inflicted upon them in their moist climate. The effect was horrible; these wretched criminals are said to have been destroyed by worms engendered in their own stomachs.

Evidence of a similar nature might be extended to a considerable length, showing that man in all ages and states, barbarian and civi-

lised, have found salt indispensable to their subsistence.

Dr. Mease, Phil. Trans.

It has also been found very effectual in preventing the "dry rot" of ships. Wood steepep in a saturated solution of salt, so as to be impregnated with it, is very difficult of combustion; and in Persia it is supposed to prevent timber from the attack of worms, for which purpose it is abundantly used in that country.

Nicholson.

Sir H. Davy supposed that the power of salt in preserving animal and vegetable substances is owing to its attraction for water, by which the decomposing action of that fluid is prevented, as well as the power of excluding air. In putrid fever, also, its efficacy has been ably and incontrovertibly established.

Dr. Graves of Dublin.

Hence it would appear, that whether in the vital or purely physical—whether in the animal or vegetable kingdoms, its antiseptic properties are the same.

Cholera. Lancet, 1833-4.

The attention of the medical profession was directed to its efficacy in cholera by Mr. Beaman of Covent Garden, who attributed its salutary influence to its power of exciting vomiting.

Dr. Stevens.

Subsequent experience, however, demonstrated this view to be erroneous, and that greater efficacy followed its retention in the system.

Drs. Thomson and Clarke have pointed out the utility of sponging the body with tepid salt

water daily; not only for its tonic properties, but also, and principally, for its diminishing the susceptibility to the impressions of cold and moisture. The former informs us, "It has always been a remark of seamen, that in dry weather, neither rheumatism nor catarrhs are caught at sea, however frequently the body may be wet with the spray or waves of the sea. And, aware of this fact, Captain Bligh, who travelled an immense tract of ocean, with twenty of his crew, in an open boat, preserved his companions and himself from these diseases, although they were exposed to frequent rains. He effected this by immersing the shirts and jackets of the seamen in the sea water, and ordering them to be worn in their moist state." Materia Medica.

Dr. Thomson's explanation of the action of salt by sympathy, rather than by absorption, is highly unsatisfactory; for Mr. Prater has shown that excess of salt taken into the stomach quickly finds its way into the blood, and thence into the urine; the truth of which may be verified by any one who will vary his diet for twenty-four hours.

Two remarkable effects of salt are observed in horses—its diurectic effect, and its effect upon the skin. It has also been observed, that horses which are fed a part of the year on salted hay and vetches, or peas, enjoy a considerable immu- Tilloch's Magazine.

nity from "bronchitis," pneumonia, asthma, and other diseases of the lungs. This practical observation has been verified by the experiments of Mr. Prater, which prove that whilst a small quantity of salt increases the coagulating power of the blood, an excess of salt retards its coagulation; and this would appear to explain the apparent paradox of its efficacy in cachexy, and also in preventing inflammation.

The blood in scurvy.

Neither is the above fact at all remarkable when we contemplate the physical organization of the skin and lungs, the latter being but a mere continuation of the former, as may be seen on a superficial glance at comparative anatomy. The fact of its salutary operation in preventing catarrh, is most probably referable to its attraction for moisture, as Sir H. Davy supposes, by which the moisture is at once removed from the surface of the body by means of the kidneys; and here, also, is the "magic" of its prevention of tubercular disease.

It is thus that the beneficial operation of a residence on the sea-coast, especially in the hot months of summer, receives a physical explanation—the saline particles contained in the atmosphere being carried into the circulation, and acting as a general tonic and astringent.

This view of the action of salt water is as old as Hippocrates and Aretæus, the latter of whom

attributed the salutary effect of sea-voyaging in consumption to the power of the saline particles in drying up the ulcers of the lungs. And it is also worthy of notice, that Galen and Celsus had the same principle in view, when they recommended a change of air from the moist countries of Italy and Greece to the dry and saline soil of Alexandria. Further, if the reader will now acquaint himself with the history of the diseases of Madeira, Pisa, and Rome, he will find it difficult to avoid the conclusion, that inasmuch as the philosophy of change of air in consumption is concerned, the ancient physicians were far wiser than the modern.* Hippocrates also distinctly points out the efficacy of honey and salt, *after* the abscess of the lungs has burst: and Salvadori, who enjoyed great reputation in diseases of the lungs, adopted a somewhat similar treatment.

