

SIGNIFICANCE AND TREATMENT OF
ITCHING.*

L. DUNCAN BULKLEY, A.M., M.D.

Physician to the New York Skin and Cancer Hospital, Consulting
Physician to the New York Hospital.
NEW YORK CITY.

Itching, or pruritus, is an unpleasant sensation which most individuals have undoubtedly experienced at some time, and yet which it is difficult to describe, any more than pain can be described. But all recognize and know that as a sensation in the skin it may be very disquieting, and that it is one often urgently calling for relief; at times also it may be so distressing that the sufferer will submit to almost anything in order to be freed from it, and will frequently claim that any amount of pain would be preferable.

Nature's treatment of itching is by scratching, and in the effort to get relief from intolerable itching animals and human beings, the latter especially, will often indulge in this, even until great injury, followed by much pain, is inflicted on the delicate tissues of the skin, as is especially seen in infants with eczema. But this alleviation is generally only temporary, while the real trouble may be greatly aggravated by the scratching. Fortunately, however, science can come to the aid of the sufferer, and by discovering and removing the cause of the sensory disturbance more permanent relief can usually be effected. I will endeavor to mention briefly and to analyze the causes of pruritus, or itching, which may be connected with and dependent on many disordered and diseased states of the skin and general system, and will also consider some of the measures best suited to reach the different conditions.

Itching, or pruritus, varies greatly in different individuals, partly according to the cause and partly also in proportion to their varying nervous sensibility. It is variously described, sometimes as a creeping or crawling sensation, as of insects beneath the skin, calling for simply mild touching, pinching or rubbing the surface; or it may amount to a deep stinging, pricking or almost burning feeling, urgently demanding severe scratching or even digging into the tissue to reach the seat of the difficulty. Between the extremes of mild and severe pruritus there may be every possible degree of nervous excitation, and the agony occasioned by violent paroxysms of itching, both in infants and adults, is sometimes distressing to witness. In some instances, however, as in mild scabies, the sensation of itching and its relief by slight scratching is said to be rather agreeable; but in the main pruritus is always a disagreeable symptom, and is a clinical sign of something wrong, either in the skin itself or elsewhere in the system; for the healthy subject should be as unconscious of the skin as of the stomach, heart or other organ.

The external signs of itching, largely the result of scratching or rubbing, also vary greatly in different patients, partly according to the nature of the trouble and cause of the pruritus and partly according to the individual affected. Thus the long scratch marks often seen across the backs of those suffering from pediculosis are entirely different from the isolated, scratched lesions seen in another parasitic disease, scabies, and are sometimes almost pathognomonic. In mild, chronic, more or less generalized eczema, there are often long lines left by the finger nails, which are quite different from the

separate, torn papules generally seen in urticaria, made by the same means.

But it is often remarkable how few external signs may be presented, even when the patient complains bitterly of the distress caused by itching; this, however, is commonly due to the self-restraint of the individuals, or to the really mild character of the pruritus, which may seem to them greater than it actually is. In many cases, on the other hand, the results of scratching will seem to be out of all proportion to the severity of the exciting cause.

The locality of the itching will also often be a significant feature and contribute to the correct determination of the nature and cause of the trouble: thus, itching on the extensor surface of the extremities would suggest pruritus hiemalis, while itching across the abdomen and upper thighs often indicates scabies or pediculosis pubis, both of which latter are occasionally met even among those well up in the social scale.

The number and variety of different skin affections which may present itching as a more or less prominent feature are so many and varied that it is, of course, unwise to lay much stress on this symptom for diagnostic purpose, for even syphilitic patients may sometimes complain of pruritus. In this latter case, however, there is commonly some other skin condition which will account for it, although occasionally syphilitic lesions will itch more or less.

This emphasizes the necessity of studying carefully the whole of the surface when itching is complained of; one can not be too careful in making an accurate diagnosis in affections of the skin, for lamentable results are constantly met as a result of an erroneous diagnosis, or often from no definite diagnosis at all.

