**On deafness and noises in the ear arising from rheumatism, gout, and neuralgic headache / by William Harvey.**




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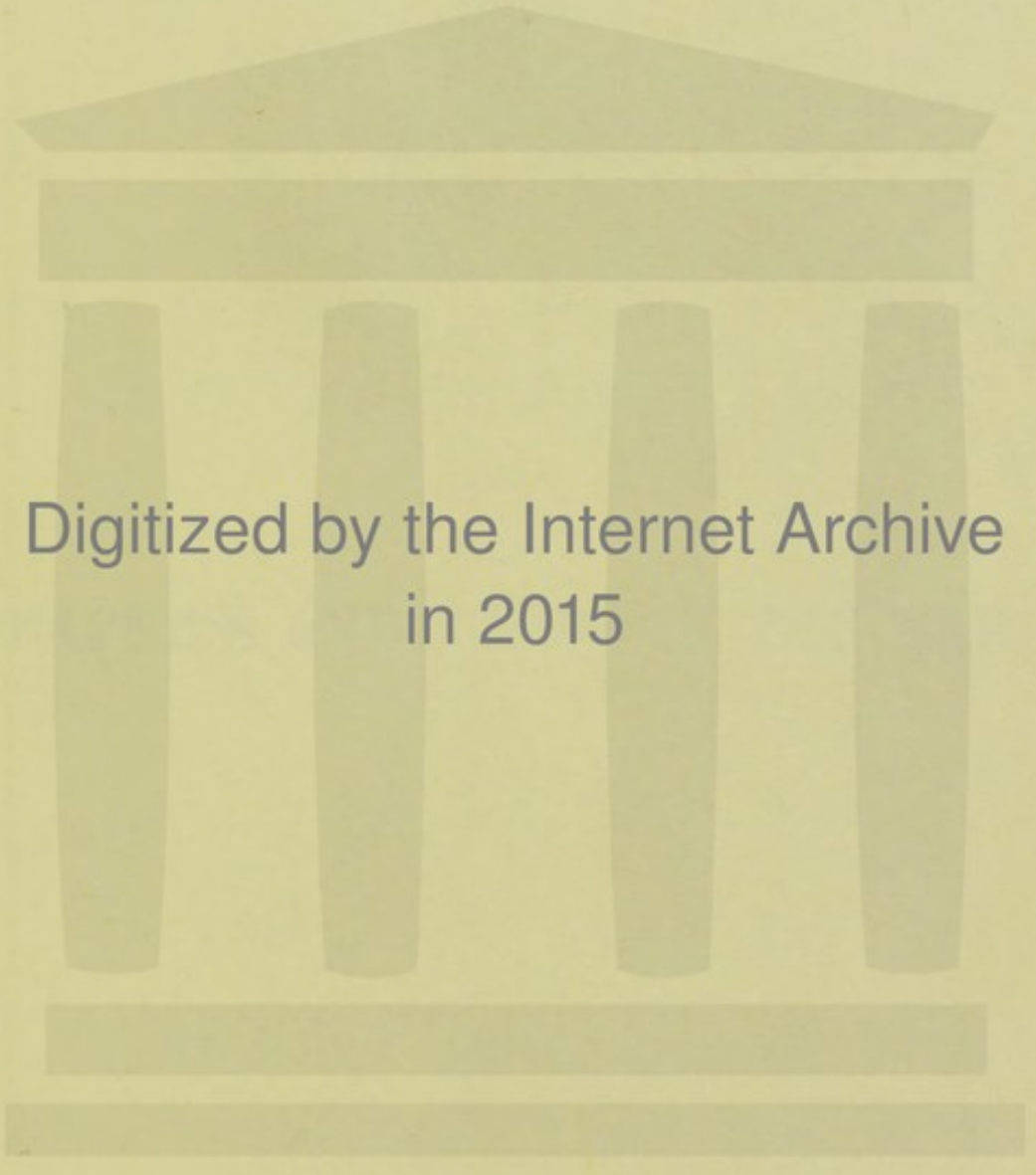

ON

# DEAFNESS AND NOISES IN THE EAR.

ON

# DEAFNESS AND NOISES IN THE EAR

ARISING FROM

# RHEUMATISM, GOUT,

AND

# NEURALGIC HEADACHE.

BY

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*SEVENTH EDITION.*

HENRY RENSHAW,
356, STRAND, LONDON.
1876.

LONDON :
SAVILL, EDWARDS AND CO., PRINTERS, CHANDOS STREET,
COVENT GARDEN.

# PREFACE.

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Among the causes and complications of deafness none are more common than gout and rheumatism, and those disturbances of the nervous system which issue in local pain without any palpable change of structure. The author of the following pages is not unwilling to confess, that, greatly to his surprise, he has found that many cases of deafness will recover, as it were, spontaneously, when appropriate treatment of the existing complication (as it has appeared to be, although it may be in reality the constitutional cause) has been systematically adopted and perseveringly followed out.

Not that it is at all intended to convey the idea that functional lesions only are amenable to constitutional treatment, for there are cases of actual disease in the external meatus, in the tympanum, and in certain parts of the Eustachian tube, which admit of relief, if not of absolute cure, by a steady, sustained, and properly directed course of medical treatment, and the entire removal of the deafness they had occasioned may be thus effected.

The author's design in the present treatise, is to trace the relations existing between the ear and its appendages, and those gouty, rheumatic, and neuralgic disorders of the parts about the head, face, and throat, which often complicate, sometimes cause, and too often protract indefinitely, that very afflictive condition—partial or total deafness.

In tracing the links of this ravelled chain of morbid actions, he has very frequently had occasion to observe that every form of disease treated of in this work has presented itself in one and the same case, but not always in the same order; that gouty cases often owe their violence to rheumatic action, resulting from exposure to cold; that rheumatism, on the other hand, is easily produced in a gouty subject, even when no gout actually exists at the time, and that neuralgic pains and deafness are both at hand ready to attack, even when they are not leading maladies, nor even present among the existing symptoms. The same may be said of headache and noises in the ears, neither of which are long absent when the case is severe or protracted. Yet again, in other cases, noise may exist without headache, or headache without noise, or deafness without either.

The author has, therefore, divided the treatise into three chapters, the first comprehending those cases where rheumatism is the prominent symptom, the

second relating to the gouty constitution, the third to the neuralgic or nervous.

The important point of all others, to which he would call the reader's attention, is that whenever deafness may be clearly traced to any of these morbid conditions of the system as a cause, then the method of treatment suggested in this volume may be relied upon with confidence. In fact, he has been much gratified in witnessing the relief which has often speedily followed the adoption of this simple treatment, the patient having been previously subjected to surgical manipulations, which not only inflicted a large amount of unnecessary pain, but in many instances aggravated the existing disease.

2, Soho Square.

# PREFACE

TO

# THE SEVENTH EDITION.

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The demand for another edition of this pamphlet has enabled the author to revise certain parts and to give some further illustrations. Additional experience has confirmed his views therein contained.

*October*, 1875.

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# ON DEAFNESS,

ETC.

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## CHAPTER I.

### RHEUMATISM AFFECTING THE STRUCTURES OF THE EAR AND HEAD.

The extremely variable nature of our climate renders rheumatism, in all its forms and complications, a disease of great prevalence throughout the length and breadth of the land. The degree to which it prevails can scarcely be estimated, for thousands suffer from it in its chronic form, if not without complaint, at least without seeking for professional assistance; as they give credit to the popular persuasion that chronic rheumatism is altogether irremediable. The mortality occasionally attendant upon the acute variety of rheumatism, when complicated by the extension of the inflammatory action to one or more of the principal internal organs of the body, is attested by daily experience, as well as by the weekly returns of the registrars of births and deaths within the bills of mortality.

Rheumatism, indeed, is to be met with throughout the world; in the hottest and the coldest climates men suffer from the effects of this widely-spread malady, and its extensive prevalence in this kingdom is a proof that temperate countries are quite as liable to the disease.

Few diseases are to be met with so frequently over the habitable globe, and which affect so many different structures of the human frame. The muscles, the tendinous and nervous structures, the sheaths of tendons, the joints, especially the larger ones, the fibrous bag enveloping the heart, the *scalp, and the muscles and pericranium covering the skull,* the membranes inside the skull covering and protecting the brain, the central organ of sensation and of thought, the brain itself, according to some authors, the heart, lungs, and kidneys, the stomach and bowels, especially their muscular coats, the eye, the *ear and head—the special subject of the present inquiries* —the spinal marrow and its membranes—all are, more or less, subject to the attacks of this painful disease, and to the alterations and changes it may cause: in fine, there seems scarcely a structure or organ appertaining to the human economy which may not either primarily or secondarily, be the seat of rheumatic disease, or be more or less modified thereby in its structure and actions.

This disease may, and does, act differently on

different persons and on different constitutions. In some it occurs as a rheumatic fever; in others it affects the muscles of the loins, and is called lumbago; in others, again, it attacks the sciatic nerve, and is termed sciatica; whilst in other cases, it seizes upon the larger joints, either in an acute or chronic form, causing all the symptoms of a specific inflammation. The tendons, being deprived of full power of play within their sheaths by the deposit of lymph, become thickened and impaired in their action; the ligaments are also more or less affected, and the joints themselves, when they have long been the seat of rheumatic inflammation, become more or less extensively diseased, even to the formation of matter in their cavities. The muscles and fibrous structures, when attacked by this disease, then called muscular rheumatism, may be spontaneously cured by what is termed the process of resolution, that is, by the entire disappearance of the disease; or it may recur from time to time; or, again, it may leave constant evidence of its existence, in the shape of flying pains and local weakness, attended sooner or later with crippling of the limbs, a contracted condition of the tendons, and stiffness of the joints, with a greater or less degree of paralysis of the motor and sensitive nerves, or, in very rare cases, with suppuration extending between the fibres of the muscles principally affected.

But it is among the more important internal organs

of the body that its most dangerous effects are to be sought for. In the very acute inflammatory attacks affecting the joints and muscles, we may expect to find, a few days after the disease has shown itself in a violent form, evidence of its extension to the heart and its enveloping membrane, by what is termed metastasis, or change of place in the action of the disease. This process is repeatedly exemplified in the progress of the disease under our especial notice; and there are few, if any, diseases in which metastasis takes place so readily and so frequently as in rheumatism, unless it be its allied malady, gout.

This slight sketch of the disease, as to its diffusion throughout the world, the very large portion of the human body liable to its attacks, and the very severe consequences which are involved, will suffice to assert its claims to the utmost attention of the medical practitioner, whether he consider it as affecting so many parts of the frame, or regard it as a special disease, involving one particular portion, such as the joints, the eye, *the ear*, the scalp, head, etc. Nor is there any part of the body in which it is more painfully afflictive, or more easily overlooked or mistaken, than in the complicated structures of which we are about to treat. The author trusts that the many opportunities afforded him, in the practice of the Royal Dispensary for Diseases of the Ear, will justify his venturing to call special attention to the subject.

## Section I.

### SYMPTOMS OF RHEUMATIC INFLAMMATION OF THE EAR.

It is but seldom that rheumatism of the ear or its appendages presents itself to the practitioner as a primary disease. The ear in general does not seem to be implicated until after the subsidence of the rheumatic affection of the joints, and sometimes even not until convalescence is somewhat advanced. The patient, after suffering for a longer or shorter time from the usual symptoms indicating a rheumatic attack affecting the larger joints, whether it be or be not the first time that he labours under that disease, begins to suffer from some undefined, unaccustomed sensations about one side of the head. The scalp generally is tender, and sometimes exceedingly painful on pressure, even on the slightest touch of the comb or brush to the hair. The temple on that side, all the parts about the ear, the mastoid process, the neighbouring portion of the cheek, and even the teeth, are the seat of a morbid sensation, with considerable pain; and the patient complains also of a deep, heavy noise in the ear, of a most distressing character. Occasionally the hair falls off, and the patient becomes bald. On making an examination of the ear, the lining membrane of the meatus, and

the membrane of the tympanum, are found to be swollen and inflamed, and the latter has lost its transparency. Of course the sense of hearing is more or less impaired. The throat on the same side partakes of the disease; the neighbouring textures are swollen, and of a livid red colour, the inflammation extending up the Eustachian tube. The tonsil on the same side is engaged in the inflammation, causing, with the aid of the diseased condition of the other structures of the throat, considerable pain and difficulty in swallowing. The patient, while suffering from this rheumatic attack, as a matter of course, presents all the symptoms of febrile excitement, the intermission, however, being in some cases so well marked as to cause the fever to resemble an ague. I was consulted in the summer of 1856, on the case of a young female, whose symptoms were those of quotidian ague, which had continued for ten days, previously to which she had suffered from a severe attack of rheumatic fever. The cause of the ague was not suspected until the ear became painful, as there were no local circumstances to account for it; but, upon examining the mastoid process, it was found much swollen, very tender, and the patient complained of pain and throbbing in the bone. No doubt being entertained of the existence of an abscess, an incision was made down to the bone, followed by a free discharge of offensive purulent matter, and *an imme-*

*diate termination of all the aguish symptoms.* Dr. Griffin, of Dublin, relates a similar case, confirming the somewhat novel doctrine, that ague may depend upon a local abscess. And, as a corollary, may we not suspect that rheumatism and ague, both depending upon miasmatic influences, may also be the results of one and the same poison, which in the above case was eliminated by suppuration? Exacerbation of all the symptoms takes place towards night, as usually occurs in disease of a rheumatic origin.

*Case.*—A young man, who had previously enjoyed very good health, complained of pain in the left side of the head, attended by rigors. At first these paroxysms were rather irregular, but they very soon assumed the form of tertian ague, coming on every other day, at the same hour. The cold stage began about noon, lasting about half an hour; a feverish stage of somewhat longer duration then ensued, which was followed by a profuse sweat. In the intermissions, the pain in the head was not complained of; there was neither thirst nor heat of skin, but constant wakefulness; the patient could not sleep. A tumour was now observed behind the ear on the left side; this was opened, and a very large quantity of brownish and extremely offensive pus sprang out with very great force, giving considerable relief.

*Case.*—John Good applied at the Dispensary on account of a discharge from his right ear, which had

existed for twelve years. He was suddenly seized, after his attendance at the Dispensary, with acute rheumatism; it soon affected the head and ear, and although very active treatment was adopted, the periosteum speedily became involved in the disease, and ultimately caries of the bone occurred. This case shows how long a period a discharge may exist without danger; but it also forewarns us how much there is to be apprehended when any accidental seizure takes place, and how rapidly the bone may be destroyed.

The neighbouring organ—the eye—is sometimes inflamed before the ear is attacked, sometimes contemporaneously with it, and sometimes not until after the disease of the organ of hearing has made some progress.

When *influenza* assumes an epidemic character, there are some peculiarities connected with its course which are worthy of notice in this place. When influenza sets in during the autumn or winter months, the affection of the throat frequently exhibits a rheumatic character, and the structures of the ear are particularly subject to its aggression; the membrane becomes sometimes dry, sometimes granular; this appearance is continued up to the internal lining of the tympanum, after having produced a thickening of the sides of the pharynx, and frequently enlargement of the tonsil. The same consequences are observed

to take place in the scalp and pericranium. But as the seizure is sometimes attended with a weakened condition of the constitution and great debility, we are precluded from treating it actively. The author has also known inflammation of the ear to occur, and sometimes abscesses to form in the glandular system of the throat, more frequently in the glands of the neck, producing great pain over the head, with tenderness of the pericranium, accompanied by catarrhal and bronchial irritation in a subacute form. When the patient experiences a discharge from the nostrils, and soreness of the throat, accompanied with cough, and painful noises in the ears on one or both sides, then great attention is more particularly required.

The condition now described is attended with considerable dulness of hearing; it may occur suddenly, or come on very gradually, during the course of the influenza attack; it may affect one or both ears, until it arrives at so high a degree as to occasion considerable inconvenience to the patient. It may so happen that one ear only suffers, the other not participating in the diseased action. Noises in the ears are present during the whole course of the disease, and often continue to distress and harass the patient for some time after convalescence. This symptom, however, does not necessarily indicate any serious or unfavourable change in the structure of the organ; it may be referable to chronic inflammation

about the fauces and soft palate, which are swollen, the uvula and tonsils are considerably enlarged; and, therefore, needless and officious syringing should be avoided; should the discharge from the nostrils and cough continue, a judicious course of fumigation will generally succeed in relieving it.

*Case.*—Miss ——, who consulted me for some dulness of hearing on both sides, particularly on the right, stated that in the winter she had been seized with influenza, accompanied with rheumatism of the right side of the neck and shoulder. I saw this lady one month after the attack; she then complained of deafness on the left side; on the right, a mucous discharge; of uneasiness about the throat and nose, loss of smell and taste, and towards evening of some increase of pain in the head, over the brow, and constant noises in the ears; the throat appeared inflamed, and the tonsil enlarged on one side; the noises always increasing towards evening. This lady was directed to pursue a method of treatment consisting of quinine and guaiacum tincture daily, with occasional vapour bathing, the skin being dry, and having a scaly eruption over it, and to gargle the throat occasionally with an astringent gargle. This was continued for some time with the effect of reducing the tonsil, and relieving the inflamed mucous membrane of the throat. The noises above mentioned, and which were extremely annoying,

gradually subsided as her health improved. I may here remark that this lady had suffered from noises in the head, particularly after rheumatic attacks, but no deafness until after the attack of influenza.

During the progress of an attack of influenza, the early symptoms affecting the ear should be attended to; as I have before observed, I have known the attack to be attended with ear-ache and glandular enlargement of the throat, and other well-marked symptoms of ear disease; the ear becomes early affected with noises, the catarrhal affections of the throat extending towards the Eustachian tube, involve the tympanum, and produce the inconvenient discharge from the nose, which is early affected with this diseased action. The treatment in most cases should be chiefly directed towards improving the condition of the constitution. I know of nothing equalling in its power the guaiacum, combined with bark or otherwise; the disease is tedious, and is liable to relapse from time to time.

In some cases the loss of taste and smell is an early symptom, accompanied with deafness. Taste and smell generally are combined, but if we use taste in the popular sense, it is easy to understand how a disease, which is not sufficiently violent to do serious mischief to the anterior brain generally, may still suffice to affect the olfactory nerves, owing to their very small size, and their excessive softness.

It will have been noticed that in most cases the patient complains of having lost taste as well as smell, there being no difficulty in recognising either acid, bitter, sweet, or saline. Pure taste is limited to the perception of these few qualities; and any additional perceptions other than tactile which food may give us, are derived not from taste, but from the much wider sense of smell, and are due to irritation of the olfactory nerves. We are so accustomed to the combination of simultaneous gustatory and olfactory impressions that we have come to look on the two as one, and, in popular language, have confused them together. But disease splits this compound sensation of flavour into its constituents, and leaves the olfactory or the gustatory element to stand by itself, according as the latter or the former set of nerves have been injured. So much larger a share of the compound is due to smell than to taste, that when a man has lost the former he thinks, as in these cases, that he has lost both; whereas, if smell remain, and true taste alone be lost—as sometimes occurs—the patient is almost regardless of his changed condition.

This inquiry into the organ of smell has only interest for the student; the general reader must pardon its introduction—a pardon he can the more easily grant, since he has probably skipped the paragraphs devoted to the inquiry. Enough, then, if we know that the mucous membrane lining the upper cavity of

the nose is the *seat* of smell; and as this part is also furnished with filaments from the fifth pair of nerves, we may conclude that these can serve the function of smell as their fellows can serve the function of taste.