Further illustrated by Captain Tulloch's Second Report, March, 1839.

In an interesting memoir by M. Billard on consumption,—who traces the disease as occurring most frequently in the moist countries of Great Britain, Ireland, Holland, and the coasts of the continents of France and America,—the efficacy of fumigation and inhalation are strongly insisted upon. Consistently with the above view of "excess of moisture," M. Billard advises only those of a drying and astringent nature; but as

Mem. de l'Acad. Chirurgie.

* I am happy to see this view of the subject strengthened by the testimony of Dr. Cumming.

this treatise is at present limited to the consideration of the *causes*, *nature*, and *prevention* of phthisis, I purposely omit enlarging on its cure.

Moseley, page 542.

In a sudden attack of hæmoptysis, or indeed any hemorrhage of blood, where medical assistance cannot immediately be obtained, Dr. Rush strongly advises a teaspoonful of common salt, dissolved in a glass of water.

Hutchinson, Med. Gazette, April 6th.

The immunity of sailors from urinary calculi, with some additional remarkable evidence, suggests the idea that muriate of soda exercises a powerful influence, not only in preventing their formation, but possibly also in effecting their solution when already formed.

Barrenness.

I do not believe that, in the whole list of the "Materia Medica," any medicinal agent can be found half so effectual in sterility, as a judicious use, externally and internally, of common salt.

Dr. Murray, Med. Gazette, Dr. Stevens.

The ill consequences resulting from excess of salt, if any, are entirely unknown; and, as has been previously observed, the opinion as to its being the principal cause of scurvy has given way to an opinion nearly opposite—namely, the extraordinary efficacy of the saline treatment of this disease. Dr. Lind found, on extensive trial, that the free use of sea water entirely failed to produce the scurvy.

Tilloch's Magazine. Dr. Mitchell. Hennen. Beddoes.

In the mines of Wielieska, in Poland, where the workmen labour underground, and consequently in an atmosphere strongly impregnated

with salt, it has been affirmed, on good authority, that they do not suffer from any particular affection; and the workers of salt, and those who use it extensively in salting provisions of any kind, whether fish or meat, are remarkably free from consumption.

Murray on Phthisis.

The sanative effects of salt water when applied to cuticular excoriations, &c., are admitted; and we cannot deny a similar action on ulcerated lungs, when such an atmosphere is, in the act of respiration, brought in contact with them. Vogel and others have clearly proved that the atmosphere incumbent over the ocean contains muriates in solution; and the very attenuation which attends their wide diffusion through the air, would afford more ready means for its introduction by respiration. In the Mediterranean we have often determined the fact; and during a perfect calm, on the Breakwater in Plymouth Sound, last summer, our experiments detected in the incumbent air, carbonic acid, muriates, bromine, and iodine. One method was to empty a flask previously filled with distilled water, with the exception of two or three ounces, and repeatedly for a period agitate the included atmosphere in contact, opening the flask at intervals for a fresh accession; and then apply the usual tests. This being evident, the benefit of a sea voyage is no longer a problem; and though the

seas of temperate climates may prove beneficial, it is obvious that those of the tropical regions, from the more brisk evaporation, and consequently more constant and continued accession of saline matter, will be proportionably more sanative.

It is generally believed that "colds" are not so readily caught at sea, even though the "sea spray" may drench the individual; and this position, which is granted, is easily explicable, when we consider that the system cannot be so chilled by evaporation, as must be the case generally on land, because the hygrometric state of the atmosphere would considerably modify this process. That muriates are contained in a marine atmosphere, is evident from the *rust* which encrusts the iron furniture of a ship, even below deck; and chemical means will detect muriate of iron in this rust. It is known that if a bit of cloth or sponge, previously well washed with fresh water, be hung up between decks, it acquires a salt taste.

It is a coincidence too important to this theory to pass over in silence, that this rusting of iron is equally observed in *India* and *Egypt*—two countries, be it remembered, enjoying considerable immunity from phthisis.