Coming now to the causes of itching we find that they can conveniently be arranged under three general categories: 1, external; 2, idiopathic, and, 3, constitutional. Some of these need to be again divided and subdivided, so that the whole subject may be fairly well presented in the following table:

CAUSES OF ITCHING.

1. External.....	Miscellaneous.....	{ Mechanical. Toxic. Climatic.
	Parasitic.....	{ Microbic. Vegetable. Animal.
2. Idiopathic.....	Neurotic.....	{ Reflex. Functional.
	Senile.	
3. Constitutional.....	Autotoxic.....	{ Acute. Chronic.
	Dermato-pathologic.	

Let us examine this table a little and briefly consider the various conditions of the skin manifesting itching as related to it.

I EXTERNAL CAUSES OF ITCHING.

Here we find two main groups: 1, Miscellaneous local irritation, and, 2 parasitic, each of which have several subdivisions:

1. Under miscellaneous local irritants there appear three groups, representing very different conditions: (a) Mechanical; (b) toxic; (c) climatic.

(a) Caused by mechanical irritants, we find the irritability of the skin often occasioned by harsh underwear;

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some persons experience much trouble when they first put on woolen undergarments, and some think they can never wear them on account of the itching they excite. Also the itching which most of us have experienced at some time on undressing at night, and the irritation which some will occasionally suffer from after a hot bath or a Turkish or Russian bath.

(b) Under local toxic irritation to the skin we have that occasioned by poison ivy and some other plants, also by poisonous dyes in the underclothing; the itching, often very severe, after the internal use of opium, is really a local toxic irritation, although operating from within.

(c) Climatic effects are seen in pruritus hiemalis, which in some patients will return with each advent of cold weather and continue more or less severely during the same. The effects of heat are frequently seen on the skin in the way of prickly heat, miliaria or lichen tropicus; the itching accompanying this is often very great.

2. Parasitic irritants to the skin may also be divided into three classes: (a) Microbic; (b) vegetable; (c) animal.

(a) Thus far we know relatively little in regard to the effect of microbic elements on the skin, but seborrheic eczema, or dermatitis seborrheica, is commonly recognized as such, and at times may be attended with very considerable itching, and it is more than probable that the ordinary microbes found on every skin may contribute a share of irritation resulting in itching.

(b) Vegetable parasites do not, as a rule, occasion much itching on the skin, but ringworm of the scalp will sometimes itch considerably, while eczema marginatum, which is really a tinea of the crotch and genito-anal region, will generally be attended with an excessive amount of pruritus. And it is very important to recognize the true nature of the disease in this locality, for ordinary antipruritic remedies or those for eczema will be of little avail, while proper parasitic treatment will arrest the itching and remove the trouble promptly.

(c) Animal parasites are well known as exciting agents of irritation of the skin, and first among these to be mentioned is scabies, which is constantly overlooked. Even in the best walks of society one continually finds cases of scabies, which have been long neglected, or treated ineffectually for long periods with internal remedies and mild applications, which are quickly cured by proper local treatment. Pediculosis of the scalp, body and pubis is also occasionally seen in private practice, and often will exist a long time unrecognized, the pruritus persisting until suitable measures are employed. All are familiar with the itching occasioned by the bites or stings of various insects, and must always be prepared to recognize that even fleas and bedbugs may be a cause of itching in persons in the best circumstances of life.

II. IDIOPATHIC CAUSES OF ITCHING.

This group is also divided into two main classes: 1, Neurotic, and, 2, senile, the first of which is again subdivided.

Itching of the skin which seems to be wholly neurotic occurs as (a) reflex and (b) functional.

(a) Reflex irritation of the skin is seen in the itching of the nose, and also often of the anus, from the presence of intestinal worms.

An interesting point comes up here in regard to reflex itching, which is of importance, as it relates to the production of skin lesions by scratching in many cutaneous disorders, and to which I called attention some years

ago.¹ This refers to the reflex excitation of the sensation of pruritus in a distant part by scratching or pinching in another locality, either for the relief of itching or experimentally at a healthy point.