The odorous substances are very numerous; but it is indispensable that they should be in a gaseous or volatile condition before they can excite the sensation of smell. Musk itself, powerful as is its odoriferous property, would produce no sensation on the olfactory organ, if applied to it in a solid state; nor can liquids produce odours till they evaporate. Our distinguished chemist, Mr. Graham, contributes the following valuable note to Mr. Bain's work on the "Senses and the Intellect:"—

"Odorous substances are in general such as can be readily acted on by oxygen. For example, sulphuretted hydrogen, one of the most intense of odours, is rapidly decomposed in the air by the action of the oxygen of the atmosphere. In like manner, the odorous hydrocarbons are all oxydisable—the ethers, alcohol, and the essential oils that make aromatic perfumes. The gases that have no smell are not acted on by oxygen at ordinary temperatures. The marsh gas, carburetted hydrogen, is a remarkable case in point. This gas has no smell. As a proof of the absence of the oxydisable property, Professor Graham has obtained a quantity of the gas from the deep mines where it had lain for geological ages, and has

found it actually mixed up with free oxygen, which would not have been possible if there had been the smallest tendency for the two to combine. Again, hydrogen has no smell, if obtained in the proper circumstances; now the gas, although combining with oxygen at a sufficiently high temperature, does not combine at any temperature endurable by human tissues. It is further determined, that unless a stream of air containing oxygen pass into the cavities of the nostrils along with the odoriferous effluvium, no smell is produced. Also, if a current of carbonic acid accompanies an odour, the effect is arrested. These facts go to prove that there is a chemical action at work in smell, and that this action consists in the combination of the oxygen of the air with the odorous substances."*

In few things do human beings differ more widely than in their sense of smell; not only is the acuteness of this sense markedly different in different men, but of twenty men, having average susceptibility, perhaps no two will be found to agree in considering the same odours agreeable. Musk is very notoriously offensive to many persons; others do not like mignonette; some do not recognise any odour at all in a flower considered very odorous by others.

I am indebted to the writings of Dr. Andrew

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* Bain, "The Senses and the Intellect," p. 163.

Clarke for the following observations on the naso-palatine gland disease, which is often associated with rheumatism and gout in the system :—

"These glands are not unfrequently the seats of morbid changes, which cause great trouble to the subjects of them. The first of these changes is the production of an excessive quantity of viscid mucus; the second, the formation and discharge of a pus-like fluid; and the third is the retention of either of the foregoing in the cavities of the glands, and its conversion into fœtid, cheesy masses, which are from time to time extruded through the nose or mouth.

"The presence of this naso-palatine gland disease may be inferred from the following symptoms:— Discomfort, aching, or pain in the neighbourhood of the soft palate and posterior nares; tingling or sense of fulness about the root of the nose; frontal head-ache; a mawkish or fœtid taste in the back of the mouth; a thick mucous, purulent, or cheesy secretion discharged at intervals, chiefly through the mouth, by means of snorting nasal inspirations, followed by hawking, slight perversions of taste and smell; alterations of voice; sometimes temporary deafness, from obstruction of one or both Eustachian tubes; and abundant secretion of wax in the external ear. But the presence of this disease can be demonstrated only by rhinoscopic examination.

"All the observations that I have hitherto made warrant me in saying that 'throat deafness' is more frequently due to this disease than to enlargement of the tonsil.

"Naso-palatine gland disease is difficult to cure. I have tried many plans of treatment with varying success. The one which in my hands has answered the best is as follows:—The naso-pharyngeal membrane is irrigated with a solution of chlorate of potash several times daily for a week; then a very strong solution of nitrate of silver is applied to the naso-palatine surface by means of a brush, fastened to a properly bent handle, and the application repeated two or three times at intervals of two or three days; and lastly, the nose and throat are again irrigated by a weak solution of tannic acid or alum. The addition of creosote increases the efficacy of the astringent lotions, but makes them much more disagreeable. In beginning their use, it is a point of practical importance that they should be very weak; when necessary to increase their strength, it should be done slowly and by small degrees.

"Irrigation is done by putting the nostrils under the surface of the irrigating fluid, and drawing it through the posterior nares into the mouth. In this way the remedial agent is brought into direct contact with the diseased surface. The operation, difficult to perform at first, and, when performed, painful, soon

ceases to be in any way a trouble to the patient. I regret to have to add, that in ordinary cases I have found no benefit from constitutional treatment. It is otherwise with the enlarged tonsil, which sometimes resumes its normal condition under the influence of iodide or bromide of potassium, iron and alkalies, when local applications alone are unsuccessful." But I may here repeat, that steaming or fumigating has, in my experience, the most beneficial influence on this troublesome affection.

There are few who have not at some time or other experienced the discomfort and inconvenience of inability to breathe through the nose. A large class of persons will be found permanently subject to this annoyance; and a much greater amount of evil arises from such a condition than has hitherto been imagined. The obstruction depends on chronic inflammation or thickening of the mucous surface, which throughout the windings of the nasal cavities and passages, goes by the name of the *pituitary*, *Schneiderian*, or *olfactory* membrane. It often exists to such an extent as to block up the passage of the nose entirely; and thus obstructs the principal channel through which respiration is, or ought to be, performed, as well as impedes the performance of various other functions, which will presently be adverted to. Owing to the great difference in the calibre of the nasal passages in different persons, it happens that in some the slightest

tumefaction will cause obstruction, while in others their calibre is so large that it may exist to a great extent without producing inconvenience.

This kind of diffuse enlargement of the mucous membrane, throughout all the convolutions and cavities of the nose, obstructs the passage quite as much as the presence of polypi.

Persons thus troubled are obliged at all times to keep their lips apart, or their mouth open, to enable them to breathe, and in time the features acquire a contracted and vacuitous expression, even in the most intelligent. As the mouth often closes involuntarily in sleep, the impediment to breathing becomes a frequent cause of broken and disturbed sleep, in the same manner as I have described when adverting to the effects of enlarged tonsils in this particular. This is especially the case in children. Cases are frequent in which they have a thickening of the nasal membrane to such an extent, that although it does not produce entire stoppage, yet the impediment is increased so as to render it complete on the slightest accession of cold. Here the trouble to the breathing, especially in attempts to sleep, becomes quite as distressing as when the tonsils are seriously enlarged.

The voice also becomes much affected, the back part of the nasal passage being converted into a shut chamber, by which the sounds produced in the mouth and throat acquire a nasal resonance and timbre,

which make the voice more distorted than even enlarged tonsils. Owing to the want of a passage for the breath behind the soft palate, and through the nose, there is in some cases of this kind a great difficulty in pronouncing the letters which the movements of the soft palate are concerned in producing. It is, in short, of essential importance to a proper method of speech, that the air should have free ingress and egress through the nose.

For the same reason there is generally experienced a difficulty in hawking mucus from the back of the throat and the posterior nares. Expectoration cannot be properly and freely performed. From the same cause, also, there is frequently a difficulty and even an impossibility of blowing the nose, which is excessively inconvenient and disagreeable.

The effects of this kind of obstruction to the sense of smell are very perceptible. Without the power of inspiring through the nose we lose in great measure the capability of drawing odorous particles within the sphere of the olfactory nerve. In addition to the difficulty thus occasioned, it is certain that a tolerably healthy state of the mucous membrane is necessary for the proper exercise of the sense. Common catarrh may be taken as an instance, in which the obstruction caused by the swelling of the mucous surface, and the alteration in the secretion from the nasal, or Schneiderian membrane, either blunts or temporarily destroys

the olfactory sense. Those in whom the nose is permanently obstructed by thickening of the mucous membrane are much in the same situation, as in addition to the simple obstruction, the secretion of mucus is generally disordered either by excess or deficiency.

"I have treated many cases in which deafness appeared to depend on the nasal obstruction only, where the affection of the mucous membrane extended into the ears. This induced me to seek for the cause which could produce such an effect, and I am come to the conclusion that *a free state of the nasal passages is of great importance to the acuteness and preservation of hearing.*"*

It is generally acknowledged that the presence of air is necessary in the tympanum, and also that the air should not differ greatly in temperature from the air on the external surface of the membrane of the drum. The means by which these requirements are provided for are well known to be the Eustachian tube; but I believe, in addition to this, a free state of the nasal passage is a necessary auxiliary, and that without it the function of the Eustachian canal cannot be properly performed.

This view is supported by the anatomical position of the mouth of the tube, which points towards the external nasal aperture, and is directly in the line of

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* Yearsley, "On Deafness."

the passage of air through the nose both in inspiration and expiration; further, the trumpet-shaped extremity of the tube, and its direction obliquely backwards to reach the middle ear, favours, and appears to provide for, the entrance of air to the tympanum in inspiration rather than in expiration.

It is not that simple stoppage of the nasal passages can cause deafness, because the nose may be closed without producing the slightest immediate effect on hearing; but I consider that when it is permanently obstructed, the want of a free circulation of air in the tympanum lessens the sensibility and acuteness of the auditory organ, or favours the accumulation of mucus in the middle ear. By examining my own sensations in ordinary expiration, I believe that air does not enter the tympanum during this act, but passes out from the ear with the expiratory stream of air escaping from the nostrils.

In a sudden and forcible respiration, when a greater quantity of air is attempted to be expelled than can find a ready exit, it happens differently: it then regurgitates, and rushes into the Eustachian tube and tympanum with great force, and can be felt to strike against the drum, or heard escape through the external meatus in cases where the *membrana tympani* is perforated. The same occurs in yawning, in which, although the expiration is prolonged, it is more forcible than usual. In yawning, the greatest effect of this kind is

produced when the act is performed in a subdued manner with the mouth nearly or entirely closed. Air enters the Eustachian tube and middle ear to a still greater extent in sneezing, an act in which the communication between the air tubes and the mouth is sometimes shut off by closure of the palatine arches, so that the breath passes upwards, and escapes by the nostrils alone. There is in sneezing, also, a violent preliminary inspiration, which generally drives air up the Eustachian tubes with considerable force.

Hence it occurs that yawning and sneezing are occasionally the means of curing deafness, dependent on obstruction of the passages leading from the posterior nares to the ear, the sudden rush of air breaking up and expelling any inspissated mucus that may have accumulated therein. In many cases of deafness, also, which do not arise from obstruction, it is remarkable that sneezing and yawning frequently occasion temporary benefit, and improve the hearing.

"*Treatment of Obstruction of the Nose.*—Before my attention became especially directed to the subject, I was accustomed to depend on medical treatment alone for the removal of nasal obstructions; acting in this in accordance with the principles laid down in the medical treatment of enlarged tonsils. This plan was, and is, often of great service in dissipating the tumefied state of the mucous membrane; but from observing the great amount of comfort and benefit

which occurred from passing the Eustachian-tube catheter, in cases where the malady was complicated with deafness, I was led to adopt an instrument fitted more particularly for freeing and enlarging the passages of the nose. At first I used the catheter for this purpose, but soon found it advisable to have a new instrument, straight, to avoid the curve which exists in the catheter, and flexible, to accommodate itself to any sinuosities of the passages. This shape and material fit the elastic probe for passing readily along the floor of the nostrils, without occasioning the slightest inconvenience, and without difficulty.

"The effects of this instrument have answered my most sanguine expectations. It has relieved a large number of cases, to whom other kinds of treatment would have been ill-suited and inefficacious. The majority of them were cases of simple obstruction; but it has also proved of essential service in cases of deafness, complicated with thickening of the mucous membrane. The passing of the probe once or twice a day soon dilates the canal to such a size as to permit the passage of air to and fro; and, in addition to this, it appears to exert a salutary influence on the tract of mucous membrane extending to the ear."

In some individuals, the *septum narium* is inclined so much to one side, without any external disfigurement, that it is impossible to breathe, or to pass the probe through the contracted aperture. Where this

is the case, the operation should never be attempted; and there is rarely any cause for it in cases of this kind, because of the increased size of the opposite passage. There are other cases, however, in which the nostrils and nasal canals are congenitally of small size, where the elastic probe, or any instrument capable of gradually dilating them, will be very beneficial.

Little, if any, instruction is required to enable a patient to manipulate upon himself. The following directions, however, will serve to elucidate the subject:—

*Mode of using the Naso-guttural Probe.*—Until expertness is acquired, the patient should place himself before a glass, holding the instrument between the finger and thumb. He then introduces it into the nasal opening, in an *horizontal* direction. Being once inserted, the slightest force will cause it to glide along the floor of the nostril uninterruptedly, until its extremity strikes against the back of the throat, the sensation of which is instantly distinguished by the patient. Here it should be allowed to remain a few seconds, and then gradually withdrawn, to be introduced in a similar manner along the opposite nostril. The operation should be followed by blowing the nose until the passages are free to admit the ingress and egress of air to and from the lungs.

I am extremely unwilling that the instrument should

be supposed to be vested with greater powers than it in reality possesses; but I am bound to express my conviction, the result of careful observation and experience, that in many cases of deafness, by producing a healthy action in the mucous membrane, and causing a free circulation of air in the middle ear through the Eustachian tubes, it will be found not only the means of warding off an increase of the disorder, but in many cases the means of essential relief or cure.

When it is recollected how many thousands of cases of deafness, proved to be irremediable by ordinary means, are rapidly approaching by almost imperceptible gradations towards total deafness, the importance of any remedy which affords even a chance of arresting the disorder, still more of ameliorating or curing it altogether, will be duly estimated. One or other of these results will, I have little hesitation in saying, frequently, very frequently, follow the employment of the instrument in question. This is not its only advantage, as it proves, as I have said, of much service, by removing the obstruction to the voice, smell, and respiration, and is beneficial in other minor points.

I am in the habit of recommending an elastic tube and bottle, for the purpose of washing the back part of the nares, the upper part of the throat, and the mouths of the Eustachian tubes. In a tumid state of

the mucous membrane in these situations, it is of great importance to apply astringents, or whatever else may be employed, to the parts immediately affected. This is very imperfectly done in the usual method of gargling, especially when the posterior nares and mouths of the Eustachian tubes are intended to be acted upon. The action of the veil of the palate in most cases effectually prevents the gargle from reaching its destination. With the elastic tube and bottle, this can be done with the utmost certainty, and in cases where deafness is occasioned by tumidity of the mouths of the Eustachian canals, with the most satisfactory results, cleansing away the vitiated secretion of mucus, and reducing the membrane to its proper condition, and thus enlarging the calibre of the tubes.

The apparatus is composed of a caoutchouc bottle for the reception of the gargling fluid, and of an elastic tube to convey the fluid across the floor of the nostril to the mouth of the canal.

*Mode of using the Elastic Tube and Bottle.*—Being first sure of the permeability of the tube, and then attaching it to the bottle (the latter charged with the injecting fluid), the tube is introduced along the nostril in the same manner as the elastic probe. Before pressure is exercised upon the bottle, it is necessary to withdraw slightly the extremity of the tube from the back of the throat, to admit of the fluid being ex-

pelled; or the contents of the bottle may be squeezed out during the act of withdrawing the instrument, whereby not only the throat and adjacent parts, but the nasal passages also, become well washed by the injection.

During the first two or three times of passing both the elastic nasal probe and the tube, slight titillation of the nostril is produced, and sometimes the eyes become suffused with water for a few moments, but this is the only inconvenience which the operation (if such it deserves to be called) can occasion.

If the facility of washing the throat through the nose were known, it would not be long before it would become a general practice; for it is very certain that gargling the throat through the mouth, though so frequently recommended, is but rarely accomplished. Owing to the action of the veil of the palate, the gargling fluid is confined to the cavity of the mouth, and rarely enters the throat at all.

*Topical Applications.*—The chief local remedies which have been recommended in throat affections, are the different kinds of gargles. In this country they have consisted principally of solutions of astringent or stimulating substances. On the Continent they have been a much more favourite remedy, and a larger number of medicinal substances have been applied in this manner. In the work of Calombat on the voice, under the head of sore throat,

we have a list of gargarisms recommended, under the heads of acid, tonic, styptic, irritant, antiscorbutic, antisyphilitic, antiscrofulous, &c. The common astringent gargle, composed of alum and infusion of roses, is, I believe, the only one of much value; but even to this a greater merit than is due has been accorded. The hot stimulating gargle of cayenne is decidedly improper.

Gargles might, with much more propriety, be spoken of as applications to the *mouth* rather than to the *throat*. Many of those who prescribe, and those who use them, fall into a mistake which I have never seen noticed, but which a little reflection would correct. If we examine ourselves as to what takes place in "gargling," we shall find that the fluid fills the back of the mouth, but that the veil of the palate and the dorsum of the tongue entirely prevent the entry of the fluid into the throat. The noise is made by the rapid expulsion of bubbles of air through the fluid held in the mouth; but though the aperture of the fauces permits the breath to pass up through it, the vibration of the pendulous palate is so peculiar that none of the liquid passes down. After the most careful gargling, we shall find we have only wetted the mouth and the anterior surface of the soft palate and uvula, the parts behind these remain untouched. Thus the common and professional notion of gargling is clearly an error.

"*Gargling the throat,*" as usually employed, is a phrase as wide of the truth as "*speaking through the nose.*"

Fumigations and vapours, in throat disease, in many cases are preferable to gargles.

In some cases, a plan I have devised will be still more useful—namely, that of passing medicated fluids into the throat through the nose, by means of a tube and elastic bottle. One great advantage of this plan is, that we can thus apply astringents, &c., to the upper part of the tonsils, which in the morbid state so frequently implicate the Eustachian tubes, and produce deafness. We can also thus reach the posterior surface of the uvula, which is far more sensitive and important than the anterior part.

In some cases it is preferable to apply the remedies in substance to the parts requiring them, as, for instance, when we wish to use them in a more concentrated state than would be convenient in solution. In irritable conditions of the uvula and soft palate, producing the harassing cough which is known by the term *throat-cough*, or, as it might be more correctly termed, *uvula-cough*, relief may often be obtained by blowing a small quantity of powdered alum, through a quill, upon the parts themselves, or of putting the dry powder on the uvula and fauces by means of a camel-hair brush.

This irritable state of the throat is sometimes relievable in children by sucking astringent lozenges, or by letting a little honey and borax dissolve in the mouth. Either of these means is more direct in its action than the use of a gargle.

"Man's cares and fatigues of the day become a daily disease, for which quiet sleep is the cure; and the All-wise Creator has so constructed him that his breathing lungs support him through that sleep, like a perfect machine, regulating the digestion of the stomach and the circulation of the blood, and carrying repose and rest to the utmost extremity of every limb; and for the protection and healthy working of this machine through the hours of repose He has formed him with *nostrils* intended for measuring and tempering the air that feeds this moving principle and fountain of life; and in proportion as the quieting and restoring influence of the lungs in natural repose is carried to every limb and every organ, so in *unnatural* and *abused* repose do they send their complaints to the extremities of the system, in various diseases; and under continued abuse fall to pieces themselves, carrying inevitable destruction of the fabric with them in their decay.

"The two great and primary phases in life, and mutually dependent on each other, are *waking* and *sleeping*, and the abuse of either is sure to interfere with the other. For the first of these there needs a

lifetime of teaching and practice; but for the enjoyment of the latter man needs no teaching, provided the regulations of the All-wise Maker and Teacher can have their way, and are not contravened by pernicious habits or erroneous teaching.

"If man's unconscious existence for nearly one-third of the hours of his breathing life depends, from one moment to another, upon the air that passes through his nostrils; and his repose during those hours, and his bodily health and enjoyment between them, depend upon the soothed and tempered character of the currents that are passed through his nose to his lungs, how mysteriously intricate in its construction and important in its functions is that feature, and how disastrous may be the omission in education which sanctions a departure from the full and natural use of this wise arrangement!

"There is no animal in nature, excepting man, that sleeps with the mouth open; and with mankind I believe the habit, which is not natural, is generally confined to civilized communities, where he is nurtured and raised amidst enervating luxuries and unnatural warmth, where the habit is easily contracted, but carried and practised with great danger to life in different latitudes and different climates; and in sudden changes of temperature even in his own house.

"The physical conformation of man alone affords

sufficient proof that this is a habit against instinct, and that he was made, like the other animals, to sleep with his mouth shut—supplying the lungs with vital air through the nostrils, the natural channels; and a strong corroboration of this fact is to be met with amongst the North American Indians, who strictly adhere to Nature's law in this respect, and show the beneficial results in their fine and manly forms, and exemption from mental and physical diseases, as has been stated.