I do not propose *now* to enter into any further investigation of the action of salt upon the

human body, being rather desirous to offer a fair statement of facts, from which the inference may be as clearly drawn. Whether salt increases the *absolute* quantity of the red particles of blood, or whether such increase is relative, and not absolute,—a consequence only of a removal of a portion of serum,—I believe it will be generally, if not universally, found to improve that cachectic, lymphatic, exsanguine state of the body which lays the foundation for phthisis and many other diseases; and this is sufficient for my inquiry at present.

My attention having been directed to the Second Report of Captain Tulloch, I was desirous of ascertaining how far these views were confirmed.* Lancet, March 30th.

In British America, the evidence, rather equivocal, will still be found in favour of this theory.

In the Mediterranean command, the following is the annual ratio of mortality from diseases of the lungs:

	Per 1000 of mean Strength.
Gibraltar . .	5.3
Malta . . .	6.0
Corfu . . .	4.8
Santa Maura	2.5
Cephalonia .	6.0

* Against these Reports two strong objections may be alleged; first, that they differ considerably from Dr. Hennen; secondly, that the causes or localities which produce pneumonia do not *necessarily* produce phthisis.

Ithaca . . .	6.9
Zante . . .	4.0
Cerigo. . .	4.0

One remarkable peculiarity in the diet of Gibraltar is, that on the average of the whole year the quantity of fresh and salt meat consumed is about equal; while at Malta the ration of the troops consists, weekly, of six days fresh meat, and the seventh only of salt pork; *and among the natives and native troops, who eat scarcely any animal food except salt fish, pulmonary diseases are very rare.*

Report. Henner.

In Corfu, salt and fresh water lakes are both present; and, by a casual coincidence, here we find the mean mortality from diseases of the lungs in the whole Ionian islands.

"I have never considered," observes Dr. Hennen, "pure salt-water ponds as strikingly deleterious; and the opinion, as far as regards Corfu, seems to be strengthened by the fact, that a Sicilian and an English family, who long resided near the saltpans of Potami, had not suffered from fever. I am acquainted with similar facts with regard to the saltpans of other countries."

Subsequent remarkable illustration.

But the remarkably low mortality in Santa Maura seemed to present a fair trial of my views; and, on turning to Dr. Hennen's Topography, the fact was striking: "The principal feature,"

says he, "in the medical topography of Santa Maura, is the great salt-water lake, or rather lagoon, on the banks of which the fort and the town are built."

In Cephalonia there are fresh-water lakes only.

In Ithaca, a rocky, barren island, "neither lakes, marshes, nor any collections of water, (accidental deposits from rain excepted,) are to be found."

In Zante, extensive salines are situated on the western coast, and the barracks are situated in the capital, close to the sea. Hennen, Report.

In Cerigo, the principal military station is a fort on the south-east side of the island, on the summit of a rock, rising abruptly from the sea to the height of five hundred feet, and insulated, except on the northern side, where it communicates with the ridge of land whereon the principal town is built.

From the same Report, I extract the following table of mortality from diseases of the lungs in the United Kingdom :

	Annual Deaths per 1000 of mean Strength.
Foot Guards	14.1
Dragoons and Dragoon Guards	7.7
Household Cavalry	8.1
West India depôts	9.6

What are the causes of this uncommon mor-

tality in the foot guards? for here is a peculiar *effect*—there must be a peculiar cause or causes.

The causes of immunity peculiar to horse-soldiers are, first, their attendance upon their horses, and consequent exposure to an atmosphere more or less impregnated with ammonia and other alkaline substances, proceeding from the excretions of the animals; and the popular opinion amongst farming labourers, that being with horses is conducive to health, is probably founded in truth.

The causes of excessive mortality in the foot guards, starvation and fresh meat diet.

The second peculiarity is in their diet. What the peculiar difference is, does not appear from the Report; but as the foot guards have only 4s. 7d. weekly, while the dragoons have 5s. 1d., some considerable addition is clearly afforded to the latter; and in addition to this, a considerable number of private soldiers in the dragoons, &c., are men of some property, and other resources, independent of pay.

This difference of diet is further illustrated by the following table of mortality from liver diseases:

	Deaths.
In the Dragoons and Dragoon Guards	4 in 1000
In the Household Cavalry	5 in ditto
In Civil Life	3 in ditto
In the Foot Guards.	1 in ditto*

* The West India depôts are here excluded, for their mortality from yellow fever must render any comparison *illusive*.