Among a considerable number of observations extending over some years on my own person, I found that, while this result could not always be produced, it was by no means uncommon to have it occur, and that the reflex irritation or itching occurred almost invariably on the same side of the body to which a greater or less amount of cutaneous stimulation was applied. In this way is explained much of the itching in such a disease as scabies, in which the insects may be located in very few points, and yet excite reflex itching elsewhere, and as a result of the scratching a large amount of artificial eruption may be excited, with pus infection; the same is true of eczema, in which isolated patches will give rise to itching elsewhere, and as a result of the scratching fresh patches will develop; and the same pertains to other eruptions.

(b) Functional irritation is manifested by the well-recognized disease, true pruritus, more commonly generalized, occasionally local, and also, as I believe, also by dermatitis herpetiformis. Pruritus as a disease is independent of local skin lesions, except those occasioned by scratching, and should be clearly distinguished both from true prurigo and also from the pruritus or itching which is a symptom of so many skin affections. Undoubtedly true pruritus may possibly come from many causes which we do not now know, but so far as can be observed it seems to arise independently, it being another expression of nerve disorder, akin to idiopathic neuralgia, which latter may also affect the skin as dermatalgia. The neurotic manifestations of dermatitis herpetiformis are so pronounced and often so severe that I believe we will find its true cause in a nerve derangement, either in the spinal cord or conducting nerves; there will often be intense itching when there are very few or no cutaneous lesions. In a recent case in the New York Skin and Cancer Hospital the itching, which had been terrible, entirely ceased, and the eruption, which was profuse and very characteristic, practically disappeared for several days after a spinal injection of cocaine, which was given to produce anesthesia for an operation on inguinal hernia.

2. Senile pruritus stands alone, as a condition probably due to alterations in nerve structure in common with other degenerations belonging to old age.

III. CONSTITUTIONAL CAUSES OF ITCHING.

These fall into two groups: 1, Autotoxic and, 2, dermato-pathologic, or those relating to itching caused by or attending the presence of pathologic changes in the skin, mainly of inflammatory nature.

1. The autotoxic causes of itching may be divided into (a) acute and (b) chronic.

(a) Although some of the cutaneous affections to be mentioned under the next heading have undoubtedly more or less of an autotoxic element, there is one disease, urticaria, which manifests this relation to itching so peculiarly that it is placed especially here. All are familiar with the intense pruritus attending this affection and recognize that, while in many cases it may be impossible to trace its cause to any special article of diet, it is constantly seen in violent form after the ingestion of certain articles of food or drink, and its

1. Clinical Notes on Pruritus. Jour. of Cutan. and Ven. Dis., December, 1887.

autotoxic etiology from intestinal indigestion and fermentation is well recognized.

There is also a mild form of occasional itching, occurring irregularly in many regions, which may be observed in those exhibiting an acid or gouty state of the system. These little itchy points or places are very fugitive, and the irritation readily subsides with a slight amount of scratching; but when the acidity of the system is excessive they may prove to be more severe and persistent and prove decidedly unpleasant, requiring treatment.

(b) Chronic autotoxic irritation of the skin is constantly seen in the intense pruritus of chronic urticaria and that which often accompanies jaundice and frequently occurs in connection with glycosuria. In chronic Bright's disease it is not uncommon to have a considerable amount of pruritus, either persistent or at intervals.

2. Itching due to dermato-pathologic causes, or that which is associated with or dependent on active disease of the skin itself, generally of inflammatory nature, stands prominent among the most distressing and often rebellious forms which are met. And yet the number of these eruptions, which are often attended with much itching, is relatively small, only about half a dozen need be mentioned.

Eczema, of course, comes first, and pruritus is one of the prominent symptoms of the eruption; it may almost be said, without itching no eczema. The severity and character of the itching of eczema, as all know, may vary greatly. At times it amounts to an uneasy tickling, while in some cases with a chronic eruption the intensity of the agony seems sometimes almost beyond endurance. In acute cases the sensations are often spoken of as of a prickling or burning character, as well as itching, and the suffering may be very acute.

Erythema multiforme, during its developing period, is sometimes attended with very severe itching, which becomes more of a burning feeling if bullæ are formed.