"The Savage infant, like the offspring of the brute, breathing the natural and wholesome air, generally from instinct, closes its mouth during its sleep; and in all cases of exception the mother rigidly (and *cruelly*, if necessary) enforces Nature's Law in the manner explained, until the habit is fixed for life, of the importance of which she seems to be perfectly well aware. But when we turn to civilized life, with all its comforts, its luxuries, its science, and its medical skill, our pity is enlisted for the tender germs of humanity, brought forth and caressed in smothered atmospheres which they can only breathe with their mouths wide open, and nurtured with too much thoughtlessness to prevent their contracting a habit which is to shorten their days with the croup in infancy, or to turn their brains to Idiocy or Lunacy, and their spines to curvatures—or in manhood, their sleep to fatigue and the night-

mare, and their lungs and their lives to premature decay."*

If the habit of sleeping with the mouth open is so destructive to the human constitution, and is caused by sleeping in confined and overheated air, and this under the imprudent sanction of mothers, they become the primary causes of the misery of their own offspring, and to them chiefly the world must look for the correction of the error, and, consequently, the benefaction of mankind. They should first be made acquainted with the fact that their infants do not require heated air, and that they had better sleep with their heads out of the window than under their mother's arms; that middle-aged and old people require more warmth than children, and that to embrace their infants in their arms in their sleep during the night is to subject them to the heat of

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* The weekly bills of mortality in London show an amount of 10, 15, and sometimes 20 deaths of infants per week, from suffocation in bed with their parents; and Mr. Wakley, in May, 1860, in an inquest on an infant, stated that "he had held inquests over more than 100 infants which had died during the past winter from the same cause, their parents covering them entirely over, compelling them to breathe their own breath."—*Times.*

The Registrar-General shows an average of over 700,000 infants born in England per annum, and over 100,000 which die under one year of age—12,738 of these of bronchitis, 3660 from the pains of teething, and 19,000 of convulsions; and says, "suffocation in bed, by overlaying or shutting off the air from the child, is the most frequent cause of violent deaths of children in England."

their own bodies, added to that of feather beds and overheated rooms.

There are many, of course, in all ranks and grades of society who escape from contracting this early and dangerous habit, and others who commence it in childhood, or in manhood, a very few of whom live and suffer under it to old age with constitutions sufficiently strong to support Nature in her desperate and continuous struggle against abuse.

When we observe amongst very aged persons that they almost uniformly close the mouth firmly, we are regarding the results of a long-practised and healthy habit, and the surviving few who have thereby escaped the fatal consequences of the evil practice I am condemning.

Though the majority of civilized people are more or less addicted to the habit I am speaking of, comparatively few will admit that they are subject to it. They go to sleep and awake with their mouths shut, not knowing that the insidious enemy, like the deadly Vampire that imperceptibly sucks the blood, gently steals upon them in their sleep, and does its work of death whilst they are unconscious of the evil.

Few people can be convinced that they snore in their sleep, for the snoring is stopped when they awake; and so with breathing through the mouth, which is generally the cause of snoring—the moment

that consciousness arrives the mouth is closed, and Nature resumes her usual course.

In natural and refreshing sleep man breathes but little air, his pulse is low, and in the most perfect state of repose he almost ceases to exist. This is necessary, and most wisely ordered, that his lungs, as well as his limbs, may rest from the labour and excitements of the day.

Too much sleep is often said to be destructive to health; but very few persons will sleep too much for their health, provided they sleep in the right way. Unnatural sleep, which is irritating to the lungs and the nervous system, fails to afford that rest which sleep was intended to give, and the longer one lies in it the less will be the enjoyment and length of his life. Any one waking in the morning at his usual hour of rising, and finding by the dryness of his mouth that he has been sleeping with the mouth open, feels fatigued and a wish to go to sleep again; and, convinced that his rest has not been good, he is ready to admit the truth of the statement above made.

There is no perfect sleep for man or brute with the mouth open: it is unnatural, and a strain upon the lungs which the expression of the countenance and the nervous excitement plainly show.

Nothing is more certain than that for the preservation of human health and life, that most mysterious and incomprehensible self-acting principle of life

which supports us through the restoring and unconscious vale of sleep, should be protected and aided in every way which Nature has prepared for the purpose, and not abused and deranged by forcing the means of its support through a different channel.

We are told that "the breath of life was breathed into man's nostrils"—then why should he not *continue* to live by breathing it in the same manner?

The mouth of man, as well as that of the brutes, was made for the reception and mastication of food for the stomach, and other purposes; but the nostrils, with their delicate and fibrous linings for purifying and warming the air in its passage, have been mysteriously constructed, and designed to stand guard over the lungs—to measure the air and equalize its draughts, during the hours of repose.

The atmosphere is nowhere pure enough for man's breathing until it has passed this mysterious refining process; and therefore the imprudence and danger of admitting it an unnatural way, in double quantities, upon the lungs, and charged with the surrounding epidemic or contagious infections of the moment.

The impurities of the air which are arrested by the intricate organizations and mucus in the nose are thrown out again from its interior barriers by the returning breath; and the tingling excitements of the few which pass them, cause the muscular involitions

of sneezing, by which they are violently and successfully resisted.

The air which enters the lungs is as different from that which enters the nostrils as distilled water is different from the water in an ordinary cistern or a frog-pond. The arresting and purifying process of the nose upon the atmosphere, with its poisonous ingredients, passing through it, though less perceptible, is not less distinct, nor less important, than that of the mouth which stops cherry-stones and fish-bones from entering the stomach.

This intricate organization in the structure of man, unaccountable as it is, seems in a measure divested of mystery, when we find the same phenomena (and others perhaps even more surprising) in the physical conformation of the lower order of animals; and we are again more astonished when we see the mysterious sensitiveness of that organ instinctively and instantaneously separating the *gases*, as well as arresting and rejecting the *material* impurities of the atmosphere.

This unaccountable phenomenon is seen in many cases. We see the fish, surrounded with water, breathing the air upon which it exists. It is a known fact that man can inhale through his nose, for a certain time, *mephitic air*, in the bottom of a well, without harm; but if he opens his mouth to answer a question, or calls for help, in that position, his lungs are closed

and he expires. Most animals are able to inhale the same for a considerable time without destruction of life, and, no doubt, solely from the fact that their respiration is through the nostrils, in which the poisonous effluvia are arrested.

There are many mineral and vegetable poisons also, which can be inhaled by the nose without harm, but if taken through the mouth destroy life. And so with poisonous reptiles, and poisonous animals.

Infinitesimal insects also, not visible to the naked eye, are inhabiting every drop of water we drink and every breath of air we breathe; and minute particles of vegetable substances, as well as of poisonous minerals, and even glass and silex, which float imperceptibly in the air, are discovered coating the respiratory organs of man; and the class of birds which catch their food in the air with open mouths as they fly, receive these things in quantities, even in the hollow of their bones, where they are carried and lodged by the currents of air, and detected by microscopic investigation.

All persons going to sleep should think, not of their business, not of their riches or poverty, their pains or their pleasures, but, of what are of infinitely greater importance to them, their lungs; their best friends, that have kept them alive through the day, and from whose quiet and peaceful repose they are to look for

happiness and strength during the toils of the following day. They should first recollect that their natural food is fresh air; and next, that the channels prepared for the supply of that food are the nostrils, which are supplied with the means of purifying the food for the lungs, as the mouth is constructed to select and masticate the food for the stomach. The lungs should be put to rest as a fond mother lulls her infant to sleep; they should be supplied with vital air, and protected in the natural use of it; and for such care, each successive day would repay in increased pleasures and enjoyments.

The lungs and the stomach are too near neighbours not to be mutually affected by abuses offered to the one or the other; they both have their natural food, and the natural and appropriate means prepared by which it is to be received. Air is the especial food of the lungs, and not of the stomach. He who sleeps with his mouth open draws cold air and its impurities into the stomach as well as into the lungs; and various diseases of the stomach, with indigestion and dyspepsia, are the consequences. Bread may almost as well be taken into the lungs, as cold air and wind into the stomach.

The Mechanical trades are the most subject to these, from which the Farmer and the Gentleman are more exempt; the Carpenter, therefore, amidst the dust of his shop, should work with his mouth shut, and take

care not to sleep upon his bench during his mid-day rest. The Cutlery-grinder should not work with his mouth open amidst the particles of steel which his feet raise from the floor, and the motion of his wheel keeps in circulation in the air.

So with the Stone-cutter (and particularly those working in the hardest sort of stones and flint) the same precautions are necessary; as by the extraordinary proportion of deaths reported amongst those classes of workmen, the poisonous effects of their business are clearly proved, as well as by the accumulated particles of steel and silex found imbedded in their lungs and coating the respiratory organs; and which, to have caused premature death, must have been inhaled through the *mouth*. Physicians are constantly informing the world, in their Reports, of the fatal results of these poisonous things inhaled into the lungs; but why do they not say at the same time, that there are two modes of inhalation, by the *nose* and by the *mouth;* and inform the Mechanics and labourers of the world who are thus risking their lives, that there is safety to life in one way, and great danger in the other? If physicians forget to give you this advice, these suggestions, with your own discretion, may be of service to you.

"The Ear, the Nose, and the Eyes, being less mutable, and less liable to change of character and shapes, seldom lose their natural expression; while original

Nature, is as seldom seen remaining in the expression of the adult mouth."*

*Case.*—Mr. ——, a clergyman, aged thirty-three, after an attack of influenza, attended from the first with pains in the ears, on both sides, and sore throat, complained also of an increase in the size of his tonsils, which were before enlarged. This gentleman came of a rheumatic family; he resided in the low parts of Essex. This case I did not see until four months after the attack, and when much had been done for it. On examination, I discovered increased redness of the faucial mucous membrane, and enlarged tonsil, which was granulated in patches; he complains of brow headache and pains over the cranium, attended with very disagreeable noises in his ears towards evening, which last through the night; the Eustachian tube on both sides open, although their pharyngeal extremity is swollen; on examination, the meatus was found dry, discoloured and red. As this case was aggravated always on his return to his duty, I recommended him at once to leave for the seaside, and commence with a course of guaiacum. This he took in large doses, in combination with quinine, increasing the dose daily for a fortnight. A residence at the seaside considerably improved his health, but his hearing continued dull,

* "Shut your Mouth," by George Catlin.

and the noises remained. This plan he pursued with occasional variation, and without any attempt at instrumental interference for six weeks. As the pains in the head gradually subsided, so, indeed, did the noises; on one side the tonsil was reduced, but, as has been before observed, on this side the hearing did not improve, whilst on the other, although the gland remained almost at its usual size, as the health became invigorated and the membrane of the throat more healthy, so did the hearing also improve.

This case was under my care for six months, and at length was perfectly cured. Considerable relief to the meatus in these cases is found in applying at bed-time the dilute citron ointment. Such cases are not infrequent, and they could be multiplied; but as the above may serve as a type for the whole class, I shall not adduce more.

If this affection be allowed to proceed unchecked by remedial measures, or, what is still worse, if its nature be mistaken, and it be regarded as a neuralgic or nervous pain affecting the ear, and treated by hot and stimulating local applications, all the symptoms will become more and intense, the inflammation of the meatus and tympanum will induce such an amount of swelling as to preclude the possibility of carefully examining and correctly attaining their condition, suppuration will take place in the tympanal cavity, and will cause ulceration and ultimate destruc-

tion of the membrane, with consequent discharge, which will continue, if not judiciously treated, for the remainder of the patient's life.

The dull-red, brick-dust colour of the meatus, and the dryness of the membrana tympani, traversed by numerous vessels, are especially characteristic of rheumatic inflammation. Should the patient make the attempt to force air into the cavity of the tympanum from the throat, and succeed in the effort, it will be followed by a considerable aggravation of the pain. There may be also an occasional feeling of tension, and of fulness in the ear, lasting for a long time, and rendering the perception of sounds still more confused and undefined. There are some kinds of inflammation which derive their peculiarity, not from the texture that is inflamed, but from some specific virus, as is the case with the gouty, &c., and their nature is to be ascertained from the history of the case, and the assemblage of symptoms it presents. The seat, as well as the kind of pain, affords striking evidence of this in the rheumatic variety. Generally, the chief seat of pain at the commencement is in the head, where it is complained of for some time, after which it extends towards the ears, attended with a disagreeable buzzing and tinkling sound, and a benumbing sensation involving the ear and temple; the pain next attacks the eyeball and brow, and passes downwards to the jaws and teeth, very much resembling in its

progress an attack of tic-douloureux, but differing from it in its origin and history, and generally in the peculiar constitution of the patient. The rheumatic sufferer commonly complains of a sense of fulness and distension in the ear, as if some foreign body were within it, and sometimes also of increased or exalted hearing, noise not producing pain, as in ordinary inflammation of the ear.

The progress and severity of this disease vary much, the attack being sometimes very slight, and soon subsiding without deranging the ear, whilst at other times it is extremely severe, continuing, in many instances, for a long time, and ultimately destroying the organ. The character of the inflammation may be varied by other causes. I have a man under my treatment, whose sufferings commenced after sleeping in a damp bed, first, with all the symptoms of influenza, attended with loss of speech, giddiness, loss of smell and taste, and deafness in both ears. In this man the attack followed the change of temperature within twenty-four hours, showing how rapidly the diseased condition may take place after exposure to its causes.

When the rheumatic inflammation of the ear is very severe, so as to be called acute, the pain in the head, in some cases, soon after the beginning of the disease, becomes agonizing; the parts within the meatus soon become inflamed, and a discharge ensues of a muco-

purulent character. In two instances which I had the opportunity of watching from the commencement, the pain, severe as it was, soon ceased, but in each the inner structures of the ear were irreparably destroyed.

The rapidity with which an attack of acute rheumatic inflammation of the ear often produces periostitis, and destroys the organ of hearing from periosteal inflammation and caries, has often astonished me; it shows clearly the necessity of vigilance on the part of the surgeon, as by early and judicious treatment much mischief may be prevented, and consequently also the disorganization of the internal apparatus of the organ.

*Case.*—Mr. ——, a strong, stout man, consulted me in the autumn, suffering from a severe pain in his left ear, with a benumbed sensation extending over the temporal and mastoid processes, and considerable tenderness on touching or combing the hair over that part of the head. He also complained of a heavy, deep pumping noise in the organ of hearing. He informed me that about a month previously he had an attack of articular rheumatism, principally affecting both the knees, but occasionally invading the wrists and elbows. For this he was treated in the ordinary manner by his medical attendant. This illness confined him to the house for more than six weeks, during which time he had several paroxysmal

attacks in the ear. After that time the rheumatic affections of the joints gradually subsided; and when he came to me he complained principally of a shooting, throbbing pain in the ear, extending down the cheek-bone, with tenderness and numbness over the back part of the ear. On examination of the meatus, I found it in a swollen and inflamed state, so that I could not ascertain the condition of the membrane of the tympanum. The inflammation was accounted for by his having had several hot and stimulating applications, used both internally and externally to the ear during the paroxysmal attacks, on the supposition that they partook of the nature of tic-douloureux. The mucous membranes of the throat and nose were involved in the disease, and the tonsil on the left side was inflamed and considerably swollen, thus giving rise to some difficulty in swallowing. The ear was examined from time to time, and as the pain and tenderness over the bone continued, I carefully examined the part, but could not detect any sensation of fluctuation. As, however, the symptoms had continued so long, I recommended that an incision should be made over the tender part of the bone, expecting thus to free the tense and inflamed periosteum. Mr. —— experienced considerable relief from this, and, with the aid of an opiate, he slept better that night than he had done for two months previously. The wound was kept discharging, the

pain in the ear gradually subsided, and the tenderness disappeared, as also a discharge from his ear, from which he had suffered for some years previously.

This case is interesting as affording an illustration of the relief given to the patient, after the integuments over the bone had been freely opened, and the periosteum divided, although suppuration had not taken place. There cannot be any doubt but that the cure was expedited by such a mode of proceeding, and the mischief prevented from extending to other important parts of the head, nor any respecting the rheumatic origin of the case.

This inflammation may frequently be traced to a sudden change of temperature: in one case—the worst I ever saw—it occurred from travelling by railway, sitting at an open window, the parts being thus exposed to the influence of a direct current of air. In another, it was produced in a gentleman who took cold while looking at fireworks on Primrose Hill. He first was confined to his room for a month with sciatic rheumatism. He recovered from this, left home for a month, and was then seized suddenly in the night with pain in his left ear, which increased so much as to deprive him of sleep. In the morning he discovered that he had quite lost his hearing. He consulted a surgeon, who advised him to take a warm bath, and to let the ear alone. The pain continued

for three or four days, when a watery discharge appeared, and continued for three months, gradually assuming a purulent character. The pain ceased, and was followed by a continued noise like the working of a steam-engine, varying with changes of weather, and occasionally attended with pain in the forehead.

This inflammation occurs most frequently in particular seasons of the year, as in the spring months, or during the winter; I have observed it in both sexes, most frequently in adults and in those advanced in life. It usually affects one ear, but sometimes attacks both, the inflammation being seldom so severe in the second as in that first affected. In addition to the foregoing set of symptoms, I cannot pass over one very unpleasant and (to the patient) alarming symptom which this disease may cause; I allude to distressing noises in the ear of various descriptions, which in many instances will be found the principal symptom that appears to engross the attention of the patient. It is, however, a well-observed fact, that these extraordinary noises may be occasioned not only by rheumatism, but also by almost every morbid affection of the ear, or of the nerves supplying it. The causes of noises in the ear have been a source of contention with aurists from the days of Hippocrates, and the moderns are scarcely less divided in opinion than the ancients. Time was, and not

long since, when this symptom was taken to be diagnostic of some existing lesion; but more recent observation proves that it is generally induced by a species of hyperæsthesia, or morbid irritability of the auditory nerve, by which sounds are heard which do not exist, bygone melodies are re-echoed to the brain, and the patient is harrowed and sometimes tortured with a pseudophonous chorus, which absorbs or disturbs his attention in a most annoying degree. This unpleasant symptom may arise from any of the numberless causes which affect the healthy functions or damage the structure of any of the parts concerned in hearing. The brain itself may be the seat of this disorder; and as visions and apparitions disturb the imagination in delirium and insanity, so sounds, proceeding from no outward source, are heard and described by the patient in glowing terms. The branches of the auditory nerve, as expanded in the recesses of the labyrinth, may, therefore, be the seat of this morbid affection, from some lesion in their own structure, or some congestion in their investing membranes, or in the bony cavities which they traverse. Further, the tympanum or its ossicula, or the Eustachian tube and its membrane, the membrane or fenestræ of the tympanum, the mastoid cells, or the external meatus—any or all of these, as they may in a state of disease render the brain insensible to external sounds, may also, under different morbid

affections, materially augment the sentient force of actual sounds, much to the distress of the patient, or plague him with mimic vibrations which have no reality in the surrounding atmosphere. These sounds may likewise arise from constitutional causes, or lesions of remote organs—thus, dyspeptic, hysterical, gouty, and rheumatic patients, to say nothing of the hypochondriacal, are occasionally haunted with every conceivable kind of noise: the whizzing of a bullet—the rustling of leaves—the roar of a distant waterfall, or of breakers on the shore—the boiling of a tea-kettle — the beating of drums — the discharge of musketry or artillery—the melody of some familiar air: all these, and ten times as many more, varieties of sound are described, both by nervous and deaf patients, as very common sources of annoyance. How, then, can noises be symptomatic of any one particular disease, seeing they are common to all? And yet the assumption of some diagnostic indication thus conveyed, has been a ground of practice scarcely less injurious than empirical. In fact, there is no symptom concerning which a greater amount of quackery has been written and perpetrated, and none that requires greater vigilance on the part of the practitioner or patient. It is sometimes attended with deafness, at other times the hearing is morbidly acute; sometimes it is referred to the head, sometimes to the ears, or perhaps to only one ear; it may

attack the patient gradually, or it may seize upon him suddenly, and may continue for years. In some it produces melancholy, haunting them day and night; in others, who are perfectly deaf, it seems somewhat to compensate for the affliction, becoming rather a pleasing illusion, while it echoes the melody of some favourite air which had been forgotten long before. One loyal patient expressed to the author the pleasure he experienced in hearing the national anthem during the whole of the morning, while his evening hours were solaced with the more "allegro" movement of "Rule Britannia." On the other hand, the reverse may be the case, and patients incurably deaf may still seek for relief from the distressing annoyances to which they are subjected by the persistence of this unpleasant symptom.

"These noises connected with deafness," says Dr. Parry, "are, however, in many cases, mistaken for a nervous affection, when it is, in fact, a disorder of the circulation, and thus is often treated wrongly. It may, as has been stated, arise from obstruction in the Eustachian tube only; accordingly, when it is simply thus caused, the patient can hear well, when the tube is distended by strongly blowing, with the mouth and nose closely shut. He can usually, also, hear acute sounds, but not the more grave ones. In this case, so far from there being any real paralysis of the nerves, acute or very loud sounds are even painful;

and what demonstrates that this is a disease of increased vascular fulness or impetus, and not of nervous insensibility, is first, that I have known it removed on the occurrence of other diseases requiring active treatment for their cure, and return as those complaints were diminished; secondly, it has entirely ceased, in many instances, spontaneously; and, thirdly, it has been completely cured by an accidental discharge of blood, either from the bowels or the nose. This species of deafness is very commonly produced by colds in the head, evidently owing to an extension of the disorder from the mouth and nose, along the membrane, which is continued into the Eustachian tube. It is probable, however, that on many occasions of deafness, the malady is not confined to this part; but it is worthy of inquiry whether, in such cases, the effect does not originate in a similar excessive impulse of blood, acting on some essential part of the organ of hearing. I have known many cases of this kind yield at once, after the application of a few leeches, from time to time, to the inside of the nostril, or of a cupping-glass applied behind the ears, thus showing how much it depends upon inflammation rather than on nervous debility.