There can, then, be little doubt but that the extremely low diet of the foot guards exercises a most fatal influence in increasing their mortality.

The diet is as follows :

1lb. of bread daily, with coffee for breakfast ;
¾lb. of fresh meat, with vegetables.

There is no supper ; and as the hour for breakfast is eight, and for dinner one, o'clock, nineteen hours elapse without any regular meal.

Now, from Land's End to John o'Groats, scarcely a healthy housemaid who twirls her mopstick could be found, whose daily consumption of food is not nearly double the above—as her tea, her supper, her butter, cheese, and ale.

An approximation to the diet of seamen worth notice.

The metropolitan police *fare* infinitely better ; and here there is also a corresponding decrease of disease, especially of phthisis. Unquestionably the proposition is important, whether the mortality of foot guards would not be less, if the rations consisted every other day of good salt meat. But although salt is a vitally important article of diet, it cannot entirely supersede the necessity for food ; I submit, then, that the principal causes of excessive mortality in the foot guards are starvation and fresh meat diet.

The consideration of this subject is of grave importance, for inasmuch as the physical strength of the army is diminished, a corresponding ad-

vantage is given to an enemy, and in the shock of battle this effect must be considerable.

Courage has always been indigenous in England—and even amongst the conquerors of the world, a legion of Ancient Britons acquired the honourable cognomen of "invicti,"—and at this period it may be added, that their diet consisted principally of flesh and milk, with which they consumed considerable quantities of salt and very little bread.

Henry's England.

This is not the proper place to enlarge upon this subject, or the opinion could be freely illustrated, that the physical power of the army has been greatly undermined within the last century. The remark is common amongst keen observers, that in a common street "row," between the soldier and artisan or labourer, the former is most commonly worsted; and I challenge contradiction, that under the imposing dress of the military, there is too commonly found a body with little muscular power, the mere skeleton of a Briton, but still a Briton. Hence the inference seems good, not that other nations have advanced *up*, but that we have gone *down* in physical power.

Agincourt, Crecy, Poitiers. Cromwell's army *versus* the Peninsular and Waterloo.

Hours *versus* days.

Sir A. Carlisle.

It appears, then, that on home service, when the soldier requires the fullest diet, he receives the least; and that on foreign service, when he receives the most pay and diet, then he requires

Philosophical Remarks.

Strange inconsistency.

Yellow fever.

the least;—speaking plainly, that he is *fed* to death abroad, and *starved* to death at home. Phthisis

And this truth, pregnant with human life and happiness, reposes on no flimsy and ephemeral theory of man, but in the eternal goodness and benevolence of the Creator, which provides, that wherever man is placed, whether in the temperate, the tropical, or frigid zones, there, too, will he be surrounded by that physical world best for his physical wants.

> "Reasoning at every step he treads,
> Man yet mistakes his way,
> While meaner things which instinct leads,
> Are rarely known to stray."

This view of the mortality of the foot guards in no degree invalidates the foregoing theory, but rather the contrary,—for, from casual observation and experiment, I believe, on trial, it would be found, that the urine of the foot guards almost never offers its proper healthy quantity of muriate of soda; and the peasantry of Russia, Denmark, Sweden, and even of Great Britain, who consume largely salt and salt meats, enjoy the greatest immunity from phthisis. Lord Molesworth, Sir A. Crichton, and Sir J. Clarke.

GENERAL ILLUSTRATION.

Case I.—A female, aged fifty-three, was suddenly attacked with violent coughing and spitting of frothy blood; she had for some time previously been in delicate health. A small quantity of blood drawn from the arm offered no inflammatory character. A copious purulent expectoration succeeded the hæmoptysis, the cough continuing frequent and urgent, accompanied by afternoon fever, hectic flush, night perspirations, and quick pulse, ninety.

The urine, perspiration, and serum of the blood, almost tasteless, and offered, in this respect, a remarkable contrast to the same fluids of a healthy individual.

The saline treatment was adopted for five weeks with the most complete success.

Case II.—I was called to attend upon a young female, who had suffered from continued indisposition and debility since the death of a sister from phthisis, twelve months ago: she had attended closely upon her, and even slept with her on the night of her death. This poor girl was parentless, friendless, and houseless, save when

in service, and strongly impressed with the idea that she was going after her poor sister.