Lichen planus is commonly accompanied with considerable itching during its early stages, and chronic patches have also some pruritus, but seldom so severe as in eczema.

Dysidrosis, or pompholyx, causes great discomfort from itching while the lesions are forming deep in the skin, and, indeed, commonly lasts until exit is given to the fluid which presses on the terminal nerves.

Prurigo is always attended with a fierce itching during its entire existence, causing the patient to scratch furiously. But true prurigo is exceedingly uncommon in this country, and need hardly be taken into account; many cases thought to be such prove to be chronic papular urticaria.

The itching attending the healing of ulcerations may properly be placed in this group. The sensation may sometimes be rather severe, and is due to the involvement of terminal nerves in cicatricial tissue before they have become accustomed to their new surroundings.

It will be thus seen that pruritus is associated with very many conditions of the skin of different character, and arises from many different causes. In every instance, however, the real nature of the difficulty is probably the same, namely, an irritation of terminal nerve filaments distributed in the skin. Whether these relate to the finer branches of the nerves or to the tactile corpuscles of Meissner or of Wagner, or the corpuscles of Krause, or Merkel's touch cells, can not yet be determined. It is only known that the skin is most abundantly

provided with nerve elements, which when disturbed give their danger signal in the way of itching more commonly than by pain.

An important feature to remember in regard to much of the itching that is complained of is that it is generally spasmodic or paroxysmal in character, and that, in many instances, if self-control is exercised, and if the part is not touched, scratched, rubbed or pinched the unpleasant sensation will cease spontaneously. Hence it is often desirable to inculcate self-restraint, and in the case of infants or some others to employ mechanical restraint, as will be mentioned later; for scratching is known not only to aggravate almost any eruption, but even to be the exciting cause of many of the new lesions, in certain affections of the skin.

But, however much self-control is urged, it is futile to expect that it can be practiced in connection with all diseases of the skin. As patients will tell you, the desire to scratch is at times irresistible, and sensible men and women will say that they would rather die than be prevented from scratching when a very severe paroxysm of itching comes on. The frantic efforts to get relief which are sometimes witnessed would be ludicrous if they were not so pathetic. And I may add also that the frantic efforts of the physician to afford medical relief are also sometimes ludicrous, because they are so pathetically unscientific.

Itching, or pruritus, therefore, should always receive the careful attention of the physician, and every effort should be made to determine the true cause or the nature of the difficulty behind it; for, as already hinted, it is Nature's signal that something is wrong, either with the skin itself or in some portion of the economy. He, therefore, poorly does his duty medically who, when consulted in regard to itching, simply prescribes a lotion, or an ointment, or an advertised remedy, instead of patiently ascertaining by careful examination the true condition of all the skin, and then seeking to determine and reach and remove the real cause of the trouble. How many cases of scabies are scattered through communities by failure to recognize and check the trouble early?

An interesting consideration in regard to itching relates to the well-known tendency to increased trouble at night. The reason for this appears twofold, relating (1) to the condition of the person and (2) to outside influences.

1. By the close of the day a certain amount of nervous energy (of which we know so little) has been expended, and a consequent exhaustion of nerve fiber and power, which is ordinarily renewed by sleep, "Nature's sweet restorer." It is quite natural, therefore, that at that time the exhausted nerves should give their cry of distress at any violence or injury that is done to them by pathologic alterations of the cutaneous structure to which we give the names of various diseases. The terminal nerves are naturally more readily irritated by the effused products of many skin lesions pressing on them, or even by the bites of insects, as in scabies, etc. In the case of idiopathic pruritus, without apparent alteration in the skin, the itching is, as has been before remarked, simply the cry of distress of the debilitated terminal elements in the skin tissue, as a neuralgia is the nerve cry of larger conducting nerves.

As a result of the day's activity the blood is also more filled with the products of catabolism, which are removed by the excretories during sleep, and which naturally irritate sensitive nerve fibers; as, when there are gross errors of metabolism the brain cells are irritated, caus-

ing dreams, even to nightmare and "night horrors." Bouchard² has shown a marked difference between the urine secreted during sleep and that of the waking hours. He states, as a result of his experiments: "What is certain is that during the day the body forms a substance which, when accumulated, would induce sleep, and that during the sleep it elaborates, instead of this narcotic substance, a convulsive substance which, when accumulated, could produce muscular twitchings and induce waking."