"A frequent concomitant of the former state, but often occurring *during the day*, is a complaint which is often extremely distressing, and very difficult of

relief; this is a noise referred to the head or ears, of different kinds and degrees. Its more usual quality is that of a rushing sound, in one or both ears, which persons compare to that of wind or the tide; the former of which it often resembles, by having gradually increasing and decreasing gusts, and the latter, by consisting of alternate waves. It generally increases towards night, and often is perceived only on lying down. On some occasions, it is said to resemble music, and more particularly the ringing of bells, and I have heard it compared to the squeaking of rats or mice, and to the sound of human voices.

"These noises often occur in the same patient, with various other disorders termed 'nervous.' They not only sometimes overpower the accurate perception of other sounds, but accompany the commencement of occasional or permanent deafness, such as has already been said to arise from preternatural fulness of blood in the membranes or other parts of the organ of hearing. Hence, in common with the latter disease, they are often a mere temporary effect of cold in the head. If, therefore, the theory of that species of deafness and of other disorders, of which these noises in the ears make a part, several of which will hereafter be mentioned, be well founded, these circumstances might be considered as sufficient to prove that such noises depend on the rush of arterial

blood through some part of the vascular system of the ear.

"This conclusion will, however, derive additional force from the following circumstances, which show the relation of the malady in question to other excessive determinations of blood to the head. These noises are apt to be produced by whatever increases the action of the heart, as hot rooms, late hours, long watching, strong drink, violent muscular exertion, long or excessive mental exertion, and by whatever agitates the mind; and they are diminished by all those causes which have been already stated as having a contrary operation, such as cool air, temperate living, adequate rest, and everything which quiets the action of the heart.

"When the rushing sound is waving or alternate, as it usually is, each rush is exactly synchronous with a systole of the heart; and, lastly, when the disorder has been more or less constant, and has affected one ear only, I have often been able, *pro tempore*, entirely to remove it, and always to alleviate it, by compressing the carotid artery on that side. This expedient, however, should not be adopted without a previous loss of blood, either by leeches or cupping behind the ears; the bowels should be kept freely in action by mild and repeated purgation; in fact, they should never be permitted to be constipated."

It follows, of course, that noises in the ears, of

whatsoever character, must be taken as a symptom of deranged function, as well as of structural changes, arising from a great variety of conditions in various tissues, and should only be regarded diagnostically in connexion with other symptoms. The abatement of these noises nevertheless presents a valuable sign of improvement, just as their severity or aggravation denotes increase of mischief. It may be noticed in this place, that their engrossing character in deafness and aural disease has been made the most of by ignorant quacks, who, by proposing indiscriminate remedies for "noises in the ear," have, of course, utterly overlooked their special causes, which must always be recognised and attacked before relief can be obtained. Remedies for *noises*, therefore, like other local remedies, may be altogether inert, or exceedingly mischievous, and the patient should be cautioned against their use, except under proper medical advice.

*Great acuteness of hearing* occurs occasionally as an idiopathic affection in nervous and highly irritable individuals; it bears a striking analogy to that irritability of sight which is occasionally met with. The external senses, especially those of hearing and sight, strangely sympathize with each other. The increased acuteness of hearing depends upon a morbid excitement of the nerves, sometimes of the whole of the auditory organs, but more generally of some parti-

cular part, as of the tympanum, or the labyrinth, and particularly of the cochlea, or some one or more of the semicircular canals. In most instances it seems confined to the branches of the nerve. *It is associated frequently with earache, headache, and acute pains along the jaws, which are generally periodical and rheumatic.*

The sensation is sometimes so keen as to render whispering, or a mere current of air in a room, or the respiration of persons present, quite annoying, while noises before too slight to be perceived or noticed become highly distressing.

*Case.*—I have at this moment before me a most impressive description of this effect, in a letter from a schoolmaster, about forty-four years of age, of an irritable habit of body, who about a twelvemonth since was attacked with a severe pain in the side of the head, while travelling by railway with the window open. This gentleman was obliged from his occupation to devote much time to study, as well as also to conduct classes for college, the constant labour disturbing his mind, and rendering his life, on account of his ill-health from rheumatism, &c., almost miserable; but the noises in his ears, and his mental annoyances were, he thought, relieved by application to business—otherwise his mind was uncomfortable, and thinking became almost as bad as reading. He resided near a marshy district, by which his ill-health

was greatly aggravated; nor did it permanently improve until he changed his residence to the seaside. The symptoms generally became aggravated towards morning, accompanied with acute pain in the head, which kept him awake for some hours; it was sometimes so severe as to alarm him as to the result; he feared he would become insane; the pain he describes as inferior to the distraction caused by the noises which accompanied it. He says, "It usually comes on with a most painfully quick hearing. I feel as if the drum of the ear were stretched so tight as to make the least sound appear almost as loud as thunder; and a loud noise is just as if I had received a blow quite to the centre of the brain. This really is not imagination, but actual sensation. Moreover, a noise affects my eyes so much, that I am obliged to darken my room, when at any time I am under the necessity of hearing anything like a noise; a loud sound affects my eyes, and a strong light my ears; they seem to act reciprocally. My head is certainly not so bad, nor anything like it, as it was at ——; but still the sudden attacks I have from over-exertion of the mental powers, or upon any other excitement, makes me always fearful I shall lose my senses."

"The opposite fault," writes Sir J. Watson, "*obtuseness* of hearing, is much more common. Deafness is frequently attributable to some physical imperfection in the organ of hearing. But it is with

cases in which it has a deeper origin that the physician is chiefly concerned. It often occurs in fevers, and is not then thought a bad symptom; it is certainly a much less unfavourable circumstance than morbid acuteness of hearing, and it probably depends upon a disordered state of the brain, which is not in itself very dangerous.

"What is called *tinnitus aurium* is an instance of the depravation of the sense of hearing. It seems sometimes to result from the too strong throbbing of the arteries. It occurs in many disorders, and is not unfrequently a symptom of diseased cerebral vessels, and a precursor of apoplexy or palsy. It is sometimes in itself extremely annoying. Curious and undefinable sounds are heard by some patients—sounds as of a rushing wind, as of the falling cataract, the ringing of a bell, or the beat of a drum.

"A female patient of mine in the Middlesex Hospital last year, who had disease of the bones of one ear, with symptoms that threatened some implication of the brain, affirmed that she heard a perpetual noise in her ear like the singing of a tea-kettle. I have lately been consulted by a gentleman from the country, who had no other complaint than a constant hissing, which worried him greatly, in one ear. Another had watched with curious anxiety, and described to me very graphically the successive variations which this troublesome symptom underwent in his own person.

It began suddenly with some headache. At first it was a loud roaring, like that of the sea. In a few days it came to resemble exactly the whistling of the wind among the trees in winter; afterwards he could have believed that the room was filled with humming gnats, and finally the noise settled down into the gentle sound of a distant waterfall. It haunted him incessantly for seven years. Then came an attack of shingles on the right side of his head, face, and neck, and the noise at once ceased. It left him free for a year and a half, and then returned as before. Sir David Brewster relates the case of a lady, subject to spectral illusions, whose ear was mocked by unreal sounds, as her eye by unreal visions. Being in her right mind, and perfectly aware of the infidelity of her senses, she repeatedly heard, not vague noises merely, but voices and sentences when none were uttered. This is far from being uncommon.

"Strange infirmities of the memory there are associated with cerebral disease, and justly to be regarded among its symptoms; large blanks in the backward gaze; fitful suspensions of the remembering power; partial glimpses of the past; resurrections of thoughts long buried in oblivion. I speak not of that natural decay of the memory which is noticeable in most persons as age creeps on, and which is one of the most affecting of the many warnings then vouchsafed to us, that the bodily frame is suffering dilapidation.

Even of this natural decay there are some curious things to be noted. Recent events are retained with difficulty and soon forgotten; while those of older date are easily and accurately recalled. This has been referred, and rightly I believe, to the differing degree of interest, and therefore of attention, which the same objects excite in the young and in the old. It would seem as if the effort of attention stamped characters upon the material fabric, which are deep and lasting in the youthful brain, faint and sooner effaced in the aged. But disease may revive things long forgotten—a language long unspoken and unthought in—or blot out entirely all traces of definite portions of time gone by, and even all previous power of speech and language."

*Treatment of Rheumatism in the Ear.*—It is obvious, from the nature of this disease, as explained in the foregoing pages, that it requires, in all its forms and degrees, *constitutional* rather than *local* treatment. Trifling with, and irritating the organ, with drops, unguents, and lotions, is only betraying the patient into a flattering and useless anticipation of benefit, without any chance of eradicating or even of reaching the disease. In the treatment of this malady our object ought to be, not merely to remove it, but to do so at as little expense as possible to the patient's strength. It is necessary to adopt that regimen and method of life, and occasionally the use of those

pharmaceutical remedies which are calculated to preserve or restore the general health; and by a slow and almost imperceptible influence, as it were, to give additional vigour to the constitution. At the same time, when the disease is chronic—and it is in this condition generally that we meet with it—when there is much pain in the head or ear, and the hearing is impaired, the local remedies should be moderately antiphlogistic: bleeding may be necessary, either by cupping or leeching; much relief in the early stage may be obtained by emetics composed of ipecacuanha, the bowels having been freely relieved; but caution is to be observed. As with rheumatism in other parts of the body, so in the case before us, the patient is seldom benefited by bleeding alone: warmth, as a rule, is to be recommended.

When the disease is accompanied by distressing noises in the ear, with well-traced rheumatic symptoms, it is highly gratifying to observe how rapidly these noises subside under the influence of judicious anti-rheumatic treatment.

Amongst the remedies which I have found most useful in rheumatic affections of the ear, guaiacum holds an important place. The volatile tincture, combined with the mistura guaiaci of the pharmacop œia, is the most effective form of administration. When there is much periosteal tenderness, the iodide of potassium may be added with signal advantage.

Nocturnal pains may frequently be much relieved by an embrocation applied to the nape of the neck, consisting of the vin. colch., tinct. opii, and linim. sapon. comp. in equal proportions. This should be applied until the skin be reddened. An occasional purgative —when the skin is hot and the bowels sluggish—is obviously indicated in every stage of the disease. In young persons, when the skin generally is dry and hard, a tepid salt sponge-bath in the morning is often highly useful. Indeed, attention to the skin, by the warm, vapour, and hot-air baths, in this, as in all diseases of a rheumatic, gouty, or neuralgic origin, is indispensable.

If there be reason to suspect a syphilitic complication, the bichloride of mercury, in combination with sarsaparilla, seldom fails to give relief, and ultimately cure the deafness.

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## Section II.

### ON RHEUMATIC HEADACHE.

Although rheumatism in the head more commonly extends to the structures of the ear, there are cases in which the ear escapes; and as, among the great varieties of headache met with in practice, one may easily be confounded with another, it appears to the author that he will not be travelling far from the main

object of this work, in offering a few observations on the symptoms and treatment of those pains in the head which are purely of rheumatic origin.

It is highly important, in the first place, to distinguish between those cases in which rheumatism attacks the parts external to the skull (when it is attended with little or no danger), and those in which the dura mater, the internal coverings of the brain, and even the brain itself, may become affected by the specific inflammation; cases full of danger, and requiring nice discrimination, as well as judicious and prompt treatment.

1. Rheumatism of the Scalp may attack the *whole* or a *part* only of the fibro-muscular layer covering the cranium; sometimes it is confined to the back of the neck, sometimes to the vertex, sometimes to the forehead and temples, and it occasionally involves one-half of the cranium, when it has been erroneously called hemicrania.

*Symptoms.*—Rheumatism of the scalp is often preceded by a sensation of coldness over the head and face, especially on one side. The pain is severe, dull, heavy, and more or less distracting; it is attended by great tenderness of the scalp; it may extend down the neck, to one side of the neck only, to one shoulder, to the face, or to one or both eyes. Sometimes the patient complains of cold, clammy perspirations, but more generally of heat and a sensation

of uneasiness and stiffness, not always amounting to pain, in the eyes and eyelids, and of some degree of imperfection of vision. Reading for any length of time, especially of the smaller kinds of print, and even steadfastly gazing at any object, is troublesome and sometimes painful. Rheumatism of the scalp is generally aggravated in the evening, and alleviated in the morning. There is not any increase of the temperature of the scalp, or augmented action of the arteries of the head, unless the affection be complicated with increased vascular action in the internal membranes.

In some cases the pain is aggravated by heat, in others by cold. This will depend partly upon the degrees of congestion in the vessels of the part affected, but chiefly upon the seat of the disease. If the integuments are affected, external heat aggravates the pain; if these are sound, the subjacent pericranial structures are relieved by warmth applied to the skin, so as to reproduce the suppressed perspiration.

Rheumatism may seize upon a single muscle only, producing pain of the forehead, or upon those concerned in mastication, occasioning difficulty in eating, or even upon the *tongue* itself; but this is rare. It frequently happens that the larger joints are previously affected by rheumatism, a circumstance which renders the case less difficult of detection.

The *causes* of this variety of rheumatism are the

same as those which induce it in other parts of the body; and the principal reason that can be assigned for its affecting the fibro-muscular structure of the head, the ear, eyes, or other parts about the head, in preference to the larger joints, may be their having been exposed more directly and immediately to the influence of the exciting causes. Draughts of cold air, when the head is much heated and perspiring freely, encountering a violent gust of cold wind, exposure at a window, either of a house or of a railway carriage, to the draughts through a key-hole, or the chinks in a badly-made and badly-fitting door, sleeping with a bedroom window open, sitting under a skylight with the head uncovered, and such like causes acting on an individual rendered specially liable thereto, by being subject to the rheumatic diathesis, will often serve to light up a more or less severe attack of the disease. The author has frequently been consulted for pain in the eyeball, accompanied with noises in one or both ears, which have been relieved by the treatment for rheumatism; showing, in a striking degree, the identity of structure with the identity of morbid action. This is principally noticed during a prevailing easterly wind, when the weather is damp and cold.

The probability of the extension of this peculiar inflammation to the membranes of the brain, or to that organ itself, will depend on the severity of the

attack, and the amount of the power of resistance possessed and manifested by the system at large, as also on the treatment.

*Treatment of Rheumatism of the Scalp.*—When this affection is unattended by febrile action, when there are no symptoms of cerebral mischief, and especially when the patient is advanced in years, which is generally the case, the guaiacum may almost be relied upon as a specific, either in the form of the mistura guaiaci of the pharmacopœia, or of the volatile tincture, or of both, combined with iodide of potassium. This will generally act upon the bowels, and the dose must be regulated by the action thus produced. Should the iodide disagree with the patient, it is detected by an excessively nauseous metallic taste in the mouth. When that taste is very distressing, the salt rarely produces any beneficial effect. After it has been given for some time, it is apt to produce peculiar effects on the constitution, even while it is acting beneficially; these require to be guarded against, and may, as have been stated, necessitate its suspension for a time. A discharge from the nose and eyes, with headache, watchfulness, and other nervous symptoms, indicate that the use of the salt has been continued *too long*. The same disorder may require for its treatment not only different remedies in different persons, but even a great difference of treatment in the same person at different times, according as he

may be strong or debilitated, and according as the seasons and their vicissitudes, easterly or southerly winds and warmth, moisture, dryness, or cold, exert a greater or less amount of influence on his frame. As an external application, much relief may sometimes be found from the use of an embrocation, composed of equal parts of camphorated spirit, colchicum wine, and arnica.

*Case.*—A lady, aged thirty, had suffered from pains in the head during changes in the weather, for a period of ten years. The scalp was so tender, that touching or moving the hair gave her pain. Latterly, she was seized suddenly with rheumatism generally; the pain in the head and face, on the left side, becoming much aggravated, particularly when the parts were warm. She had a copious mucous discharge from the nostrils, as also from the ear; some degree of sore throat towards evening, with *coldness of the feet and legs*, which she had never experienced before. There was great stiffness in the eyelids, and impaired sight after reading. The noise in the ears was perfectly confusing, and she had a scurfy eruption over the body. The guaiacum and iodide mixture was prescribed for her, and in one month, under the use of this remedy, the pains in the head left her, and rarely recurred. She likewise entirely recovered her hearing, which had been very defective for many years, the true cause not having been suspected.

Rheumatic inflammation of the subjacent membranes may occur either as an original affection, or, which is more common, as a formidable complication of rheumatism of the scalp, the symptoms of the latter generally taking precedence of the more dangerous lesion. The numerous cases of cerebral rheumatism which have occurred under the author's observation, so completely coincide in symptoms and history with the graphic description given by others that a few observation are only required to introduce it. The patients are often free from pain during the day, but at eight or nine o'clock at night the pain sets in, and is so agonizing, that they are willing to submit to any measure for relief. It lasts till three or four o'clock in the morning, followed by a profuse perspiration, when the patient gets some sleep. The intermittent character, and the time and duration of the paroxysms, are very remarkable. For some time the cerebral functions are not impaired, but at length the sufferer complains of a constant headache, though not so severe as during the paroxysm; he holds his head forward, with his brows knit; then follow occasionally epileptic fits, weakness of the lower limbs, paralysis, and the patient becomes greatly emaciated, despondent, and suffers colliquative perspirations.

These cases are marked by headache, having its regular nightly paroxysms, morning perspirations

and gradual emaciation. The patients have mostly been treated for dyspepsia, rheumatism, gout, neuralgia, brow-ague, and often for phthisis. The peculiar expression of the countenance, and the pain and wakefulness during the first part of the night have shown the true nature of the disorder. A blister to the head, opium at night, and iodide of potassium and sarsaparilla during the day, have dissipated all the symptoms, and the patients have returned to their usual occupations. After this, some have had no recurrence of the attack; others are subject to relapses after various intervals, but are always relieved by the same remedies; others are attacked by periostitis in its more generally recognised form; others are relieved only so long as they continue to take the iodide of potassium.

The following case may serve as an illustration:— A gentleman of a susceptible constitution, who had long been subject to occasional attacks of dyspeptic headache, and had frequently suffered from mental application during a long and laborious course of study, was thrown at once into active employment, by undertaking the onerous duties of a large public institution. Much pain and excitement of head ensued; general and local bleeding, mercurial purgatives, antimony, low diet, &c., were considered necessary. The symptoms subsided considerably, but the brain and nervous system remained in a state of

extreme susceptibility. On some recurrence of pain, it was judged needful to shave the head, which was done on a cold, wet evening, while he was labouring under great exhaustion. The ordinary covering of a thin night-cap was the only thing worn by him during the night. On awaking from sleep, a severe constrictive pain was felt over the whole head, attended with heat and tenderness of the scalp, throbbing of the temporal arteries, considerable cerebral excitement and vomiting. In truth, an external periosteal disease was thus engrafted upon a head previously suffering from high and continued excitement. After a few days, the mere superficial tenderness subsided, but the periosteal affection proved exceedingly intractable. In this case it seems probable that the frequent occurrence of sympathetic headache, aided by the excitement attendant on long-continued study, had induced an undue degree of vascularity and of nervous susceptibility in the brain generally; while the remarkable prostration of vital power, consequent upon the depletory measures employed, seemed to increase the nervous susceptibility, and thus concurred to form that twofold predisposition of which we have before spoken, and without which, we apprehend, the subsequent exposure to cold and humidity would have been insufficient to excite the peculiar periosteal cephalalgia, although it might have produced an ordinary rheumatic affection of the scalp.

So exquisitely sensitive does the pericranium remain in these cases, so readily affected by every exposure to humidity or sudden reduction of temperature, and so apt to participate in every occasional excitement of the brain, that one attack of the complaint has scarcely time to subside, before some fresh exposure gives rise to a decided augmentation of disease.