Symptoms.—Pain in the left side, pulse ninety-four, bowels regular, cough with thick muco-purulent expectoration, occasionally tinged with blood, pale and exsanguine skin. Night perspirations; catamenia scanty. She had a great aversion to salt, and never ate any with her food beyond what was contained in the bread, &c.

A few ounces of blood taken from the arm presented a buffy appearance; her urine was phosphoric, and deficient in muriate of soda; the serum of the blood also, when compared with that of a healthy person, was very deficient in the same salt.

The saline plan of treatment was adopted; the night perspirations became less, the cough and expectoration less, and in three weeks she possessed more healthy colour and constitutional vigour than for the last twelve months. Her catamenia become more abundant, resuming their original natural character.

Case III.—A young female, aged sixteen, presenting the usual pale and lymphatic appearance of chlorotic invalids, requested my opinion as to the probability of her becoming consumptive. She had three years since lost a brother, and more recently a sister, both from phthisis. Inquiry at once elicited the fact of their taking no

additional salt with their food; their parent prohibiting it, under the idea that it produced scorbutic humours. The catamenia had not yet appeared.

She was directed to take, at the least, one teaspoonful of common salt at divided meals daily, and a morning aperient twice a week, consisting simply of a table-spoonful of Epsom salts with a little salt, and, when convenient, to substitute for this "common sea water." This patient gradually improved in health under this treatment, and her catamenia having appeared, she was requested to continue the salt with her food and the aperient occasionally.

Case IV.—A young lady, aged twenty-eight, who had laboured under delicate health for a long period, at length became confined to her room, and latterly to her bed.

Symptoms.—The appetite, which had previously been voracious, suddenly became deficient, but she did not observe any corresponding loss of strength. She had, at the age of seventeen, an unpleasant eruption on the face, which her friends attributed to the constant custom of taking considerable additional salt with her food, of which she was very fond.

Yielding to their entreaties, she conquered this habit, but within a few months began to offer symptoms of general cachexy, which,

although sometimes relieved by a course of tonics, have been gradually increasing to her present condition. The skin is dry and unperspirable, catamenia scanty, bowels costive. I directed, first and principally, that she should at once return to her former practice of taking a fair portion of salt daily; and with an additional pill of pil. hydr. et pil. aloes c. myrrhâ occasionally. Her health in five months was completely re-established.

Case V.—A family, consisting of wife, husband, and four children, resided for some years in the city. The eldest son, aged twenty-four, was attacked with cachectic symptoms, and in rather less than two years died from tubercular phthisis.

The second, a daughter, aged seventeen, one year after, also died of the same disease; but in this case the disease ran its course more rapidly.

The third, a married daughter with two children, came under my care, offering these symptoms; night perspiration, pain in the chest, no cough, but general debility, pulse quick, urine saltless. It was natural for the parents to think, as indeed they did, that she was consumptive also. Inquiry elicited the above history; and finding that my patient, who possessed a fair blue skin, had constantly avoided salt, I strongly

urged the necessity of her taking, at divided meals, at least one tea-spoonful daily; when her mother informed me, that her two former children had an unconquerable aversion to salt, and she really believed it had something to do with their early death. This patient did well in a few weeks.

Case VI.—A respectable young man came under my care with cough, and purulent expectoration, mixed with mucus amounting to ℥iv daily. He informed me that he had been the subject of cough for some months past, but that, until within a month, he expectorated only occasionally a little blood.

The saline plan of treatment was at once adopt ed in this case, and somewhat too anxiously, for in a week the patient experienced a most severe attack of "sciatica," the cause of which, I am disposed to believe, was the sudden suppression of the hectic sweats, simply by salines. I explained to the patient this probable effect of the medicine, at the same time observing, that it was far better to suffer temporary pain than a continuance of a disease whose termination was almost invariably fatal. The patient recovered from the rheumatic attack in rather more than a fortnight, and gradually recovered also from his pulmonic disease.