Another personal reason for greater suffering from itching at night, as sleep comes on, is found in the "subsidence of the higher cerebral functions," whereby the individual loses control of the active powers of the mind and body, allowing physical infirmities to assert themselves. Thus we find rheumatic and neuralgic pains often more severe in the night and itching as well. Moreover, not being occupied with mental or other activity, even the same or a less amount of itching is more noticed and gives greater annoyance by disturbing the equilibrium when one desires to sleep.

2. Outside influences have also something to do with recurrent or increased itching at night. The irritation of the skin caused by undressing and by exposure to the air, which is generally cooler than the surface has been when fully clothed, are efficient causes. Many a patient may be comfortable during the day, but when ready for bed may suffer greatly from itching, which will delay or prevent sleep. These patients will also suffer when warm in bed, partly from a reaction after chilling the surface in undressing, partly from too warm covering and partly from friction incident to moving about. Often patients will get up at night to make fresh applications or dressings, but my constant advice is so to dress and treat the affected parts before retiring that this shall not be necessary; and, if possible, that they shall make any additional applications under the bedclothes so as not to expose the surface again to the chilling effects of the atmosphere.

TREATMENT.

Coming now to the treatment of itching or pruritus, it will be seen that this is a large subject, covering many points, and even reaching far into general medicine. Naturally it can not be expected that the whole ground will be covered, for that would involve the complete treatment of the many different diseases which have been mentioned. There is only time to classify the subject-matter and to direct attention to the lines along which treatment must be pursued, giving some practical suggestions regarding certain points.

Treatment obviously divides itself into: I, Constitutional and, II, local, under each of which heads there are several points to be considered.

I. Constitutional Treatment.—This includes: 1, Dietary and, 2, medicinal, both of which, of course, relate to only a share of the cases, but which should always be borne in mind.

1. Dietary measures certainly are of importance in the class of autotoxic and nervous cases, and also more or less in those of the last class, in which the itching is due to active skin lesions. This need not detain us, for it is based on principles well known to the profession, and which I have often dwelt on at length.

2. The internal medicinal treatment of itching may be considered under four heads: (a) General; (b) neurotic; (c) analgesic; (d) hypnotic.

(a) General treatment naturally does not relate to instances of itching from purely local causes, although even in some of these cases a thoroughly proper general medical treatment will often render the skin less sensitive to local irritants; for it must be remembered that lowered general and nervous vitality predisposes the skin, as any other organ, to disorder and disease. Many a case of dermatitis seborrheica will manifest itching of the scalp or elsewhere on each occurrence of dyspepsia, and prickly heat occurs only when the patient is in a deranged condition of health.

But in regard to a large number of patients complaining of itching, belonging to the last two groups in the general classification presented, internal general or special medicinal treatment is of advantage in removing the systemic or organic difficulty causing the unnatural sensations in the skin. This, of course, relates to the proper treatment of the various diseases attended with itching, and can not be entered on here, but it is hardly possible to emphasize this too strongly.

(b) In neurotic patients general treatment is often of the greatest service and absolutely necessary in many cases, for it must be remembered that, as neuralgia is a nerve cry, indicating a lowered vitality in some portion of the nervous system, so itching may often be a signal of diminished nerve resistance to external or other irritants, calling equally loudly for help. In aggravated or prolonged itching, therefore, great attention should always be paid to therapeutic measures which restore the nervous system to a normal state and maintain it so. Arsenic may sometimes be of value in connection with other remedies, but alone it is powerless to allay itching. The various proper nerve tonics, iron, strychnin, quinin, preparations of phosphorus, cod liver oil, etc., may each and all of them alone and combined be needed in many cases to effect the desired result. Electricity in the form of static or galvanic current is also of value when properly utilized, and x-rays are sometimes of value in arresting itching.