*Causes.* — The worst cases seen of this form of rheumatism, are those in patients who have taken large quantities of mercury for fevers or hepatic disease in the tropics, often many years preceding the attack, and have afterwards been exposed to cold and damp in our more northern climates. Indeed, this disease is attributed, in a great measure, to the morbific influence of mercury on the constitution. The author, however, has frequently seen it in patients who have never, to their knowledge, taken a grain of mercury. In fact, this, like all other forms of rheumatism, finds its origin in damp or cold, affecting a person originally subject to the rheumatic diathesis, from any cause.

*Treatment.*—This variety of the disease, dangerous as it is, the author has never seen end fatally ; and he is inclined to think that it will generally prove perfectly manageable when uncomplicated. The remedy is iodide of potassium, in doses of from five to eight or ten grains, three times a-day, with an

opiate at night, consisting of extract of henbane, or Dover's powder.

The diet should be nutritious, but stimulants should be avoided; and it is of great importance that the body should be kept in a temperature both uniform and warm, never below 60° or 65°. Vapour baths are very useful, and the skin should be kept constantly moist if possible. Beyond this, depletion is useless, and even mischievous, as the disease is always associated with a low state of vitality. In fact, an anæmic condition of the system, with a leuco-phlegmatic habit, often indicates a necessity for preparations of steel and other tonics.

When the disease appears in females with a pallid and waxy-looking skin, as in those confined to sedentary or mental occupations, as often occurs; and when the patient complains of cold feet and legs—night and day—the feet should be kept warm, and if sweating can be promoted, it will greatly assist the cure.

# CHAPTER II.

## ON GOUT AFFECTING THE STRUCTURES OF THE HEAD AND EAR.

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### SECTION I.

#### ON GOUTY INFLAMMATION OF THE EAR.

*Symptoms.*—From the earliest records of medicine, until the present time, physicians of the highest intelligence and repute have wearied themselves in the endeavour to show wherein the true pathology of rheumatism differs from that of gout. If we were now called upon to point out to what extent they have succeeded, we should find ourselves considerably at a loss. The recent endeavour to trace a difference in the chemical characters of the urinary deposits in each disease, and thence to infer the nature of the difference of that peculiar blood-poison which, as all agree, constitutes the origin of each, has been, as appears to the author, very far from satisfactory. But still the two diseases do differ; and the practical difference is chiefly this—that rheumatism often occurs in a subject not liable to gout, and that gout may show itself in persons who, either from here-

ditary taint, or a peculiar mode of life, may be said to be specially predisposed to it. Rheumatism affects indiscriminately the young, the middle-aged, and the old. Gout is rather the inheritance of those past the middle age. Rheumatism arises chiefly from cold, damp, and other causes *from without;* gout, from excess of good living, sedentary habits, mental occupations, and other causes acting *from within; i.e.*, affecting the joints, not primarily, but secondarily, from some peculiar condition of the blood. Rheumatism often occurs with a deficiency of digestive or assimilative power; gout more frequently from its excess. Rheumatism attacks chiefly the larger joints, and the fibrous and muscular structures; gout, principally the smaller joints. Rheumatism arrests the active and temperate; gout, the sedentary, and luxurious free livers. It is obvious, therefore, that the chief difference is not in the disease, but in the patient. When specific fibrous inflammation, acute or chronic, attacks a person predisposed to gout, it assumes the form of gout; when it attacks a young or active individual, not affected hereditarily by the arthritic diathesis, then we have a case of rheumatism. The occult cause we do not presume to explain.

In discoursing, therefore, on the symptoms of gout, we must first describe the person liable to the disease; this will help us much in determining whether the symptoms be gouty or rheumatic.

The sufferer from gout must either inherit the disease from his parents, or he must have acquired the arthritic constitution by his habits of life. Those habits are chiefly inaction and luxury; or, at least, inaction of body as compared with the amount and degree of nutritive assimilation, and also, as contrasted with the deficient amount of secretion and excretion. The skin, the kidneys, and the bowels are generally torpid, more particularly the skin, which is dry and rough, and not unfrequently affected with scaly and other eruptive diseases. When such a person complains of the symptoms we are about to describe, they may generally be referred to gouty inflammation as their cause. Whether the term, rheumatic gout, be strictly applicable to any combination of them, is a question of little moment.

Arthritic inflammation of the ear attacks chiefly the fibrous and mucous structures of the organ of hearing, and appears simultaneously or alternately with the manifestations of gout in other parts of the body. It occurs, therefore, sometimes as a sympathetic affection of neighbouring organs, and sometimes as the product of gouty metastasis. Should the inflammation develop itself rather on the external division, or lobe of the ear, the patient feels increased warmth and an intolerable itching in the part. The latter symptom becomes more and more insupportable, and at length passes into a burning, tearing, and

pinching pain, which spreads on all sides over the entire circumference of the auricle. In this case, the patient complains of constant noises, or singing in the ear, and of some hardness of hearing. I have known it described as if the whole of the outer ear were being torn or twisted off from the head. These symptoms increase to a considerable degree after midnight, and are not mitigated until morning. On examination, the external ear is swollen, presents an erysipelatous redness, feels hot, and is extremely sensitive to the touch. This swelling and redness often appear suddenly, and as suddenly subside. The entire surface of the external ear-passage is found to present a redness, rather pale than dark; it is entirely denuded of wax, or covered here and there with a dark brown thin and dried deposit; the drum of the ear is of a dull appearance, and traversed by some large vessels. Should the inflammation continue at this low point, the cuticle of the external ear-passage separates in mealy scales, or in larger portions, or becomes agglutinated with the diseased wax, which, after a time, is secreted in more than the ordinary quantity. If the inflammation become more intense, small abscesses or boils form and burst during an exacerbation of pain, and eventually discharge a watery matter. All the inflammatory symptoms are gradually mitigated after this, and are renewed only when a fresh abscess makes its appearance.

In an old patient at the dispensary, there was observed simultaneously a considerable swelling, which spread over the neck, with a rose-coloured inflammation of the skin and cellular tissue, preventing all motion of the lower jaw. In some patients, the walls of the ear-passage are swollen and puffy,* and there sets in an obstinate mucous and watery discharge. It is somewhat thick, almost without odour, flows not constantly nor equally profuse, and varies in respect to quantity. In damp or wet weather, or when the patient suffers from cold, the quantity is most considerable; when the atmosphere is dry and warm, it is, on the contrary, very small in quantity. If the discharge be of long duration, polypous growths may form in the passage, springing generally from its walls; but when the drum of the ear has been destroyed in the progress of the disease, they may also arise from within the tympanum. In cases where there have been frequent relapses of the inflammation, varicose vessels become developed on the drum of the ear; the membrane itself becoming turbid and thickened, and assuming a dappled or spotted appearance—resembling patchwork.

The disease not uncommonly seizes on the middle ear, and here (the structure consisting of minute arti-

* Exostoses, which are frequently seen in the canal of the ear, are mostly of this gouty material, accompanied also with fitful hearing.

culations of bone) we have an instance of gout affecting the smaller joints, and accordingly we find, after death, full evidence of gouty action in the form of chalky concretions and deposits analogous to those so commonly seen in the joints of the toes and fingers. The pain, in these cases, is very acute. Sometimes there may be loss of consciousness, rambling speech, and even convulsions.

The above-described symptoms vary considerably in different cases. Sometimes the symptoms suddenly abate, if a paroxysm of gout shows itself in any other part of the body. I have met with many cases where the affection of the ear disappeared rapidly after the occurrence of gouty pains, at first in the shoulder, and then passing down the loins, to the knee and the toe; or after an attack of lumbago, or sciatica. When the inflammation attains its height, suppuration ensues; the matter ulcerates through the membrane of the tympanum, and, with its escape externally, the disturbing symptoms gradually disappear. The pain then becomes more circumscribed, and is confined to the ear, and returns at longer intervals.

Dr. Graves gives a very curious case of what he calls "gout in the stomach" keeping up an alternate action, with a swelling on the forehead, involving the cheek and eye. He adds:—

"I was consulted by an old retired excise officer

whose deafness was always relieved after a seizure of gout in the foot; on the cessation of this action, his imperfect hearing returned. This occurs regularly, but, with ordinary attention to his diet, I doubt not, it would become easy of management. When he is free from gout in his foot, the discharge from his ears is most profuse, and of a thin mucous character. This has been examined under a microscope, and always presents a gritty deposit—probably the phosphate of lime.

"As there can be no doubt, then, that a momentary congestion may produce a momentary pain, we may infer that, in many instances, gouty twitches are owing to some cause which determines an instantaneous congestion of the affected part. Sometimes the congestion is more lasting, and the pain is proportionally intense and persistent. Thus, the late Mr. Daly, of Henry Street, mentioned to me the case of a gentleman, the lobe of whose ear was sometimes attacked suddenly by gouty congestion, accompanied by agonizing pain, but which never lasted more than a few hours. And I have myself recently suffered from a similar attack in the cartilage of the ear, which did not last longer than an hour, disappearing on the occurrence of gouty pains in the fingers."

There is another form of this gouty affection of the ear which is more chronic and insidious in its progress, but which is not therefore of less importance to

the practitioner and to the sufferer; it is frequently met with after years of suffering from gout in the extremities; the diseased action in those parts gradually diminishes, and the patient then begins to complain of a singing noise and rustling sound in the ears, generally accompanied with headache in the morning, and giddiness. The distressing noise appears to the patient to be more external, or in the meatus, as it were, and not to be so deeply seated within the head, as it is found to be in the acute form or variety of this complication.

It is also generally associated with imperfect hearing on one or both sides of the head—it terminates, in some cases, in confirmed deafness; whereas, on the other hand, if the nature of the diseased action be recognised early, and duly, promptly, and properly treated, it is easily brought under control, so as to obviate the occurrence of any loss of function, or of change in the structural condition of the parts concerned. When a structural change in the ear does occur, and appears to be merely superficial, not involving the deeply-seated and more important textures, the treatment to be pursued should be of a decided nature, according to the plan previously indicated, the use of powerful antiphlogistics, however, being altogether abandoned, as the time will have gone by when they could be of service; indeed, the length of time these unpleasant symptoms affecting

the head and ear may exist, the function of hearing being more or less impaired, while there may still exist a probability of a cure, or at least of a certain amount of relief, is truly extraordinary. It is, however, advisable to address one's self to the treatment of this form of disease as early as possible. Attacks of this kind are usually preceded by some marked disorder of the digestive functions; the secretions are generally unhealthy, more especially the urinary. I have observed that as the extremities become in a more healthy state, and are less swollen, so these diseased phenomena *in the ears and head increase in severity*. In many instances I have traced this gouty affection of the ears and head to hereditary tendency, and in others I have observed it to be subsequent to the first attack of gout in other parts of the body. The pain and inflammation in these cases do not reach the ordinary degree of intensity, or, at any rate, do not continue for the usual time, and then disappear gradually; but they cease abruptly and entirely, while symptoms of severe and alarming disorder arise as suddenly in some internal organ. This sudden metastasis is often mistaken when the ear is the part affected; and as it is generally for days previously the seat of the abnormal noise or of imperfect hearing, the organ is often subjected to much irregular or injurious treatment, such as violently syringing the external ear-passages, practised, in all probability,

again and again, and followed by the use of all sorts of acrid and stimulating lotions and ointments, applied to the same part. I have in more than one instance known the organ to have been irreparably destroyed, as regards its function of hearing, and even in some measure, as regards a portion of its delicate structure, after a forcible syringing, with the view of removing diseased wax which was supposed to be impacted or indurated; the operation, under these circumstances, being frequently followed by acute symptoms, indicative of the mischief that has been thus caused.

Very lately I saw a case where the gout, which had previously been seated in the stomach, and had given rise to great suffering and danger, afterwards attacked, first the eye, and then the ear, by metastatis, terminating ultimately in partial paralysis of the face.

The first care of the medical attendant should be to see that the patient be withdrawn from the noxious influences which first occasioned the disease, and the next, that the inflammation be checked. In order to attain this end, cold, damp air, and, above all, everything which may promote congestion of blood in the head and ears, must be avoided; on the contrary, living in a dry, temperate air, with a spare diet, food easy of digestion, and perfect rest of mind and body, are to be recommended. It is easy to see that, in

the commencement, the so-called anti-arthritic remedies, which in general belong to the class of exciting medicines, are not applicable, and that only an appropriate mildly antiphlogistic mode of treatment is admissible. In this case, one must be directed partly by the age and constitution of the patient, partly by the seat and degree of the inflammation, and also by the violence of the accompanying fever. If the inflammation of the meatus be slight, no blood-letting will be required; but if it present a violent character in all its phenomena, it should be reduced by local blood-letting, by means of leeches applied behind the ear. But if the inflammation have attacked the internal ear, and have attained considerable intensity, then, if the patient be strong, plethoric, and not advanced in years, the practitioner may have recourse to a proportionately free abstraction of blood; according to the violence of the local symptoms, he should place a greater or less number of leeches around the ear, or apply cupping-glasses to the nape of the neck, to the shoulders, and the spine. In weak and elderly individuals, where the inflammation is not violent, or has become chronic, a few leeches, or a small quantity of blood taken by cupping, will suffice. Internally, we should prescribe mild, antiphlogistic aperients, in such doses as to produce copious liquid evacuations from the bowels, and a derivation from the head and ear as quickly as possible. After the inflammation

has been moderated, and the affection of the ear has been the consequence of a suddenly suppressed action in any joint or organ whatever, a cutaneous counter-irritant should be freely employed, so as to set up inflammation in that part, and thus, if possible, reproduce the original disease; or hot fomentations should be applied to the parts affected.

If the inflammation be checked by the internal treatment, and the sequelæ of disease only remain to be treated, we must direct our efforts against the gouty predisposition, and seek to ward off a relapse. We should accordingly, in the first place, prescribe an appropriate dietetic line of conduct, recommend the use of food simple and easy of digestion, forbid strong beer, acid and heavy wines, and other such drinks, as well as all heating, flatulent, salted, and highly-seasoned food. The patient should take sufficient bodily exercise, not indulge too long in bed, clothe himself warmly, in order to protect himself against the risk of cold, cover the head with a warm cap, and use friction carefully all over the body; vapour baths, friction, or rubbing the skin, cannot be too strongly insisted upon, if we desire a permanent cure of the noises in the ear, or of the headache.

Cases of retrocedent or misplaced gout in the head and stomach are seldom fully relieved until an attack of the disease takes place in the extremities. It occurs mostly in persons of the nervous temperament,

and it not uncommonly affects females. The recurrence of gout in the limbs relieves all these symptoms. The head appears more liable to this form of the gouty diathesis than any other organ; and for this there is an apparent cause—viz., the greater sympathy subsisting between it and the parts liable to gout, and more particularly from the great tendency to determination of blood to the head in those who have long been subject to gout; that the alimentary canal should occasionally become the seat of the retrocedent action might be expected, from the active sympathetic connexion so often subsisting between it and the extremities during the presence of the phenomena of gouty inflammation.

In all instances of metastasis of disease, local stimulant applications to the joints usually affected with gout should be freely and steadily applied, in order, if possible, to recal the disease from the more important organ to those which are of less direct value to the system.

I attended an old military officer, whose hands were crippled with gout, in consequence of the metastasis of the disease from the extremities, in precisely the manner I have already described. He had also the distressing symptoms of gouty affections of the ears, with the noises peculiar to the complaint, and impairment of hearing. He was treated with great regularity for upwards of eight months, and the

result was, that he was not only relieved of the metastatic gouty neuralgia of the ear, with all its distressing accompaniments, but he has also been free from the recurrence of the constitutional disease in the extremities for many months.

We are by no means unfrequently consulted in reference to a copious discharge, of a purulent character, from one or both ear-passages, occurring in elderly people, in whom no manifestations of gout are, or have been present, nor even indicated by the occurrence of any symptom common to that disease. It is useless, therefore, to attempt to check this symptom by the ordinary treatment, to which we should have recourse did it follow the usual course of inflammation; nor does the mucous membrane, on examination, exhibit the changes usually observed in ordinary inflammation of the ear, except, perhaps, that the portion of it which covers the membrane of the tympanum is thickened and changed in colour. I have known this discharge resist every kind of local treatment; nor, indeed, do I think it very judicious to attempt its removal or cure, especially when our suspicions respecting its origin and causes have been confirmed by the results of our inquiries and by the history of the case. These discharges sometimes alternate from side to side, occasionally subside spontaneously, or after a seizure of gout in the extremities, or again are arrested after a well-regulated

course of diet, combined with alkaline mineral waters. This plan of treatment, with occasional cleansing of the ear-passage with warm water only, will be found the best that can be adopted.

I was consulted by an elderly lady, during the past winter, who stated that she had been seized suddenly with a profuse purulent discharge from the right ear, without having had any previous intimation of approaching disease, by pain in the organ, or any other premonitory symptom or sign, except only loss of appetite for food, accompanied with heaviness in the head, and a disposition to sleep, which she had observed for several weeks previously. Feeling annoyed with the unpleasant and disagreeable discharge, and its little disposition to yield to the treatment that had been adopted, she, contrary to the advice given to her, determined on having it suppressed; the symptoms in her head, which had before annoyed her, were suddenly aggravated, in consequence of the success that attended the efforts for its suppression, and she remained in great danger for some days, suffering from all the symptoms of approaching apoplexy, when, as suddenly, an attack of gout occurred in the foot, which lasted for upwards of three weeks; the head symptoms yielded to the revulsive efforts made by nature, and she rapidly convalesced, not a sign remaining either of the imminent danger of apoplexy, with which she had

been threatened, nor of the discharge from, and the diseased state of, the ear, except, perhaps, some slight imperfection in the hearing.

I have observed that, in several cases, the patients have been affected with heaviness in the head and over the brow and forehead, with restless and sleepless nights, prior to the occurrence of the discharge from the ear, and, I believe, these premonitory indications, together with the diminution of the quantity of the acid contents of the urine, will be found very important signs, as contributing to the formation of an accurate judgment.

There are, however, other forms of gout, besides those which show themselves in the usual situations, or the metastatic variety, which affect the head, the ear, the brain, or the stomach. In other words, the disease may remain latent in the system, not showing itself in any of the joints, but creating a great deal of discomfort, mischief, and suffering, and rendering its victims miserable and unfit to share in the ordinary occupations and pleasures of life.

A gentleman in a letter to the author, thus describes his symptoms :—

"The case is of about five years' standing. The complaint is chiefly confined to the legs; frequently the pain will pass from one to the other during the same morning or evening. Sometimes the pain extends to the thighs, both legs being full of neuralgia.

About a month ago (and from time to time previously, when suffering from weakness) there were acute, piercing pains in the chest, which might be connected with indigestion, but were like neuralgia. Also, about the pit of the stomach, the whole part occupying rather more than a handbreadth, a feeling as if *it were made of wood*—or did not belong to me—at that time very susceptible. This continued after taking purgative medicine. During attacks, excessive languor, and any change in the weather which produces languor, will bring on the attack."

The following case is another in point, showing the various forms in which gout may distress the system in its latent or metastatic character:—

The eldest of several brothers, a medical man, formerly in practice in this city, had a paroxysm of gout, for the first and only time in his life, in the forefinger of the right hand, when he was verging on the thirtieth year of his age. At precisely the same age, his eldest son, who is also in the practice of our profession, in the same locality, had a severe paroxysm of gout in the same hand.

That, however, has not been his sole attack; he subsequently became a martyr to this disease in its undeveloped form, the arthritic poison manifesting its influence in him in every part of the body, whilst the signs of the disease as affecting the head, the localization of the pain at the vertex, and at the brow,

generally at the right side, the noises, or singing in the ears, with occasionally deep, heavy feeling of pain and giddiness, or heaviness of the head, with impairment of memory, and a not infrequent inability for mental application, are all signs indicative of the gouty diathesis, from which he is scarcely ever free, except when the disease fixes itself for a short time in one or more of the smaller joints—the outposts of the body—when he enjoys a remarkable immunity from the pains and penalties to which he is at other times subject.

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## Section II.

### HEADACHE ARISING FROM GOUT.

This constitutes one of the most dangerous and most formidable varieties of disease dependent on, or caused by, the arthritic diathesis. Gout in the head, as it is popularly termed, may be met with either in the form of arthritic headache, or of arthritic apoplexy. The former, indeed, is often the precursor of the latter, and not infrequently, when it has been mistaken, and consequently mistreated or neglected, ends in it.