Case VII.—A pale, emaciated young lady,

aged twenty-four, came under my care for general cachexy, which had latterly increased to cough. Appetite bad, bowels costive, restlessness at night, night perspirations, and blanched skin. She had an aversion to salt. She had taken Hooper's pills for some months, without effect, in order to return the catamenia, which had been suppressed for eighteen months. The utility and importance of salt being demonstrated to her in familiar and convincing language, it was agreed that for the first few weeks a fair trial should he given to its medicinal powers, aided only by a slight aloetic aperient. I lost sight of my patient for six weeks, when, being in her neighbourhood, I called to inquire the efficacy of this "aliorum medicamentorum medicamentum;" when I quickly found that I had made one practical convert to my views on salt.

Case VIII.—A respectable man, aged thirty-six, who had occasionally, from habits of intemperance, suffered attacks of delirium tremens, had for some months past been the subject of a cough, of which at first he took little notice. Latterly, however, it had become exceeding troublesome, and being also attended with diminution of bulk and general loss of strength, excited the alarm of his wife and friends, and in consequence he placed himself under my care.

Pulse quick, ninety-six; night perspirations,

urine tasteless, percussion under the left clavicle *dull*, respiratory murmur *weak*, cough, without expectoration.

The saline plan of treatment was adopted with success.

Case IX.—I was requested to visit a young lady, aged twenty-eight, who had been for some months past labouring under symptoms commonly indicative of approaching phthisis. An elder brother had also recently succumbed to that disease. Being much attached to him, she had been accustomed, in the latter part of his illness, to read by his bedside, and constantly to pass some hours daily in his bedroom. She states, that she has never felt well since the decease of her brother, now ten months ago. By a coincidence, as new as it was striking and extraordinary to me, I learned that so strong was the impression against salt in this family, that it was rarely placed on the table, excepting when others than the family were present.

Simply urging the mighty power of this condiment, and showing its existence in all the healthy secretions, I prevailed at length upon my fair patient to take, at divided meals, at least one small tea-spoonful daily.

She recovered in a few weeks.

Case X.—The mother of a young lady consulted me on the health of her daughter, aged

fifteen, of remarkably diminutive stature, scarcely exceeding four feet. The fact, not very uncommon in largely populated cities, would not perhaps have excited my attention, but that, on inquiring into her general diet, the mother informed me that she strictly and constantly prohibited salt to her children; alleging as a cause, the idea of its action on temper—that it made children grow up passionate and irritable. But what struck me most forcibly was, that she informed me she had two elder daughters almost equally diminutive, and three younger children, who, on comparing their respective ages, were clearly of the same character as to bulk, and their tempers were not represented as at all favourable to the lady's view. It should here be observed, that herself and husband were of moderate stature. Engaged at this period on the subject of salt and consumption, I proposed to myself this question,—"Other circumstances being the same, two children in one family are selected; the one abstains entirely from any additional salt to common food, the other uses it freely; will any difference of stature and strength result?" Without professing at present to decide this very important question, I will state my belief from observation, that considerable difference of stature, strength, and health will result.

This publication is confined professedly to the

"causes, nature, and prevention of consumption:" it is, however, but *just* to the subject to state, that two cases have recently occurred under my own care, where true phthisis, accompanied with distinct thoracic pectoriloquy, have yielded to this plan of treatment; but as a modern keen writer has observed,* a certain number of isolated cases may be adduced in favour of almost *any plan of treatment*, the post hoc remedium, rather than the propter hoc. I am therefore unwilling to risk the reputation of this, I believe, most efficient system of *cure*, upon the frail basis of only a few isolated cases.

GENERAL DEDUCTION.

Modern philosophy, or rather that part of it which teaches that particular diseases, as the morbid poisons, have had but one solitary origin whence all mankind became infected, has always appeared to me as grossly illogical. Why? That it not only presupposes a condition contrary to the general laws of nature, namely, that causes are not necessary to effects, but that, *without knowing what the original cause was, it at once assumes that such cause no longer exists.* It is

* Editor of the Lancet.

submitted, that to take up any opinion or theory upon such negative foundation, is contrary to all rules of sound reasoning.

If the poisons of hydrophobia, or of small-pox, or of scarlet fever, or of measles, or hooping-cough, owe their existence to one solitary origin, how does it happen, on the one hand, that they cease at particular seasons and intervals, and return also with tolerable certainty?