(c) Analgesic internal medication at times may be of great value in the treatment of itching, but is also very often greatly abused, especially when employed empirically or without the use of proper measures to remove the cause of the pruritus. It is well known that opium and morphin are worse than useless, for while insensibility to the suffering may be produced thereby they really aggravate the cutaneous irritability and in the end do much harm; if sleep is thus induced the patient scratches while asleep, and on awakening experiences even more pruritus.

In very rare cases a whiff of chloroform has been of service in producing insensibility, so that other measures can act; but in the end, if repeated, this also does harm.

Many of the recent coal-tar and synthetic products have been recommended to give relief from itching, and frequently they will have a more or less beneficial effect; but they must be used with great caution, and frequently the subsequent results are unsatisfactory and even harmful. Many times I have seen cases in which the use of trional had certainly aggravated the real trouble, and I have thought that the same was true after some of the other so-called analgesics which have been used of late years.

Veronal, however, seems to be an exception, and I have used it, often in repeated doses, with good effects, and apparently also without subsequent harm. In a

² Bouchard: Auto-intoxication in Disease, Philadelphia, 1896, p. 41.

number of cases I have enabled the patient to obtain very satisfactory sleep from repeated doses of phenacetin.

A combination of chloral and bromid of potassium, with a little aconite added, will often act well.

Some years ago I wrote favorably in regard to the use of the tincture of cannabis indica in controlling itching, and if judiciously used it is often of value. I have also advised tincture of gelsemium, repeated every hour or even every half-hour, for three or four doses, and have very frequently seen perfect rest secured by it; I have also given it with other mixtures during the day, with good effect, but once, from an overdose, I had very startling and unpleasant effects, even temporary blindness, produced by it.

II. Local Measures.—The local measures which may be employed with advantage for the relief of itching belong to two classes: 1, Hygienic, and, 2, medicinal.

1. The proper hygienic treatment of a skin affected by itching is very important, and, unless correctly attended to, the condition may not yield even to otherwise good treatment. From long observation I am convinced that many, who have the facilities for it, bathe the skin far too much and often keep up a pruritic state. The normal, healthy skin should have a certain amount of greasy or oily secretion, and when this is too frequently removed by bathing and free use of soap the surface becomes dry and harsh, and its abundant nerves are thereby irritated. Unless caution is given and full directions are insisted on, those in the better classes of society will surely transgress in this particular. Also in drying after bathing, patients will exercise too much friction, and then the overstimulated and excited skin will give occasion for more or less scratching, and the trouble is prolonged in spite of the best treatment. I frequently direct that the skin be dried, whenever a bath is allowed, by soft old hand towels, not ordinary bath towels, a number of them being used, which have been thoroughly heated.

The kind of underclothing is also sometimes of consequence, although I think that its importance is frequently overestimated. I believe that most skins are better with pure woolen garments next to them if the texture is fine and unirritating, although I find that a number do well with the linen mesh undergarments. Cotton is undesirable, and I do not ordinarily favor silk. But I constantly find that if all other treatment is correct, and the skin properly cared for, many persons can wear woolen underclothing who previously thought it impossible.

Restraint from scratching comes properly under this head and is, of course, particularly desirable in the case of infants with eczema. For this purpose I have for many years employed the very simple device of putting the child inside a small pillow case, the head protruding through a hole made in the closed end. This is pulled down to the shoulders, and the arms are secured at the sides by means of several strong safety pins, and one pin is also fastened between the legs, so that the whole wrapping can not be raised. Time and again mothers have expressed the warmest appreciation of this device, which has completely controlled the child, and allowed proper applications to cure the eruption. It is well to remember here, what was previously said in regard to the spasmodic character of itching, that it often ceases if the part is not touched or scratched. A good apparatus has also been put on the market under

the name, I think, of "Scratch not;" this consists of celluloid sleeves, to be fastened at the shoulders, which prevent the child from bending the arm and reaching the face. Another patented affair is sold under the name, I think, of "Hold hand," which consists of perforated aluminum balls, into which each hand is placed, with a sleeve attached, which latter is pinned to the clothing. This is also valuable to prevent thumb sucking.