Arthritic headache is a disease that often escapes detection, especially if the patient have not previously had a paroxysm of gout in its regular form, so as to

aid the judgment of the practitioner in forming a diagnosis. The symptoms which mark the disease are attributed to an ordinary determination of blood to the head, or rather to the brain, and the treatment pursued is in accordance with such views. A greater mistake could hardly be committed; for depletory measures in the treatment of gouty affections of the brain and its membranes are generally injurious, and yet they constitute the principal remedies employed to relieve the consequences of determination of blood to the brain, sometimes even when it is recognised to be of gouty origin, or connected with the arthritic diathesis.

Arthritic headache is a disease to detect which demands considerable skill and close observation, based on the knowledge obtained by extensive experience, as it is only by distinctive signs, which by some may be regarded as apparently trivial, that we shall be enabled to determine the true nature of the attack.

It occurs generally among those in whom gout fails to show itself in the ordinary way, but remains lurking in the system, ready to pounce upon any organ, which, by fortuitous circumstances, may be open to diseased action. The higher classes of the community, among whom gout is frequently an heir-loom, being in many instances hereditary in both parents, are far more liable to this form of metastatic

gout than are either the members of the middle or of the lower orders of society. It is likewise found to affect the females of a gouty family more readily than the males, and more frequently after a certain period of life, termed the "turn of life," has been reached. The younger members and the male branches do not meet with absolute immunity from arthritic headaches, but they are much less subject to its attacks.

The symptoms by which we mostly distinguish this disease are, a sense of fulness in the head, generally constant, but liable occasionally, from casual circumstances, to change into severe pain; a sensation of vertigo or giddiness, and as if a movement were occurring in the head—a feeling to which the attention of the patient is continually drawn, and which apparently impairs the powers of thought and of memory; all the perceptions are confused, and the patient at the same time experiences a sensation as if he were about to become insensible; if he stoop, he is apt to be seized with temporary blindness; the hearing is often inordinately acute, the least noise rendering him almost distracted; he is frequently troubled with a buzzing sound, and sometimes with other noises in the ears; flushings and heat sometimes pass over the head and face; the hair is often tender and painful when touched, and the scalp feels hot, constricted, and uneasy.

With regard to the general symptoms which attend

upon this state, they are such as indicate a disordered condition of the digestive apparatus and ill-regulated and badly eliminated secretions. The function of digestion is most frequently very imperfectly performed; flatulence, with acid eructations, a sense of weight and general uneasiness at the pit of the stomach, rumblings in the bowels, an unpleasant, acid, or bitter taste in the mouth, the tongue covered with a brown fur, with occasional yellow streaks, a disordered state of the bowels, sometimes confined, and at other times much relaxed; the urine usually scanty, but highly coloured, and depositing a reddish sediment on standing, with a rough, dry scurfy skin, are symptoms which indicate that general disarrangement and imperfect performance of the ordinary functions of the body, so commonly observed in gout. Meanwhile, in the midst of much disordered function, and of inactive secreting apparatus, the pulse for the most part remains undisturbed, or if at all altered marks a diminished rate of circulation—a greatly lessened degree of tone in the system.

These symptoms are those usually found to be principally characteristic of this specific form of headache—if I may use the term—and if they be not removed by appropriate treatment, will most assuredly terminate in serious disordered action, either in the brain itself, causing arthritic apoplexy, or else by a kind of repercussive metastasis, in the joints usually

affected by gout, or in the other important organs liable to attacks of that disease by metastasis.

In the earlier part of my remarks on this disease, I have alluded to the impropriety of depletory measures and the risk attending their use in the treatment of this variety of headache; the injurious results which follow from the practice may in part be taken as a sign indicative of the true nature of the disease under which the patient is labouring, when, as sometimes happens, an error in diagnosis, and consequently in the treatment, has been inadvertently made.

*Case.*—Miss ——, aged about fifty-four, of spare habits, has suffered during a great part of her life from severe headaches; they occurred at tolerably regular intervals of a fortnight or three weeks; were accompanied with vomiting, and appeared to depend on a disordered condition of the stomach; she had always lived abstemiously; none of her family have suffered from gout.

During the last four years she has had less active occupation than formerly; probably from this cause she has suffered from depression of spirits; her general health continued good until the early part of last year, when she suffered from dyspeptic pains; she then altered her mode of life, and partly from disinclination to eat, partly from the idea that she might relieve her headaches by starving, she reduced her allowance of food, took only a small quantity of

meat, and seldom any vegetables, and she entirely abstained from malt liquor and from wine. Under this regimen she became weak and pallid, and her health suffered materially; her spirits became more depressed, but she did not suffer from any distinct bodily disorder until last August, about three months after she had adopted the low system of diet: she had a feverish attack which confined her to her bed for two or three days, and weakened her very much. As she was somewhat regaining strength she was attacked with gout; the disease was confined to the great toe of the left foot, and was attended with all the characteristic pain, tenderness, and swelling; she recovered from the attack very slowly; it was upwards of a fortnight before she was able to walk, and she still has slight occasional pain in the foot; she has since had some threatenings of gout in the right foot, but she has not had a distinct attack; her former ailments have undergone very little alteration, but under a more generous system of diet her general health has materially improved.

These long-existing headaches are by no means uncommon, frequently continuing during the greater period of a lifetime. Dr. Graves mentions a lady, whose age was seventy, and who had no evidence of gout in her family, but who suffered for years with those anomalous pains of the head, the key to which was given by a seizure of gout at that late period of

age just mentioned, and whose health improved and headache subsided after the attack.

*Case.*—John B——, forty-three years of age, a butler in a nobleman's family, was admitted a patient at the Royal Dispensary. He stated that he had been suffering from severe headache, more particularly at the upper and back part, and a fulness in his ears, causing at times imperfect hearing and giddiness. His medical attendant, thinking these signs to be a threatening of apoplexy, advised bleeding and other evacuants; he was accordingly bled to fainting, but the relief being only temporary, and the symptoms afterwards becoming more severe, the operation was repeated, with the effect notwithstanding of relieving him for a day or two only; the symptoms then becoming worse he was soon after obliged to keep his bed. After some days he had a severe pain in the foot, evidently of a gouty nature, the headache and giddiness being in consequence considerably relieved. He was shortly afterwards seized with an intense pain in the lobe of the ear, accompanied with swelling and redness: the lobe continued to enlarge for upwards of a month, when the swelling suddenly subsided; the head symptoms, in the meantime, were much relieved, and he was enabled to return to his duties. Two months afterwards, another attack, resembling the first, caused the same treatment to be repeated, with a similar unsatisfactory result.

I saw this man shortly afterwards; he was complaining of heaviness in the same side of the head as the affected ear, a continuous and distressing noise, aggravated towards evening, and an occasional pain, resembling tic, on that side of the face and behind the ear. On inspection, the structures presented nothing very remarkable beyond a dryness of the ear-passage, and a slight huskiness of the membrane of the tympanum; the hearing distance being only two inches on the diseased side.

The treatment pursued was the administration of half a grain of the extract of colchicum, twice a day, an alkaline mixture after every meal, a vapour bath three times a week, regulated diet, without stimulants, and less animal food than he had been accustomed to. The case progressed with but little relief for ten days, excepting only that he became more tranquil as to his feelings of nervousness, and had a copious general perspiration all over the body. He continued the colchicum for six weeks, with the gradual diminution of the noises, and a considerable increase of the hearing distance.

It would be useless to continue the particular narration of this case further: suffice it to say, that the patient perfectly recovered after a period of six months, being relieved not only of all the head symptoms, and of the hardness of hearing, but also of a troublesome scaly eruption of the skin, by which he had been tor-

mented for some years. The aggravation of symptoms after the blood-letting shows clearly the injurious effects of depletion, and evidently and forcibly indicates that caution is necessary in all such cases when any large quantity of blood is about to be drawn from the system.

As I have made some allusion to this medicine, I beg to append the following rules which I adopt for its administration :—

It should not be administered so as to excite nausea, vomiting, or purging. These effects should be regarded as indicative of the unfavourable operation of the medicine.

Colchicum may be regarded as acting favourably when, under its use, the urine is increased in quantity, a more abundant bile is discharged, when the fæces, though solid, are surrounded by mucus, and the skin secretes freely.

The effects of colchicum should be carefully watched; like other active medicines, it is apt to produce unpleasant symptoms.

The use of this medicine seems chiefly applicable to the sthenic form of gout, which occurs in robust constitutions, and in the prime of life, but it is sometimes inadmissible in persons advanced in years, who have had several attacks, and in whom the malady would seem too deeply rooted to be influenced by the temporary administration of this remedy.

The following remarks, by Dr. Holland, support the views I have taken :—"The first of these, and that which best justifies the term specific, is the fact that its action is not limited to the removal of gout from the joints or other textures usually affected, but extends to the relief of the disease when present in parts differently composed, or when assuming the most irregular and changeable aspects. The proof here is wholly that of experience, and, it must be admitted, of recent date ; but, nevertheless, sufficient to authorize the view just stated. We have not, indeed, much evidence applying to the acute forms of what are termed retrocedent and misplaced gout; and, in such cases, other and still more instant remedies are often required by the urgency of the symptoms. But in all chronic forms of the constitutional disorder, the influence of colchicum is striking and well-defined. We find it relieving for example, the peculiar ophthalmia of gouty habits, where other remedies, local or general, have been of little avail. I have used it in a particular class of headaches, which I doubt not to be connected with this diathesis, and have obtained equal proof of its efficacy here ; the same, though less explicitly, in gouty bronchitis. These and other instances clearly show that it is not merely a local remedy for the disease. Its power of removing gouty inflammation from the joints is subordinate to its action on the matter of gout throughout the system ; and it is to

the latter that we must look for explanation of those effects which may be thus deemed specific, in every just sense of the term."

*Case.*—Mr. C——, a corpulent, elderly gentleman, consulted me for a troublesome and heavy beating in his head and ears, always aggravated after meals; he suffers from pains in the knees and ankles, and from some difficulty in swallowing, arising from a thickening of the mucous membrane of the throat, and some enlargement of the tonsils. When he indulges his appetite somewhat freely, the throat appears, as it were, stuffed with a thickened mucus, and the hearing generally becomes imperfect, the meatus on each side being apparently choked up with a dry, greyish-white deposit, which, although cleansed and removed, was repeatedly reproduced, accompanied with a discharge, the passage being reddened and the membrane of the tympanum slightly opaque. These appearances I have so fully explained in another part of this work, "On Gouty Inflammation of the Ear," both in the acute and chronic conditions, that it will be needless to recur to them here.

This gentleman was advised to pursue a course of treatment similar to that employed in the previous case, with the exception that he commenced by taking active cathartics for ten days. The treatment was continued for nine months, with marked relief both to the chalky formation in his ears, and the

threatened suffocation which he had for years been suffering from. These cases not unfrequently present the mucous membrane of the throat in a thickened state, causing a temporary obstruction to the Eustachian passages. Although freely relieved by catheterism, the tube does not remain long patent, and the case seldom does well without the adoption of the constitutional treatment before alluded to.

In a letter I received from this gentleman, he states, with reference to the noises, "that they appear to originate within the head, and exactly resemble the hum of a swarm of bees—at other times the cooing of wild doves; and if I take any extra exercise, so as to get heated, or am in a perspiration, they are much like the jumbling of bells and the ringing of wheels in a large machinery."

It is not uncommon to find, in many cases of gouty headache, that the patients have an obstinate discharge from the ear on one or both sides, more frequently on one only: this I have examined from time to time, and have found that, if allowed to dry on paper, it presents some indications of the earthy concretions characteristic of gout.*

*Case.*—Miss H——, aged fifty-four, stated that

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* "I know," says Otto, in his Pathological Essay, "a person in whom, during an atonic attack of gout, the whole mouth, throat, and gullet are largely covered with a whitish mucus, which, when dried on blotting-paper, left behind a large quantity of phosphate of lime."

for years she had been a martyr to rheumatism, chiefly in her legs and arms (her parents having been both so affected); that she caught cold during a voyage to the Continent, and since that period has suffered from occasional sore throat, difficulty in swallowing, with deafness in both ears, and a buzzing sound as of bees, or boiling water. The ears presented a dryness and deficiency of wax, and evidence of inflammatory action of long duration; she had a constant headache, and soreness of the scalp on combing or moving her hair in wet and damp weather, and at these times the ears on both sides became cold and senseless to the touch. There could be no doubt in this case of the origin and cause of her sufferings; and readily did the disease succumb to the treatment adopted. The noises, although not finally removed, have subsided for days together, and her health has improved, with permanent cure of the headache, sore throat, and nervous feelings, from which for years she had been a sufferer. It is singular that the sore throat, in these cases, generally gets permanently relieved by anti-arthritic treatment.

*Case.*—Mr. ——, aged fifty, a tall, corpulent and otherwise healthy-looking man, having suffered from gout in his feet for many years, observed, after removing to a new neighbourhood, that the seizures were less frequent, and indeed were not, as had been hitherto the case, periodical, occurring once every

four or five months, and lasting for more than a week. He had reduced his diet, and he was now attacked with noises in both ears, gradually increasing, with a distressing headache (incapacitating him from thinking), accompanied with vomiting, lasting a great part of the day. The headache was followed by giddiness, and a disposition to sleep. It is to be observed that, since his head has been thus affected, not a symptom of gout has ever appeared in his extremities, except only *that an icy coldness of the feet and legs is present day and night.* I have observed this symptom to exist in all these cases, and it is not until the natural warmth has been re-established that the headache or noise subsides.

Laxatives in cases of head affection are always necessary; and more drastic purgatives may sometimes be required. Prudence, however, is indispensable in their use. While that degree of constipation is not to be permitted which would urge the blood to the head, regard must, at the same time, be had to the patient's shattered condition. Precise rules cannot be laid down; but the experienced physician will hardly err, if he do not lose sight of the impaired state of the circulation, labouring under a double disadvantage from the oppressed state of the brain in addition, probably, to disease of the central organ, and the generally deranged condition of the frame.

The advantages to be derived from the most judicious treatment are, however, greatly increased by its administration in an early stage, as the disease is apt to creep on insidiously and stealthily and may produce irreparable mischief, under misapprehension or neglect. Of all the symptoms likely to occur, noises in the ear and tenderness of the scalp should awaken the attention of the practitioner.

It may be observed that these diseases are greatly mitigated in the summer, or under the influence of warmth. Perspiration, whether natural or artificially excited by vapour or other baths, almost invariably gives relief.

## CHAPTER III.

### NEURALGIA OF THE HEAD AND EAR.

There is not, in all probability, in the entire circle of medical practice, a class of diseases respecting which the medical practitioner finds more difficulty in tracing the proximate cause to some determinate seat, than those which appertain to, or involve, the nervous system; and of all the disorders to which the human frame is liable, there are few more afflicting than those painful affections of this part of the system, called neuralgia, or tic-douloureux. The patients are generally more or less incapacitated for any permanent exertion or employment, consequent to the intensity of the suffering, and the general debility which is thus induced, and also the consequences resulting from the action of the powerful narcotics and sedatives so often had recourse to, to deaden the severity of the agony; these are in many, if not in most cases, urgently called for by the very intensity of the pain.

Although all this affords a strong reason for a thorough investigation into the causes, origin, and nature of these neuralgic affections, nevertheless, it is

a painful fact that there are but few diseases which are less understood; the obscurity in which they are thus buried may, in some respects at least, be attributed to the more than ordinary difficulties attending their investigation. Opportunities for examining into the pathological changes that may have occurred by means of post-mortem inquiries are of very infrequent occurrence; and, when they are met with, the alterations in the structure of the nerves are not generally of a nature to be cognizable by our senses. The microscope may in future render some assistance on this point, but without its aid little can be effected, for the human eye is not able to distinguish the minute changes in the tubes composing the structure of a diseased nerve. Tumours have been occasionally discovered pressing on the nerve that has been the seat of the pain, and some other changes in the neighbouring structures have been ascertained; but the true morbid anatomy of the nervous system offers, even in the present day, a wide field for discovery and speculation. Theorists, indeed, have not been altogether idle: various opinions have been formed respecting the proximate cause of neuralgia, but in the majority of instances they are altogether unworthy of notice.

The pain in neuralgia has in many cases been so entirely confined to one nerve, and the disease has been attended with so little apparent disorder of the

system generally, as to have led to the belief that neuralgia is a strictly local malady ; but, on the other hand, seeing that an operative procedure has most frequently failed in affording permanent relief, the pain generally returning after a longer or shorter interval of quiet, the conclusion that it is dependent on constitutional causes, in many instances at least, has of late been considered to be almost irresistibly proved.

Females are supposed to be more obnoxious to this affection than males, more especially to that form of it which attacks the head and face. It is not undeserving of remark that statistical accounts of this affection indicate a considerable difference in the ages at which males and females are respectively most liable to be attacked by it, the period for women being between 20 and 30, and for men between 30 and 40 ; whilst children are but rarely subject to it.

Some writers consider tic-douloureux as derivable by hereditary transmission ; and certainly it seems no more than reasonable to consider that if the peculiar diathesis which favours the development of gout or rheumatism may be handed down from generation to generation, the transmission of neuralgia from parent to child may, in like manner, occur.

Nothing is more common than for persons to suffer from tic-douloureux and rheumatism simultaneously.

When the habit of the individual is at all pre-

disposed to tic-douloureux, it is impossible to set limits to the changes that may operate as exciting causes of the affection—exposure to cold and damp, or to currents of cold air whilst the body is bathed in perspiration ; damp clothes, fatigue or lassitude, great excitement, and mental anxiety ; irritation caused by an unhealthy condition of the abdominal viscera, by the presence of worms, hæmorrhoids, or morbid mucous secretions—may all contribute to induce a paroxysm of tic-douloureux.

Malaria is in all probability another frequent cause of neuralgia, more especially of that variety which puts on the intermittent character ; if it be so, it must produce its effect by its power of depressing the energies of the system generally, and by establishing a condition favourable to the development of the neuralgic affection, where there exists a previous predisposition to it.

## NEURALGIA, AS CONNECTED WITH RENAL DISEASE.

I have long been familiar with attacks of neuralgia of the face, accompanied with noise in one or both ears, which, on investigation, are found to be connected with disease of the kidneys. The following case of a medical gentleman's wife will fully explain my views on this head, and caution us to take a full history of the case ere we commence the treatment;

the cause being obviously at some distance from the seat of the aural disease.

Mrs. E——, about forty years of age, was seized with pain in the head and ear of the right side, accompanied with a distressing buzzing of a most annoying character. The pain shifted at times from the head to the jaw of the same side, and thence to the throat, causing difficulty of swallowing, and sometimes thickening in her speech. With the view of relieving the pain in the ear and the noises, which were supposed to arise from some altered condition of the structures, she was advised, prior to my seeing her, to have powerful remedies applied to the ear-passages, and they were doubtless the cause of a purulent discharge from the membrane, and of partial deafness. This treatment had been carried on for some months, without in the least degree mitigating the pain or removing the noises. At length a severe attack of rheumatism seized her in each shoulder, together with pain in the chest and some difficulty of breathing. It was now observed that the urine was occasionally diminished in quantity, and that when that was the case the paroxysms of neuralgia in the face were greatly aggravated. A course of treatment, directed with the intention of bringing the secreting organs into healthy action, perfectly restored the patient, who had been suffering from disease quite remote from the apparent seat of annoyance, and one which is most likely to be

overlooked unless careful investigation be made. I have found these cases, which are of rare occurrence, to be much aggravated by a residence in damp localities. The case just detailed exemplified this fact. While living in London my patient continued convalescent, but on her return to her own residence all the symptoms of the affection of the kidneys relapsed with all their former violence, together with the neuralgia of the face.

Dr. Christison considers it among the most frequent of the secondary affections. He says :—"On investigating the early history of many cases which have first come under my notice in the advanced stage my attention has been drawn to the frequency with which reference was made to rheumatic pains as one of the previous symptoms; repeated instances of the same complications have occurred after the admission of patients into the infirmary; and, in short, this connexion has appeared to me so far common that I never meet with cases of obstinate chronic rheumatism without being led to make inquiry into the state of the urinary secretion. The form in which it commonly appears is that of mere neuralgia, without swelling or redness of the affected parts, and seated in the muscles more frequently than in the joints."