Cases of spontaneous hydrophobia constantly occur where no contagion can possibly be traced; and the peculiar physical condition of the animal, previous to an attack of this disease, and the peculiar period of its occurrence annually, when compared physiologically and pathologically with a similar disease in the human subject; which latter disease originates "de novo" daily,—all tend to establish the view of its origin "de novo."

Gilman, Cooper. See also Essay on Hydrophobia.

The same argument is equally applicable to small-pox; of the identity of which with cow-pox there can scarcely be a doubt, since in *causes, period of occurrence, and effects*, they are identical. They differ, it is true, in one considerable property, namely, that one is a local, the other a general exanthematous affection; but this property, so far from arguing their non-indentity, is an additional illustration of their identity, since they approximate and are identical just so

A case in Hamilton on Hydrophobia.

far as the physical condition of the two animals approximates—for *specific poisons derive their peculiar properties from the physical formation, condition, or circumstances of the animals whence they arise; which properties they still retain, even though inoculated into animals of different physical formation.*

The suffocating sensation on first entering a cold bath.

The truth of this proposition may be further observed in hydrophobia, in the peculiar condition of the skin, and also in the peculiar "voice" which has been not inaptly compared to the "barking" of a dog. How far this latter symptom may be a consequence of the former, merits consideration.

Mason Good and others. Sir B. Brodie, Lancet, 1834.

The opinion entertained by several able authors on hydrophobia, that spontaneous "feline" hydrophobia, when communicated to the human subject, is not attended with the same dread of water, or with the same fatality, seems here to meet a solution; for human hydrophobia, feline hydrophobia, and canine hydrophobia, although in causes and nature the same, differ in *degree*, according with the difference of physical organization of the animal originating each peculiar disease.

It was from a similar train of reasoning that the author suggested the probability of identity in nature, and also in effects, of the measles in swine with the measles of children. Some

inquiry and investigation elicited, that they both occur at the same period of the year, offer the same symptoms, and are commonly followed by the same effects.

" On donne le nom de rougeole à une inflammation plus ou moins étendue de la peau chez les pores, laquelle se reconnâit à tes taches rouges peu éléves qui se montrent surtout au groin, autour des oreilles, aux aisselles, et à la face interne des cuisses. L'invasion de cet éruption est marquée par l'accélération du pouls, la chaleur des tégumens, le coryza, la tous, la diminution de l'appetit, les nausées ou vomissement, le gonflement des paupières, l'epiphore, etc. la terminaison a lieu par desquamation de l'épiderme. Il n'est pas encore décidé si la rougeole des porcs est contagieuse ou épidemique comme celle de l'homme, ni si ces deux maladies sont identiques."

Dict. de Med. Veterin. par Hurtrel D'Arbroval.

Measles in swine originate " de novo " commonly ; why should not measles in children ?

I have repeatedly alluded to the importance of ascertaining, by experiment, whether inoculation from the measles in swine will not give rise to a corresponding mild disease in children ; but although I have been at some trouble, I have never succeeded in procuring an animal labouring under this disease, although in agricultural districts it is very common.

Dr. Hillary on Barbadoes.

Of the origin of hooping-cough, Dr. Hillary observes, "that the hooping-cough, which had not been known in Barbadoes for several years, became prevalent after a very wet July; and that, upon the strictest inquiry, he could not find that any child or other person had conveyed it there."

The same may also be said of scarlet fever.

Hamilton on Hydrophobia, vol. ii.

Of the origin of hydrophobia and other morbid poisons, Dr. Hamilton logically remarks, "The same causes which formed it at first will form it a second time; and that which gave it birth a second time may equally produce it a third, a fourth, a fifth, and times innumerable."

The necessity of a knowledge of the comparative philosophy of *one* world before venturing on the giddy height of a *plurality*.

In the "Philosophical Remarks," it has been my intention to show the vast influence of the "Temperature of the seasons" over the human, animal, vegetable, mineral, and morbid kingdoms, of which changes at present we are in almost total ignorance; and thus comparing the *little* which we do know with the *immensity* which we do not know, I have ventured to infer the possibility, nay, the extreme probability, that the modern theories of man and creation are founded in our ignorance rather than our knowledge; and that the advancement of physical philosophy will remove such fertile sources of *illusion*, and "vindicate the ways of God to man."