Even in adults it is sometimes necessary to devise means to prevent scratching, such as gloves, etc. I have sometimes tied tape to the wrists and had it passed beneath the back, so that the effort to reach the face, or the other part affected, will waken the patient.

2. The medicinal means which have been recommended at one time and another and used locally for the relief of itching are so numerous and varied that any attempt to classify or even to mention them seems almost hopeless. From the multiplicity and variety of remedies proposed it is readily understood that there is no one single efficient means at our command to stop itching. This, of course, follows from what has been said in regard to the different causes which may produce pruritus. Each case has to be studied by itself and suitable measures employed to combat the real disease present. Carbolic acid alone stands pre-eminent, and when rightly employed is certainly a valuable remedy and is a constant addition to many applications for the relief of pruritus.

The external applications which more or less control pruritus as a symptom may be divided into those which are: 1, Soothing and, 2, analgesic; both of these are used in the form of lotions and of ointments.

The calamin and zinc lotion, so widely known, is one of the best, mild, soothing applications in many pruritic conditions. The formula which I employ is composed about as follows:

R. Phenol (acidi carbolici)	3ss-3i	2-4
Pulv. calamin. prep.	3i	4
Zinci oxidi	3ii	8
Glycerini	3iii	12
Aquæ calcis	3i	30
Aquæ rosæ q. s. ad.	3iv	120

M. Sig.: To be sopped repeatedly over the surface.

Ichthylol is a very valuable remedy, and in from 10 to 25 per cent. solution, in water or oil, will often act very efficiently; it is also very valuable in ointments.

The liquor picis alkalinus, which I introduced some years ago, is also serviceable. It is made as follows:

R. Picis liquidæ	3iv	15
Potassii causticæ	3ii	8
Aquæ	3x	40

M.

The potash is dissolved in the water and rubbed up with the tar in a mortar until perfect solution is effected. This is to be diluted in varying strength, one part to ten or to twenty of water, and bathed over the surface, a suitable ointment being applied afterward.

Lead and opium wash is often employed and occasionally will be found effective, but, as a rule, it does not answer so well as other remedies.

Ointments are constantly employed to relieve itching, and if properly constructed and efficiently applied answer well, although often annoying to the patient. For rather mild general itching a carbolized compound lanolin ointment, such as I have often designated "skin food," is valuable, made as follows:

R. Phenol (acidi carbolici)	gr. xx-xl	1 30-2.60
Lanolin	3i	30
Boro-glycerin	3iv	15
Unguenti aquæ rosæ	3iii	90

M.

This is applied with the palms of the hands and gently rubbed in until about all is absorbed.

A mixture of camphor and chloral is a very efficient antipruritic, made thus:

R. Chloral hydrate		
Camphor gum, of each	3ss-3i	2-4
Rub together until liquid and add:		
Compound lanolin ointment (as above)	3i	30

M. Sig.: To be gently rubbed in.

If there are any raw surfaces this will sting considerably, but on the unbroken skin it is very comfortable and allays itching greatly.

Many skins do better without any greasy application, and the glycerite of starch can be substituted in the above ointments for the fatty base.

Tar and the tarry preparations, oil of cade and oleum rusci, are also valuable antipruritic remedies, and may be freely used without danger of absorption.

Much more could be given in this same line of local therapeutics, but the object of this paper is not to detail the method of treating itching; it is rather to direct serious attention to the many causes of itching and to the necessity of studying all cases very carefully, and by accurately determining and reaching the cause to give relief to the symptom, itching.

531 Madison Avenue.

DISCUSSION.

DR. W. T. CORLETT, Cleveland, Or., said that he understood Dr. Bulkley to say that true prurigo is a very rare affection in this country. Dr. Corlett said that he has seen several typical cases of prurigo, as described by Hebra, and, so far as he has been able to observe them in Cleveland and elsewhere, he believes that, if less common, they are quite as typical here as in Vienna. Dr. Zeisler, some years ago, called attention to cases of prurigo seen in Chicago, which, Dr. Corlett thought, were said to be like those observed abroad.