The kidneys and skin are the principal organs which purify the blood from the effete matters it contains. It has been long a matter of common

observation, that the urine of a large proportion of gouty persons habitually contains a far larger quantity of lithic acid or the lithates, than the urine of persons in health. Dr. Prout, the most eminent pathological chemist of the age, considered the development of lithic acid as the "characteristic feature in gout." Berthollet found that, at the commencement of a gouty attack, the amount of lithic acid in the urine is not only diminished, but is actually below the healthy average proportion. Dr. Garrod has confirmed the truth of this observation, and has shown that when a gouty attack is going off, lithic acid and lithate of ammonia have been abundantly thrown off from the system in the urine. Elsewhere further remarks will be found on this part of the subject.

The cutaneous excretion is also peculiar in gouty patients. It has been often observed, and I have noticed it myself very frequently, that the skin, over any joint attacked by gouty inflammation, is bedewed by a perspiration so acid that it instantly reddens litmus paper. If such a joint be covered with dry lint, and the whole be enveloped in oiled silk, the lint in the course of a few hours becomes completely saturated with an acid fluid, which often contains as much as 8 per cent. of solid constituents,—being animal matter and salts, varying in proportion and composition with the state of the blood. Stark and Wolff have found lithate of soda in the per-

spiration of gouty patients; and Dr. Simon, who examined that of two such persons who had been under the cold-water cure for ten and twelve weeks respectively, found it to contain chloride of sodium in large proportion, carbonate of soda, a little phosphate of lime, and a fair amount of sulphuric acid. Dr. Golding Bird states that he has seen a patient bed-ridden from rheumatic-gout, whose legs were covered with an eczematous eruption, and the parts on which the exudation had dried were actually frosted with microscopic crystals of lithate of soda.*

The most common class of case is one in which the most distressing depression of spirits with sleeplessness, or sleepiness without sleep, are the prominent symptoms. This may occur without headache, or if headache be present it is confined to the forehead and temples. Light and sound are not complained of unless there be headache—in that case they are intolerable. All these symptoms alternate with gouty affections of the joints, or when the more persistent and chronic forms are co-existent.

In other cases, also frequently observed, there is more or less general feebleness, listlessness, tottering walk, giddiness, and torpor of the mental faculties. With all this there may be a very irritable temper, and liability to violent fits of passion upon slight

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* Wells, "On Gout," p. 104.

excitement. Neuralgic pains may be complained of in the forehead, eyeballs, or ears, or distressing continuous pain in the nape of the neck. If an acute attack comes on in the joints all this is relieved, and the mental powers become again acute and active. Should there be return, after recurrence of acute attacks, to the former condition, the nervous symptoms are aggravated, the sight and hearing becoming imperfect from the deranged nutrition of the brain and nerves.

When the jaw is affected there is often obstinate toothache, and many a sound tooth has been uselessly drawn to relieve pain, which can only be removed by remedies acting on the whole system. The irresistible tendency to grind the teeth which some gouty patients have may arise from periostitis of the jaw, but Dr. Graves refers it to gouty irritation of the dental nerves.

Redness of the nose is often a cause of great complaint. The cartilage is sometimes the seat of permanent deposit, but more often there is a transient fulness of the integument only, as in a case recorded by Dr. Graves, where the nose grew hot daily at 3 P.M., the heat continuing four or five hours, the part becoming of a bright and then of a purplish-red colour, which spread to the upper portion of the cheeks, and was accompanied by some uneasiness, but no pain.

The seat of superficial neuralgia of the face and head is very doubtful. In some cases the cutaneous nerves appear to be affected solely; in others to suffer secondarily to the fascia or aponeurosis. In either case the pain comes on in sudden paroxysms, shows a tendency to periodicity, may last from four or five hours to a week, and come on at intervals of from a month to a year of perfect health. The slightest touch or draught of air increases the pain. It is quite superficial, with little or no redness, and flies instantaneously from one part to another.

The forms of latent or irregular gout, depending on the efforts of nature to throw off gouty matter from the blood by the kidneys, are various. In some cases the kidneys, in others the ureters, bladder, or urethra, are the seat of the most prominent symptoms.

When the kidneys are healthy they remove from the system such abnormal constituents of the blood resulting from derangements in the processes of primary or secondary assimilation as are not excreted by the lungs, liver, or skin, provided these abnormal constituents are either in a state of perfect solution, or capable of being rendered soluble. They also compensate, by increased activity, for defective action in other excreting organs. The result is a morbid condition of the urine. It contains elements it would not contain were the body in a state of health, in the same quantity, if at all. But this cannot be said to

be a urinary disease. The kidneys have not only done their duty, but they have performed a natural curative or purifying process, removing noxious matters from the blood, and thus assisting to prevent disease. It is the continuance of extra work which leads to disease of the kidneys—the passage of irritating matters separated by the kidneys which leads to disease of the ureters, bladder, and urethra.

In the early stages of gout, when lithic acid is formed in abundance, the general rule is that it is not found in the urine just before or during an attack in a joint. It is in the intervals of the joint attacks, or when the disease may be said to be latent, that it is in excess in the urine. It often passes away in concretions of considerable size, and excites irritation in its passage. One of the most common varieties of lithic acid deposit in the urine of gouty persons is in the form of small round pale yellow masses, generally about the size of a pin's head, but sometimes attaining that of a pea, in that case being rather calculi than deposit. Dr. Golding Bird calls this *pisiform deposit*, and says, "It is remarkable for its persistence, often during many years; it frequently vanishes for many months, and then reappears. I have generally observed the patient to remain free from gout during the presence of this deposit, and often to suffer from a severe paroxysm on its sudden disappearance. It is really remarkable what an enormous number of these

minute calculi are frequently passed. I have met with cases in which upwards of two hundred, the size and colour of small mustard seeds, have been passed in two days."* It is only in cases of strong persons, however, whose health has not suffered greatly from the duration or persistence of the fits, that any lithic acid deposit continues for many years. It usually alternates with others, and as the system becomes debilitated gives way to phosphatic deposits.

Patients often ask their medical attendants if there are any means of completely *curing* gout. The answer should be, that while we cannot cure gout by medicine, no disease can be more benefited by treatment, if the patient will honestly pursue a rational system of natural medicine. There are numerous facts on record proving that patients who have not suffered long enough from the disease to impair the vigour of their constitution very seriously, may, by means of regular active exercise, pure air, and wholesome diet, entirely overcome all tendency to gout, and live to old age in perfect health. But if those who are unwilling or unable to take active exercise hope, by abstemious diet, to get rid of their sufferings, while they maintain their sedentary studious habits, and live in some confined situation, they will almost invariably be disappointed, and often aggravate the mischief by con-

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* Wells, "On Gout," p. 133.

verting occasional fits of acute gout into prolonged sufferings, in the atonic or latent forms of the disease.

The general principles which should regulate the diet of gouty persons have been laid down, but it must be remembered that each case requires these principles to be carried into effect in an especial manner.

Of all external measures the hot-air or vapour-bath is the most effectual and the most generally useful. Either of these promote extraordinary free perspiration, and thus directly free the blood from a large quantity of fluid, with animal and saline matter, and by leading to a free circulation of blood through the capillary vessels of the skin all over the body, unload the vessels of the internal organs, and thus promote their free secretion.

The simplest and most effectual manner of making the hot-air bath is to fold a blanket over the seat of a common wooden chair and let the patient sit on it. He is then covered by five or six blankets, which are tucked closely round his neck, and fall round the chair on to the floor like a cloak. An ounce or two of spirits of wine is then put into a small saucer, or the top of a cold cream pot answers very well. This is placed beneath the seat of the chair on the floor and lighted. In from ten to fifteen minutes the person is generally in a profuse perspiration. If any fulness of the vessels of the temples come on without perspira-

tion on the forehead, the burning spirit should be removed; and the same may be said if any unpleasant fulness is complained of about the head. When the perspiration runs freely down the sides of the body, so that the patient feels his hands well moistened as he passes them over the ribs, the effect is sufficient, as it is not desirable to carry it on to the extent of producing depression of the system.

In some cases where it is desirable to give such a bath once or twice a week, in the intervals between attacks of gout to prevent their recurrence, it is well to do it in the morning, and have the body well rubbed over afterwards, first with a wet sheet and then with a dry one, to procure a healthy state of skin and prevent a chill being felt. When it is given during or at the commencement of an attack, to relieve this attack, the wet sheet should not be used but the patient should go at once to bed in warm dry linen, drink simple diluents freely, and let the natural perspiration continue. In this way I have seen very acute attacks of gout go off very speedily, without any medicine whatever being taken beyond a simple dose of magnesia.

The vapour-bath may be given in a similar manner, substituting for the burning spirit a pail of water beneath the chair in which a hot brick, or the hot iron from an urn, is immersed. Or the steam from boiling water may be conveyed by a pipe from a

kettle to the bed, or sofa, on which the patient lies enveloped in blankets.

When a patient cannot sit he may lie on a sofa covered with blankets, which are raised by a wooden frame or cradle, and a spirit lamp, protected by a frame-work of wire gauze, is placed beneath it. The effect is much the same, but the chair is to be preferred.

It is too much the custom among those who treat cases of gout, to regard stiffness of the joints, which have suffered from the attacks of the disease, as an inevitable evil, and to rest satisfied with endeavours to shorten the attacks and postpone their recurrence, neglecting almost entirely any means of restoring stiffened joints to their former healthy condition. This is very much to be regretted, not only because swelling and stiffness in or around the joints are in themselves a cause of great inconvenience and some suffering, but because they lead to the necessity for the discontinuance of such an amount of active exercise as is necessary to secure a return to a healthy state of the general system—the only sure safeguard against future attacks.

In very advanced stages of gout, when the cartilages have been absorbed and replaced by layers of earthy matter, when the lithates and phosphates have been deposited in large masses in the bones themselves, when the tendons and ligaments have been

altered in structure by similar deposits in and around them, and when long continued chronic inflammation has thickened and hardened every tissue around the joint, no honest man could allow his patient to indulge in hopes of receiving much benefit from any treatment adopted to restore such a joint to a sound condition. But it must be remembered, that as a morbid state such as that just described is only arrived at after years of suffering, and numbers of successive attacks, and as each of these attacks has performed its share in adding to the amount of local disease, so is the necessity made more apparent for watching the successive stages of departure from the perfectly normal condition, and for endeavouring to repair the local injury which each attack has produced without delay.

In adopting any plan of constitutional treatment, in order to contribute to the restoration of joints stiffened by gouty deposits, our hopes of success will be strengthened by the recollection of the general law, that all the solid parts of the frame may be considered as precipitates from the blood, which are constantly being deposited, and as constantly dissolved or removed. While the form of each part remains unaltered, the material particles composing it are so constantly being renewed, that the solid parts of the body must be regarded as almost as changeable as the blood itself.

The salts of potash, and particularly the iodide of potassium, have very slight chemical action on the tissues of the body, and produce no obvious changes when mixed in solution with its most abundant organic constituents, albumen, fibrine, or gelatine. It is therefore a much better form for administering iodine than a solution of the latter in spirit. The plan adopted by some persons of adding small quantities of iodine to the iodide before administration is a mistake, for the medicine must act in proportion to the quantity absorbed. Now the iodide of potassium contains three-fourths of its weight of pure iodine, so that a patient taking a scruple of the iodide in twenty-four hours, takes fifteen grains of iodine in that period. Of course the addition of half a grain or a grain of iodine to this could have but little effect on the constitution, while the acridity of the iodine is very apt to disorder the stomach.

All this is surely sufficient to prove, that the hope of acting upon a salt deposited in some of the tissues of the body is not unfounded, for in the iodide of potassium we have a soluble substance which is rapidly absorbed with the blood, which may be detected in the tissues of the body and in the excretions long after administration, proving that it can exert a persistent influence; and as this salt has the power of dissolving the lithate of soda,—the material

which is the principal cause of the stiffening of joints, by being deposited in and around them,—we can understand that the benefit experience has shown to follow the use of the iodide may be explained by established laws of physiology and pathology, and by the chemical properties of the remedy. In small doses the salt may be administered for a longer period with all the advantages.

It is scarcely necessary to repeat that this constitutional treatment must be assisted by an observance of the rules laid down in the Chapter on Natural Treatment. If these be neglected the best efforts will prove unavailing.

Friction and percussion form an important part of the *local treatment* which we employ as auxiliary to the constitutional.

After ordinary attacks of acute gout the joint is left somewhat swollen, stiff, and weak, but there is neither pain nor heat. This is the time to remove the stiffness and weakness by friction. Simple friction by the hand of another person answers very well. It should be employed morning and evening for half an hour or three-quarters at each period, the hands being passed, with gentle pressure, rapidly round the affected joint in all directions. The exhalation from the skin is thus remarkably increased, congestion of the cellular tissue is dissipated, and the absorbents are stimulated. It may be followed by passive

motions of the joint, then gentle exercise, and moderate pressure by an elastic bandage.

When joints are more permanently enlarged, and the tissues around them are thickened, more active friction and gradual extension may be employed, the friction being assisted by some medicated substance. An ointment of the iodide of potassium, made by dissolving half a drachm of the salt in water, and then mixing the saturated solution with an ounce of fresh lard, is perhaps the best. The solution prevents any gritty particles from irritating the skin. Sometimes glycerine, simple oil, or starch powder, may be used if the skin be tender.

Local medicated baths are also useful when combined with friction. An iodureted bath may be made by dissolving ten grains of iodine and twenty-five grains of iodide of potassium in half a gallon of water, and thus forming a foot-bath in a wooden tub. The nitro-muriatic acid bath also appears to be useful in some cases. It is made by mixing three ounces of the diluted acid in a gallon of water. The temperature of these baths may be varied from 70° to 90° Fahr., according to circumstances. The feet and ankles should just be covered by the fluid, and the person who applies the friction should carry it on round the joint of each foot alternately for two or three minutes, the whole process being kept up about a quarter of an hour twice a day. The mechanical

influence of friction appears to be thus assisted by the chemical agency of the iodine or acids on the absorbents.

After friction has been discontinued, and in some cases over the small joints when its application is painful, the iodine paint proves useful. It is made by dissolving a drachm of iodine and half a drachm of iodide of potassium in an ounce of alcohol, and is applied with a brush daily. When the cuticle peels off it is reapplied, as soon as the skin beneath is firm.

*Percussion*, or rapid tappings round the joints with the sides of the hands or the tips of the fingers—vibrations or tremulous shakings of the joint—and rotation, the patient remaining perfectly passive or quiescent, are means which are much adopted on the Continent, especially since the introduction of the system of Ling, and which have a powerful effect on circulation and absorption in the tissues acted upon, promoting the natural warmth of the part, and supplying a kind of artificial exercise to joints which would otherwise remain inactive. The irritable and enfeebled nerves are restored to their natural condition, the relaxed muscles acquire a tone, and the movements, which are at first entirely passive, in time become spontaneous and active—the processes of assimilation and secretion at length being normally re-established. The action of tremulous shaking especially seems to have great effect in making absorption

more rapid and assisting in the removal of morbid deposits. Venous absorption also is hastened by temporary application of compression above any part, as the obstruction to the circulation which produces some distension of the veins for a short time, leads to reaction and increased vigour. Rotations appear to increase the secretion of synovia considerably, and thus to render motion much more easy by lubricating the opposed surfaces of the joints. They also seem to act favourably on the ligaments.

The douche, a powerful stream of tepid or warm water, or steam, may also be used with good effect in many cases. It combines the effects of local counter-irritation or derivation with the soothing properties of a fomentation.

Mrs. W——, aged thirty-six, consulted me for the following symptoms:—She had been slightly deaf for six years in both ears, but not until she recently took cold, and suffered severely from rheumatism, was she troubled with noises in her ears. This symptom, she stated, had induced her to apply a variety of remedies for its relief, but all failed. She was, as she stated, a living barometer, always being remarkably susceptible to changes in the weather night and day, more especially when the urinary secretion is lessened in quantity, and the skin dry and hard. She now has great tenderness of the scalp, and a most unpleasant feeling on the top of the head during damp

weather, as if some one were scraping it; this is invariably accompanied with pains along her jaws and teeth, darting inwards to the ears and the top of the head. The rheumatic pains in her limbs have greatly subsided since she has suffered from this headache, which is invariably worse in the evening and during the autumn months.

## ON NEURALGIC OR NERVOUS HEADACHE.

This form of headache, usually accompanied with deafness and noises, attends those of a nervous temperament, the weakly suffering in a greater degree than the robust. Thus females are more liable to it than men; although the latter are by no means exempt. The hysterical female, and the hypochondriac of the other sex, are both subject to attacks of nervous headache. These temperaments are indicated by a variable temper, a fickleness of mind, and an exceeding susceptibility of feeling, mental and bodily, both acting sympathetically on each other. The influences of the nervous system act in a greater degree on the female constitution, and this class of headache is by no means rarely observed in the rheumatic. These persons are very subject to the influence of atmospheric changes. It often affects persons residing on or *near a damp soil.* These causes exert a constant influence on the health generally, and how much

more powerfully will they act on those of a morbid sensibility.

The effects of changes in the atmosphere are most obvious when we are called upon to prescribe for these cases. We should inquire into the nature of the soil (as to dryness or moisture) on which the patient resides. Instances of neuralgic affections may be cited out of number, arising from a residence in a marshy district, near stagnant water, or on the banks of a river, which readily subside when the patient is removed to a dry and elevated position. We have examples of this fact in many of our military officers, who, when campaigning in the marshy and damp soils of South Africa, have suffered from rheumatism of the body, and subsequently of the head, with an intermittent headache and noises, and were at once relieved by change to a mountainous or elevated station. Electric changes either positive or negative must be looked upon as exercising great influence on headaches of this nature, especially those that are observed previously to a thunderstorm. A low temperature and moist atmosphere produce a morbid impression on the feelings of the nervous at all times; cold or wet feet, travelling with the wind in opposition to the forehead—in fact, any cause which will abstract the heat suddenly from the surface, will give rise to these attacks. The humbler classes often suffer from residing in densely-populated

and ill-ventilated localities, and in over-populated apartments. Breathing the contaminated air, while frequenting crowded assemblies, such as theatres, or ill-ventilated churches and chapels, will frequently so operate on the system as to produce headache of this character.

There is a marked distinction to be made between this form of headache and that arising from disordered digestion or derangement of the liver and gastric secretions generally, the latter occurring as a consequence of indigestion, while the former, arising from external causes, will sometimes induce gastric disorder. This kind of headache often changes suddenly with the cause producing it, or frequently lasts for hours in the day, the sufferer getting quit of all symptoms towards evening. The nervous headache, therefore, may be known by its fits and starts, its frequent change of locality, sometimes affecting one portion of the head, and sometimes another; and by its attacking chiefly subjects known to be nervously weak.

An excise officer, aged thirty, who resided on a river side, was under treatment for the following symptoms:—He had been subject to rheumatism in his limbs occasionally in the autumn, and six months back was seized with violent headache and tenderness of the scalp, so much so as to prevent his laying his head on the pillow; there was a benumbed feeling

over the side of the face, scarcely any sensation being felt on touching it. He had a confused humming noise in his ears, which occasionally would resemble the ringing of bells; and he was deaf in both ears. The headache was greatly increased in any damp or cold change in the weather, more particularly when the wind was in the east, and then he suffered with darting shooting pains through the jaw and teeth, resembling toothache. His family has suffered from gout and rheumatism.

*Treatment.*—If nervous headache arises from atmospheric changes or a deep local malaria—if from studious habits and mental labour—if from deranged secretions, as in the hysteric female—if from exhaustion and debility—one and all must be met by appropriate remedies adapted to the different cases; bearing in mind that the earlier a course of treatment is pursued, the less likely are these periodical headaches to become permanent and fixed, laying the foundation for impaired memory and intellectual debility, and, in many, probably noises in the ears and deafness for life. It has been shown in the various cases related of this form of headache and noises, that it is apt to be persistent, and therefore requires a constitutional treatment, and regulated diet for its permanent cure. It would be far from the object of this essay to offer a remedy for every pain or ache. The author's aim has been to point

out the necessity of arriving at the cause, and that being settled by a proper investigation, appropriate remedies can be selected with but little difficulty.

Although the author has, for the sake of clearness, treated of the three affections—gout, rheumatism, and neuralgia in the head and ear, as distinct diseases, which, in fact, they are, yet in practice they are generally more or less complicated with each other, neuralgia seldom existing without some previous or conjoined symptoms of either rheumatism or gout, and the latter diseases generally leading to neuralgic symptoms in the course of their development.

It will now be necessary to say a few words on the *prevention* of these painful and distressing maladies.