It is remarkable, that while most authors on geology devote considerable space to the discus-

sion of the influence of aqueous and igneous causes, which operate changes on the earth's surface, the probable first physical cause of all these —the "temperature of the seasons"—is entirely disregarded, or treated as an inefficient agent. The Mosaic Theory of Light.

Here is a vast and boundless *hiatus*—the comparative philosophy of the whole animal, vegetable, mineral and morbid kingdoms, for six thousand years, almost totally unknown! Thus, for example, when we are informed that a very sound geologist has calculated that the coal series of Newcastle, with its accompanying *strata*, must have required for its production a period of at least 200,000 years—would any sober-minded individual believe that the causes, nature, and formation of coal are entirely unknown? Yet such is the fact. A mighty blank, which will require thousands of years and thousands of *true* philosophers to fill up. The Mackenzie river formation, rock salt also.

Primitive creation being given, with the relative temperature of the seasons,—to find out comparative philosophy, is a grand and mighty problem for *future ages*. A problem for modern philosophy.

Attending upon a patient labouring under symptoms of confirmed phthisis, I was led to examine the chemical properties of the urine, and found that it was almost entirely deficient in muriate of soda; whereas the urine of a healthy child, who ate no more salt than was contained in common food, afforded a considerable quantity of that salt. Struck with the simplicity of this fact,

I directed my attention to the subject: it was, therefore, with unfeigned pleasure that, in prosecuting the investigation, I found the foregoing strong collateral support in favour of my views;—the nature of the countries in which it occurs;—the very decisive experiments of Mr. Cruikshank;—the testimony of Drs. Robertson and Stevens, added to my own further observation and experiments;—the early sweetness of the blood and animal fibre, succeeded by a decomposition of the animal fluids generally, as manifested in the excretions;—the superabundance of phosphates, both in the urine, and also in tuberculous deposit;—the immunity of sailors from this disease, and, on the contrary, its frightful mortality in soldiers; its remarkable efficacy in preventing a somewhat similar disease in animals, sheep and swine especially;—all seemed to warrant the induction, that moisture is the cause, and saline dryness the prevention, of consumption. For whence does the blood derive its healthy saline character but from the food? And if from the food, then, other circumstances being the same, the quantity of salt will influence the saline character of the blood; and if a saline character of the blood be necessary to health, *then here we have an explanation of the action of salt.*

Salt diet *versus* fresh meat. Foot guards. Lord Somerville. Dr. Baron.

With me, the simple fact of its universal existence broadly argues its universal utility, more

Bodies Terrestial and Human.

forcibly than the "wordy din" of a legion of modern philosophers—the Anti-Moses men, the Homœopathists, the Animal-Magnetizers, or the Excito-Motory Theorists. And, without fear of logical contradiction, I venture to predict that, provided the annual consumption of salt per individual was just double what it now is in Great Britain, the bills of mortality would tell a tale, o'er which smiling humanity would *pore*, "as if increase of appetite did grow from what it fed on"—Philosophy.

So far, then, from being confined to the prevention of consumption, I believe it will be found equally effectual in the whole order of cachectic diseases; and what disease is not preceded by cachexy—the "aliorum medicamentorum medicamentum?" If, therefore, we cannot be sailors "on sea," let us, by the help of philosophy, avail ourselves of all their advantages "on shore." And as the mighty Greek derived his invulnerability from the goddess of the sea, so may the modern daughters of old Neptune impart a like invulnerability to disease to their children, and condescend to borrow wisdom even from mythology—the figurative *natural philosophy* of mankind, while as yet,

The author's opinion of ancient mythology, and of the wisdom of the Druids—Stonehenge, Isle of Mona, &c.

"Untaught by *man*,
Wild in his woods the noble savage ran."

Thus, then, stands the case:

On the one hand,

Cachexy—iron;—cough—bleeding;—hæmopthysis—nitre and digitalis;—hectic sweats—infusion of roses and acids;—diarrhœa—creta;—and the.....GRAVE.

On the other hand,

The *type* of spiritual incorruption, the *essence* of physical incorruption — *salt* — saline food—saline blood—saline urine—saline sweat—and .....HEALTH.

Such, gentle reader, is my humble protest against modern philosophy; such my plan for the general prevention of consumption.

20, *Clarges Street, Piccadilly,*
April, 1839.

THE END.

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