DR. GEORGE T. JACKSON, New York City, remarked that a very severe type of itching is not infrequent at the menopause. Senile pruritus is due not only to changes in the nerves of the skin, but to changes in the skin itself. It becomes thin and dry, and there is an absence of the natural oil, probably due to changes in the sweat glands. These patients sometimes find great relief in simply oiling the skin with cocoa butter.

DR. L. DUNCAN BULKLEY, New York City, said that, in his experience, prurigo differs in different parts of the country. Many cases of supposed prurigo in the Skin and Cancer Hospital eventually prove to be urticaria. Dr. Bulkley said that he has used aspirin, which is supposed to be an anti-acid, and that he agrees in regard to the value of oily applications in certain forms of pruritus. Some of these people bathe too frequently and thus remove the natural oil of the skin; some patients say that their itching is much less troublesome while they are traveling and deprived of their usual baths.

Prevention of Dust.—The Stuttgart Medical Society recently appointed a committee to discuss the question of the prevention of dust and the advisability of a municipal ordinance forbidding the trailing of skirts on the street. The committee report referred to this as unessential, as the automobiles and tramways are responsible for whirling up most of the dust. If the streets are kept carefully cleaned, the report continued, there will be no dust to be set whirling, consequently the measures advised are, prevention of spitting on the street, selection of pavements only after study of their dust producing properties, and warning notices in regard to the dangers of dust to be placarded by the board of health.

INDICATIONS FOR THE EMPLOYMENT OF ADRENALIN CHLORID, IN CONJUNC- TION WITH COCAIN, IN OPER- ATIONS ON THE EYE.*

SAMUEL THEOBALD, M.D.

Clinical Professor of Ophthalmology and Otology in Johns Hopkins
University.
BALTIMORE.

For several years, as a matter of routine, I have been employing adrenalin chlorid in conjunction with cocain in many operations on the eye. At first this was done solely to lessen hemorrhage, but for some time I have used it not only for this purpose but because it soon became evident that through its action the anesthetic effect of the cocain was definitely increased.

In operations on the cornea and conjunctiva the anesthesia produced by cocain is, as a rule, so complete as to leave little to be desired, but this can not be said of certain other operations, notably those on the ocular muscles, on the lacrimal apparatus, and those done for the cure of chalazion or other tarsal cysts. Here, where much is to be desired in the direction of more perfect anesthesia, adrenalin has proved of undoubted value.

That adrenalin used in conjunction with cocain facilitates, in a mechanical sense, the passage of probes through the occluded lachrymal duct has not been evident to me, but that it renders the introduction of the probes, as well as the slitting of the canaliculus, less painful is hardly open to question. There can be as little question, I think, that chalazion operations in like manner are made much more tolerable than are those in which cocain only is used.

In tenotomies of the ocular muscles the hemostatic action of adrenalin is of great advantage, though it must be confessed that it does not always as effectually control hemorrhage from the divided tendon as it does from the conjunctival incision. In addition to this effect, however, I am sure that it makes the operation—especially the cutting of the tendon and the manipulations with the strabismus hook—decidedly less of a tax upon the fortitude of the patient.

In operations involving the making of a corneal section, especially cataract extractions and iridectomies, with the exception of iridectomy done during an attack of inflammatory glaucoma, experience has taught me to be rather chary in using adrenalin. For, though I have employed it several times in cataract extraction with no ill effect, I have felt more than once that the operation was complicated by its use. Particularly was this true of one case in which, immediately after the completion of the section, the cornea lost its transparency to a remarkable degree and collapsed in crater-like fashion, the further steps of the operation thereby being rendered decidedly more difficult. In such operations, too, there seems to be no definite reasons for employing adrenalin, since the anesthesia from cocain alone is usually satisfactory.

This last observation does not apply, however, to iridectomies performed for the control of inflammatory glaucoma. Here, as is well known, the anesthesia from cocain is often far from satisfactory. For this reason, and because, moreover, the astringent effect of adrenalin is decidedly helpful, I have preferred to use it under such circumstances. It is interesting to note that Pro-

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