1. The *gouty* subject should carefully avoid everything which may aggravate the arthritic diathesis. Strict temperance in eating and drinking, and a moderate degree of active exercise in the open air, stand first in importance; and if he be a professional man, he should have a little mercy on his mind, which cannot be overstrained but at the expense of the body.

2. The *rheumatic* subject should select his residence at a distance from damp and miasm, and at the same time avoid exposure to the north and east. He should protect the whole body—the head espe-

cially—from cold draughts of air, and damp clothes. The skin should be carefully solicited to perform its functions by a free and frequent use of vapour baths in the case of advanced years, and the warm bath for the young. The clothing should be of woollen, and should be changed as frequently as the weather changes. The feet should be kept warm both night and day, and exposure to the open air at night should be avoided as much as possible.

3. The *neuralgic* subject, especially if a female, as usually happens, should be well nourished, should abstain from all undue excitement of body and mind, and special care should be taken that the bowels and all the secretions be kept in good order. Exercise on horseback is very desirable; and late hours, hot and close rooms, and long abstinence from food, should at all times be avoided.

A barrister of eminence consulted me last spring, on account of the following symptoms:—He had lost the hearing of the left ear in boyhood, at which time there was a profuse discharge. This continued until he was over twenty years of age. It then ceased, and he has had no sense of hearing on that side since. He has suffered at all times with cold feet, particularly at night. A sudden attack of pains in his limbs occurred after an alteration in his dress from flannel to cotton, during the spring of the year, a headache rapidly followed, with drowsiness, a rough

and dry skin, and a profuse scurfy eruption over the head, which was traced into the ear-passage. He complained of a noise in the sound ear, which was always worse when the skin was cold. There was considerable pain in the joints of the fingers, and intense headache in the mornings.

A man-servant, aged twenty-five, of delicate constitution, recently took advice under the following circumstance:—He had had sore throat for years, accompanied with a discharge from the left ear; he took cold suddenly, was seized with rheumatic pains in the head, and in the ear on the right side, accompanied with incessant noises, and deafness towards evening, more particularly if the weather were damp or cold; the pains in the head shifting from place to place, sometimes in the forehead, and sometimes in the back part; great tenderness of the scalp, if the hair were moved by the comb, or only by the fingers. He had been subject to a "running in the nose," with an occasional pain across the bridge; in the evening the eyelids became stiffened, and the eyes sometimes bloodshot. The noises were so distressing, as almost to produce melancholy, haunting him day and night, and when at the worst, he had a feeling as if some foreign body was in the ear, requiring removal. The feet were generally cold during the day, and he always found relief if the head or feet could be kept warm and made to perspire. This

young man, there could be no doubt, was suffering from rheumatism, caused by suppressed perspiration. He was requested to pursue a course of warm bathing, and to take the guaiacum; which he did, with the satisfactory result of not only losing the distressing noises and headache, which subsided after six weeks' treatment, but the feet were now found to perspire freely, and the deafness on the right side was entirely removed; nor has he had any return of sore throat, with which he had been troubled periodically for years. The discharge from the ear on the left side continues, but as his hearing on the right is now perfect, and his occupation demands his attention, he is careless of it.

In concluding my remarks on these forms of headaches, accompanied with noises, their nature and treatment, I shall point out a few of the means which will prevent them. It will be necessary to refer briefly to the different originating causes, and more especially to those which we have it most in our power either to avoid or counteract.

There are certain atmospheric changes against which we can take no effectual precautions; but we can avoid the influence of some of them and partially counteract that of others. We can escape the effects of atmospheric impurity by not frequenting crowded assemblies in heated rooms; and we can protect ourselves from the morbid influence of cold by warm

clothing; by wearing flannel next the skin, we can solicit the circulation to the surface of the body, and keep up the perspiration; and we can favour the same healthy function by proper exercise, by sea and other bathing, as has been before alluded to, when treating individual cases. Indulgence in indolent habits induces bad health, and then bad health confirms the disposition to inactivity, through the very debility it has caused.

Excessive susceptibility of the system, as a predisposing cause of headache, is to be subdued by adopting those means which conduce to strengthen the body, and by renouncing those pursuits, habits, and occupations which weaken it. When this morbid state of sensibility is confined to the stomach, it requires from the patient the utmost regard to regimen; his diet should be nutritive, and yet easy of digestion. The stomach should be neither overloaded with the quantity, nor disordered by the quality of its food; and all salted meats, and rich and high seasoned dishes should be carefully avoided. When the headache is not very severe, the appetite is often not materially affected. The patient can eat, though not with relish; but if he do so, the consequence, frequently, is a great aggravation of the pain; this will appear an almost necessary result if we give the matter a moment's consideration. Here we have the stomach disordered, and therefore

weakened in its proper functional powers, and yet, in this morbid condition, it is overloaded with food to digest, thus inevitably aggravating the evil by adding further cause of derangement.

The food should be well masticated; the teeth should be healthy and sound. The stomach should never be filled to a sense of uneasy repletion, nor the quantity taken more than can be easily digested. There should be no urgent exercise, either of body or mind, immediately after a full meal. This enjoins obedience to a natural tendency to amusement or rest until digestion is accomplished. As it is generally a weakened form of constitution we are called upon to treat, a moderate quantity of wine or spirits is needed. The wine should be dry sherry, or a little weak spirit and water.

It is also important to easy digestion that the meals should be taken at proper times. All physicians concur in advocating the importance of regularity, both as regards the number of meals and the periods at which they are taken. Those who have weak stomachs will, by such a system, not only be able to digest more food, but will be also less liable to those affections which arise from its imperfect assimilation; because, as Dr. Darwin has justly observed, they have in such a case both the stimulus of the aliment they take, and the periodical habit to assist the process. The substantial repasts should be

separated by an interval of four or five hours, or sufficient to allow the stomach to recover its power. Thus, abstinence from food should never be protracted to cause exhaustion. The food of an invalid should not be too much restricted as to kind. An error very commonly committed, is to debar the patient from vegetables. The best form of diet is that of a mixed kind of vegetable and meat. The patient, with these restrictions, may generally be allowed to follow his own desires.

There is no more common exciting cause of these forms of headache, than that of loading the stomach with something indigestible just before going to bed. All the functions, except the perspiratory, are more or less suspended, even in health, during sleep; and this is more especially the case in the first processes of digestion. Food, therefore, taken into the stomach of a person of weak digestion, immediately before retiring to rest, lodges there during the greater part of the night very little altered. Thus acting as an irritant for so many hours, on an organ already too sensitive, can we wonder that the patient should awake in the morning with an increase of headache? But it frequently happens that the change the food has undergone during sleep, is not merely imperfect in its kind, but unhealthy likewise in its nature; the crudity generated by the morbid process usually abounds with acidity. Spirituous liquors taken on

an empty stomach, before going to bed, even though not immoderately, are no less certain to disorder a morbidly sensitive stomach, and occasion headache the next day.

The beautiful lines of Armstrong, on this subject, deserve a place in the tablets of every one liable to headache:—

> "Or would you sweetly waste the blank of night
> In deep oblivion; or on fancy's wings
> Visit the paradise of happy dreams;
> And waken cheerful as the lively morn?
> Oppress not Nature, sinking down to rest,
> With feasts too late, too solid, or too full."

But while eating too late in the day is so frequently a cause of headache, fasting too long is often not the less so. As the customs of society are at present regulated, dining about noon is now obsolete, although there cannot be a doubt that the hour indicated by natural appetite is at this period of the day. I would, therefore, recommend those of weak digestion, who cannot conveniently conform to this in appearance, to do so nevertheless in reality; let their luncheon purposely and literally spoil their dinner. The direction to eat "little and often" is more specious than judicious, as an axiom of health; part of the rule may pass uncensured—that which relates to the "little." Eating too frequently is equivalent to eating too much.

Mr. Abernethy eloquently observes: — "Nature

seems to have formed animals to live and enjoy health upon a scanty and precarious supply of food; but man, in civilized society, having food always at command, and finding gratification from its taste, and a temporary hilarity and energy result from the excitement of his stomach, which he can at pleasure produce, eats and drinks an enormous deal more than is necessary for his wants or welfare."

All of us eat much more than is necessary for health; but with respect to eating frequently, even though sparingly, it is most injudicious; for, by doing so, you allow the stomach no rest. The ordinary time requisite for the completion of healthy digestion is from four to five hours, and we evidently ought not to eat more frequently than this; if we do, we keep the organs performing the different sources of digestion in a perpetual round of action. Instead, therefore, of recommending one with an enfeebled stomach to eat "little and often," I am confident the better advice would be to substitute the word "seldom" for "often." It is a very absurd, and yet a very prevalent idea, that because you are weak you must eat. When the body is debilitated, and the stomach strong notwithstanding, this rule, under limitation, may at times apply properly enough; but is it not intuitively obvious, that where the digestive organs themselves are weak, and the weakened condition of these organs is the very cause of general debility, no dietetic

rule more preposterous in principle could well be devised to frustrate its object, than that of imposing on the stomach a task which its strength is unequal to perform? In fact, it is a rule which, whenever adopted, counteracts its own purpose; since the food that the stomach, from its weakness, cannot convert into nutriment, becomes an extraneous matter, and by operating as a source of irritation, only aggravates the local disorder, and therefore perpetuates the general debility.

Another observance, preventive of headache, is that of rising early in the morning. A very common cause of headache is that of lying later in bed than usual. As soon as the brain is thoroughly awake, it is time to rise; otherwise thought gets active, and the body restless; all intense thinking, when the head is recumbent, occasions congestion, and thus induces headache. But, on the other hand, a little additional rest is often the means of preventing a headache from ensuing, or it will sometimes prove the means of carrying it off, if it has been occasioned by previous excessive fatigue, late hours, or casual intemperance; but in such cases the brain is not excited by any intensity of thought, while it regains tone and gets refreshed by the extra indulgence. Whereas, when headaches originate from a morbid condition of the digestive functions, or general nervous debility, then the avoiding crowded assemblies and

late hours, and the rising betimes in the morning, are essentially necessary for their cure. Nervous debility is always accompanied by great general languor, and an unwillingness to rise early in the morning; but this reluctance must be combated, for it will be perpetuated by indulgence. When the headache is aggravated, as it so frequently is, by habitual constipation, this state of the bowels requires great discretion in the employment of aperients for its removal; for, when these are properly chosen, their beneficial operation is not limited merely to that of evacuating the bowels. Aperients have a powerful effect in correcting the morbid state of the different secreting organs that pour their fluids into the intestinal canal; and it is by effecting this wholesome alteration, and by stimulating the bowels at the same time to regular action, that digestion becomes natural, and hence nutritive.

It is obvious that if digestion be imperfectly performed, much of the food intended to nourish the body will be passed off as feculent. Gentle purgation, therefore, by correcting the disordered state of the intestinal fluids, indirectly proves a tonic of the most efficacious kind. This beneficial change is observable in the disappearance of the thick and foul coating on the tongue—in the improvement of the appetite—in the more natural appearance of the evacuations—and, lastly, in the more ready obedience of the bowels to

the influence of the diminishing doses of the aperient used. I have known horse-exercise to succeed in rendering efficient these means when all others have failed; and if this cannot be carried out, from debility or any other condition of disease, or from age, daily friction and rubbing of the body for half an hour, or even an hour, will in a great measure serve as its substitute. Sir W. Temple thought that no disease would resist a well-ordered rubbing of the skin; indeed, that no one need to have the gout who could afford to keep a slave in his household. The justice of this observation I have seen evidence of in many cases; the friction has caused an amount of health and comfort for many years, particularly in weakly and elderly people. The circulation of the blood is promoted to the surface, and perspiration follows. I have, in skins that have become unnaturally dry and rough, recommended glycerine to be first smeared over the surface, and the warm hand after. This must be continued until the surface is warmed, and a feeling of comfort induced. The warm bath may be used twice or oftener in the week, instead, at the temperature of from 92° to 95°. "To those who are past the meridian of life, have dry skins and are emaciated," says Darwin, "the warm bath for half an hour twice a week, I believe to be eminently serviceable in retarding the advances of age."

Professor Bain, M.A., observes:—"Next to eating

and drinking, the bath may be ranked among the very foremost of the necessaries and supports of life. It is of far higher consequence, and of more general utility, than any kind of manual exercise, gymnastic, or sport. It affects the system more powerfully than these, even in the very points wherein their excellence consists; and it is applicable in a thousand circumstances where they are not. It does not supersede, but it ought to come before these other practices. A place should be, therefore, found for the bath among the regular occupations of life; it ought to be a permanent institution, ranking immediately after the prime necessaries of our being. Either daily, or several times a week, should every one repair to it in some shape or other, either at morn, mid-day, or evening, according to strength and leisure. There certainly does not exist a greater device in the art of living, or a greater instrument for securing a vigorous and buoyant existence. It is one of the most powerful diversions to the current of business occupation; it can suspend, for a time, the pressure of our pursuits and anxieties, and return us fresh for the enjoyment of our other delights. To the three varieties of state which our bodies pass daily through, eating, working, and sleeping, it would add a fourth, luxurious in itself, and increasing the relish for all the rest. It would contribute to realize the perfect definition of a good animal existence, which

is, to have the appetite always fresh for whatever is before us."

Among other remedial agents conducive to health, is the proper regimen of the mind. The influence which the mind and body reciprocally exert on each other forms that interesting department of medical science which may properly be termed medical metaphysics. To this reciprocity is to be attributed the wholesome effect of change of scene and occupation, since it usually obliges us to renounce those very habits which have given rise to our complaints, by breaking asunder the chain of associations which we so often feel irresistibly binding us to pursuits we are conscious are injurious to our health, and which we can only forsake by flying from the sphere of their influence. Diseased states, both of the stomach and head, are frequently brought on by the particular habits and avocations of individuals who, while in the pursuit of wealth or of pleasure, disregard the institutes of Nature. The tendency of all strong mental excitement or corporeal exertions, if continued for any length of time, or too frequently repeated, is to throw the blood with increased impetus into the head, and thus to lay the foundation for headache, from fulness of blood in the brain. The preventive rule in all such cases is, for the professional man to relax the tension of his thoughts; the man of business to forget, for a time, the anxieties attendant

on the Sisyphoid toil of amassing wealth; and the votary of pleasure to forsake her haunts. But relaxation of mind does not by any means imply its total inactivity. The mind, no more than the body, can remain wholly indolent without injuring itself; but its occupations, under circumstances alluded to, should be light, pleasing, and varied. Hence it is that travelling is so conducive to health, chiefly from its agreeable incentives to bodily exercise, combined with the pleasurable excitement which the mind receives in contemplating new objects; and it is thus that the mutual morbid sympathies of mind and body are counteracted in the most antithetic way by others reciprocally healthy.

I append a brief sketch of the progress and effects of gout in the system, that it may be the better understood when its consequences are present in a special organ, as the one treated of in this essay.

The occurrence of the concretions formed around and in the smaller joints in persons long subject to gout is shown to be dependent on an effort made by nature to get rid of the "peccant matter" floating in and undissolved by the blood of the sufferers from this malady.

Physiologists will have no difficulty in conceiving the immense irritation that the deposition of a concrete earthy matter in the joints must produce in parts peculiarly smooth and hard in texture, and

intended by Nature to have free motion on their articular surfaces. Thus, no sooner is such a deposit made than inflammation of a peculiar kind is set up; when, after a longer or shorter period, the absorbent vessels of the part are stimulated to increased action, and again decompose it. It now once more enters into the circulation, under new affinities, and becomes ultimately excreted in some more soluble form.*

The concretions which form in gouty habits are usually called chalk-stones; I shall employ this term, although it is now ascertained that they do not consist, as was formerly supposed, of the phosphate, but of the urate of lime—that is, of uric acid, which we have spoken of as the probable proximate cause of gout, when it exists in the blood, and of lime in combination with that acid. This has been ascertained by chemical analysis, and, taken with the preceding facts, may aid in explaining the nature and causes of gout in all its varieties. Further evidence

* The articular surfaces of joints composed of cartilage are parts which, in their healthy state, as might, *à priori*, be supposed, are endowed with but little vitality or sensibility; in the larger joints intended to bear the weight of the body, and subjected to concussion, as in jumping, hopping, &c., much sensibility to pain would mar their usefulness. But it is a curious fact, that when once such parts are subjected to inflammation, they become most painful. This will serve to explain why an acute attack of gout, affecting any joint by metastasis, should be so acutely painful and destructive to the organ attacked, if neglected, or an error be made in the diagnosis.

in favour of this view is afforded by the fact, that during the decline of every fit of the gout, uric acid, or a salt consisting of the acid chemically combined with a base, generally ammonia, is largely deposited from the urine, and we also find that the use of alkalies and of other antacids, which have an evident influence in diminishing the formation of urea, and in causing its elimination, are, at the same time, among the best preventives of an attack of gout. All these facts tend greatly to show that the theory that gout is dependent on the presence of uric acid in the blood for its proximate cause, or at least that it is in some way connected therewith, if not absolutely demonstrated, is at all events far advanced on the road to direct and absolute proof.

In persons afflicted with gout it sometimes happens that a white liquid is effused by the exhaling arteries into internal cavities. By degrees the watery and serous particles are absorbed, leaving a substance which is at first soft and clayey, and afterwards becomes hard and friable to the touch.

This effusion occurs not only during fits of gout, but likewise in the intervals, or intermissions; and as the extremities, particularly the hands and feet, are the principal seats of gout, it is on their smaller joints that the greatest accumulation of the chalk takes place. Though this process is usually preceded and accompanied by inflammation, the chalk is never

enclosed in a cyst, like pus in an abscess; it lies usually on the cellular membrane, on the bursæ mucosæ, or in the cavities of joints; I have even seen it thrown out between the cutis and the cuticle. But as the gouty inflammation is of the erythematous kind, there is no extravasation of coagulable lymph, and no newly-formed covering surrounding the chalk. This point is of the utmost importance, and explains many of the peculiarities of gout, which is generally considered as a kind of phlegmon. But the absence of coagulable lymph in the inflamed parts I consider full evidence of the inflammation being erythematous.

The chalky liquid, when first secreted, gives to the finger the feeling of fluctuation, and cannot be distinguished from the ordinary serous effusion of gout; but, unfortunately, the absorbents cannot take up the chalky particles; they merely absorb the more fluid portion of the deposit. The liquid, therefore, thus effused, becomes thicker and thicker, till, at last, nothing remains but a hard mass. Whenever a considerable effusion of this kind occurs, the quantity of chalk which ultimately remains is comparatively small, as by far the greater quantity of the deposit is merely serum; it, therefore, usually requires repeated effusions to form any great mass of chalk, and the degree of consistency depends upon the age of the effusion and the activity of the absorbents. The quantity at last accumulated as the result of repeated paroxysms

is, in some instances, immense, thus very seriously augmenting the sufferings of the gouty; the distress, however, is not owing to any irritating quality in the deposit, but to its obstructing the motion of the tendons and joints, occasioning often complete false anchylosis, and pressing on and distending the surrounding parts by its bulk. This is observed particularly in the small bones of the ear, and I have several specimens showing its various conditions. It accounts for the neuralgic pains in the organ previous to and during an attack of gout in the extremities. These concretions are often found on the outer ear; and it is of importance to consider the fact, as it may aid the surgeon in doubtful cases of deafness, arising from this cause. They appear as little white spots, and contain a fluid of a cream-like consistence; they vary both in number and size, sometimes as small as peas, at others as large as a hedge-nut, surrounding the margin of the outer ear. It acts, therefore, by mechanically embarrassing the machine of the body, and not upon the living principle; for it will often remain for years in parts highly sensitive, without exciting the slightest pain or inflammation.

Although these concretions are of so mild a nature, they often are the cause of extensive mischief, by bursting externally, and occasioning ulcers very difficult to heal. When a violent fit of the gout attacks a part where a chalky tumour already exists, the

appearance is frequently very alarming, the new paroxysm being followed by a fresh serous and chalky effusion, which, added to the old deposit of chalk, occasions a prodigious swelling; the cutis, when distended to the utmost, generally bursting; yet it may sometimes remain entire. The chalky or serous liquid may then be seen through the transparent skin. The surrounding integuments appear of a deep red or of a purple hue, while the pain is excruciating.


THE END.

LONDON :
SAVILL, EDWARDS AND CO., PRINTERS, CHANDOS STREET,
COVENT GARDEN.